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Transforming the business of broadcasting

How to satisfy consumers, improve agility and control costs through a new approach to workflows

The information delivery platform for European business

1. The changing face of broadcasting

Will 3D television take off or be a passing fad? What about Web TV and Connected (or Smart) TV? While HDTV is certainly here to stay, will Super High-Vision become a widely adopted standard? These are just a handful of the content delivery issues facing the broadcasting industry as it looks for new and better ways to monetise content.

The industry has certainly been through major technology-driven changes before; but the current pace and scope of change is unprecedented, driven by consumer expectations for higher quality and multiple methods of consumption: 'catch-up' as well as live; through computers and mobile devices as well as on TV.

The days of major TV broadcasters having complete control over when, where and how their viewers consume content are gone. It's not just that consumers can easily record TV on a DVR device and skip the ads; they've also become used to getting content online, from all over the world, for free. Although broadcasting is not in quite the same boat as news publishing, the industry is having to pay close attention to what it asks customers to pay for, so as not to fall prey to new models delivering better choice and value for money.

The winners will be those that can most effectively tailor their offerings to customer expectations – and deliver without multiplying their own costs. The revenue opportunities are certainly there and broadcasters are exploring all the options: from raising the price for original content where the market will bear it – think of sports channels charging a premium for high-quality broadcasts – to reusing content in ways that can be charged for, such as pay-per-view access to archived material. In search of new revenue streams broadcasters are also increasingly becoming global players, sourcing content from across the world to grow their share of viewers' wallets.

As broadcasters seek to create new content monetisation models, how do they:

- Support multiple data sources, content formats and distribution channels without breaking the budget?
- Respond to the convergence of broadcasting and IT typified by trends such as Connected TV and Web TV?
- Ensure the quality and reliability of the viewer experience through formats such as HD and 3D?
- Focus on their core business rather than on critical but non-core activities such as managing network and storage infrastructures?
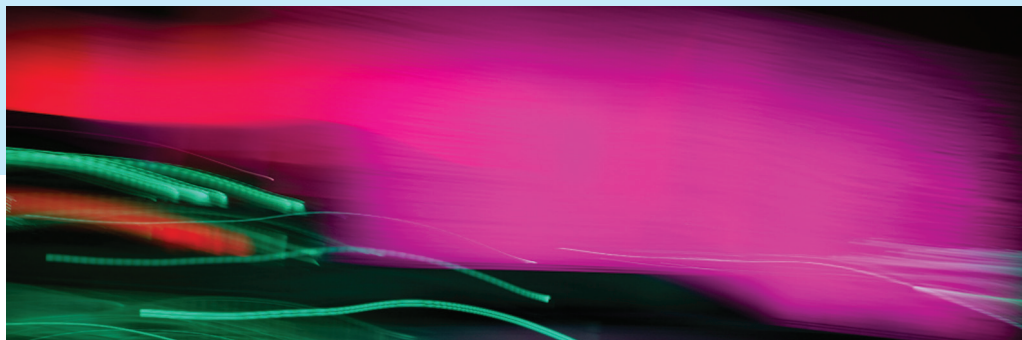
2. The drive to digital, file-based workflows over fibre

The new technologies, channels to market, payment models and sources of content are inevitably changing just about every aspect of the broadcasting workflow, from the way content is sourced, produced and ingested to the way it is processed, distributed, consumed, stored and managed:

- More bandwidth and lower latencies are being sought to support live streaming of HD and 3D content
- Network reach is being increased to support global sourcing and distribution
- New platforms are being created for online distribution and payment systems
- Multiple formats and parallel distribution activities are being managed by re-engineering key broadcasting processes.
- Broadcasters are replacing linear, 'offline' workflows based on videotape with more efficient non-linear, file-based production and distribution via digital networks. With the increasing convergence of TV and internet-based content consumption, the choice of IP networking is a natural one.

Across all of these developments, end-to-end reliability and performance quality are at least as important as cost control. This is why forward-thinking organisations in the broadcasting industry are increasingly implementing IP contribution and distribution networks via fibre-optic cable, and looking to partner with IP networking and IT service experts that understand and can support their broadcasting needs. They're finding that there are multiple scenarios in which file-based workflows over fibre offer significant benefits over videotape and satellite transmission in terms of cost, quality, agility, reach and reliability.

2.1 Lower cost for up to 80% of transmissions

For most players in the broadcasting industry, most of what they do is based on dealing with the same players and sites over and over again, repeatedly reusing known venues, studios, production and post-production locations, master control rooms, cable head-ends, media switching hubs and playout facilities. In all these cases, which account for the broadcast of up to 80% of content, fibre connections (or fibre supplemented by a microwave link for the 'last mile') are significantly less expensive – in the order of 50% less – than satellite. Portable satellite uplinks will remain important for ad-hoc situations in which there is no fibre – a news report from a remote location in Syria, for example – or for one-off broadcasts from sites if it's not commercially feasible to 'rent' wired connectivity for a short period. In addition to network reach, an important factor for broadcasters to consider when assessing potential network providers is the flexibility of their commercial offers, in particular whether they offer good pay-per-use models.

2.2 Better quality for streaming broadcasts

Fibre offers both a much higher carrying capacity than satellite or terrestrial wireless links (gigabits rather than megabits per second) and much lower latency (milliseconds rather than a second or more). This makes it far more suitable for high-quality live broadcasts, especially where two-way communication is happening. With fibre, we can say goodbye to the 'nodding reporter' waiting for the studio anchor's questions to reach them.
Obviously it's vital to ensure that the chosen network partner understands the requirements of broadcasting and can provide for them. Do they support the relevant codecs? Can they provide uncompressed feeds or carry two synchronised signals for 3D? What about service level agreements – do they offer an end-to-end SLA and is it good enough for broadcasting? This may depend on how much of the provider's service is delivered by third parties and how much of the network and associated services they own and manage themselves.

2.3 More agile content access and distribution, especially globally

Working on and transporting physical videotape is a very linear activity with severe limitations in a world of 24-hour, on-demand access to multiple formats through multiple channels. Digital file-based systems are much easier and faster to move around and repurpose, especially when part of a fully IP-based infrastructure and especially for content moved over large distances. The monetary and environmental cost to transport physical media is increasing every day, while the cost of electronic transmission is decreasing.

For any multi-regional organisations within the industry, two of the most important considerations when creating IP-based workflows is the reach of their network provider and whether they offer end-to-end availability and performance SLAs.

2.4 Reliability taken care of

Fibre-optic cables aren't vulnerable to solar storms or rain fade. They can be damaged by ship anchors, but the risks are extremely low – when it happens it's rare enough to be newsworthy – and getting lower all the time as alternative routes are deployed. Protection zones around some cables further reduce the risk; for example, the Australian Communication and Media Authority (ACMA) has a protection zone that restricts activities that could potentially damage cables linking Australia to the rest of the world.

It's certainly important to ask potential network providers about the resilience and redundancy of their networks and any potential single points of failure. In reality, both satellite and fibre are extremely reliable forms of transmission and both are suited to different contexts, which a knowledgeable network partner will be able to advise on.

3. The pace of change: barriers and opportunities

The move to file-based digitised workflows is happening at different rates for different parts of the broadcasting workflow. For example, live multi-camera productions are still predominantly captured as video images and mixed in the video domain.

The file-based transition is most advanced in the area of post-production, where video images are frequently converted to data formats that can be manipulated, distributed and stored in broadly the same way as any IT file. But once post-production is complete the end-product is still likely to be output back to tape for onward distribution and long-term storage. These are the areas where file-based digitisation and IP-based connectivity have the greatest potential to improve agility and reduce cost and environmental impact.

Technical challenges certainly remain. Two important obstacles, for example, are the resource-intensive requirements of transcoding and the lack of agreed standards for content indexing. But file-based digitisation is definitely on the rise as more content is created digitally, old tape-recorder systems or other legacy technologies reach the end of their life, and broadcasters reengineer their processes to support new revenue opportunities. Those looking to monetise old content, for example, will certainly be working on effective ways to turn their archives into online file-based storage that can be accessed by customers on demand.

Facing rapid growth of file-based content, industry players will also want to ensure that they don't have to divert resources away from their core content management business to worry about keeping new storage infrastructures up and running, being able to scale quickly, and taking care of business continuity and disaster recovery. There seems little point in saving time and money for researchers and news providers to browse and download old clips for reuse, if providing that service is an expensive and time-consuming burden on another part of the business. Many broadcasting organisations are talking to managed storage providers to explore ways of leveraging their expertise and economies of scale. The ideal is to find a provider that can offer an end-to-end package combining broadcasting industry expertise with broadcast-ready networking, computing and storage capabilities.

4. About Colt

Colt is Europe's leading information delivery platform. We offer a comprehensive set of broadcast-specific services supported by a team of consultants with expertise in your industry and skilled engineers to tailor solutions to your needs. Our broadcast customers include CANAL+, Eurosport, France 24, Globelynx, MTV and TF1.

With our own wholly owned pan-European broadcast-quality fibre network, more media customers on our network than any other provider in Europe, and access to the content passing through BT Tower and Hibernia Media's platform[1], we offer our broadcast customers a unique combination of network reach and access to content delivered over fibre. With Colt you get a full end-to-end service unmatched by any other (non-satellite) broadcast network provider, with flexible commercial models suited to your CAPEX and OPEX needs.

[1]BT Tower is the largest media switch in Europe, which is responsible for 95% of UK video traffic and 75% of video traffic between the UK and Europe. Hibernia Media is a division of transatlantic cable operator and builder, Hibernia Atlantic, and provides fibre-based video transport for the broadcast industry in the US.