Trends in Media & Broadcast:
The Emergence of All-IP Digital Platforms,
Accelerated Take-up of Cloud-based Services, and the Globalization of Content

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The media and broadcast industry is undergoing huge change as UHD, on-demand viewing, and digital transformation break all the previous rules. Underpinned by interviews with major broadcasters, this report analyses the main trends.

Summary

Current Analysis interviewed a pool of media and broadcast service companies operating in Europe, North America, and Asia, and leveraged the company’s sector market expertise to produce this paper. This report explores how digital transformation of broadcasting networks has forever changed the landscape of media broadcasting services. Services are evolving in multiple directions allowing for the creation of innovative commercial models, while new asset-light ‘as-a-Service’ concepts permit lower operational expenditure (OpEx) and previously unimaginable business agility. The media and broadcast industry has already begun its own dramatic evolution to survive in the face of the great sea change that is underway. Meanwhile to meet new needs, traditional telecommunications providers have become proficient in supporting media and broadcast network needs and more, such as cloud platforms, streaming, encoding, live event broadcasting, digital delivery of files, and new channel launches over IP.

The media and broadcast market segment is driven by end-user demand and behavior. Media and broadcast companies have recognized that they have to be nimble and embrace digital transformation to grow their businesses. They need to deliver good quality content to multiple devices, including tablets and mobile – it is no longer just about the traditional household TV. Failure to deliver opens the gates for disruptive players such as over-the-top companies (OTTs) and market disrupting companies, such as YouTube, TiVo BOLT, and Netflix, to garner market share. The following bullets summarize the main themes and takeaways drawn from the results of the interviews with broadcasting companies combined with existing market knowledge about commercial strategies and new technology adoptions.
Key Takeaways

• **Technology Change:** There has been a huge shift from traditional hardware-based platforms and satellite-borne delivery to terrestrial all-IP transport of media and broadcast content.

• **Higher Definitions, On-demand, and Any Device, Anywhere:** The entire industry is progressing towards higher definition formats, on-demand content, and making content available over multiple devices.

• **Security:** Cloud broadcast platforms are regarded with concern due to security issues.

• **Improving EBITDA:** Cloud and virtualization are seen as technologies that should help improve EBITDA as well as enable penetration of new geographical markets and supporting rapid processing and delivery of content.

• **Advertising:** Revenues are still achievable from online mediums with strategic placement necessary to prevent irritating end-users, and traditional TV broadcasting advertising still creates revenues, especially during live events.

• **Agility:** Speed in the entire service chain from on-premises video editing, transcoding, tagging, and passing forward for delivery and localization, is a must for a competitive edge.

• **Growth Opportunities:** Expanding into new geographical markets represents new growth opportunities and can be enabled by digital transformation.

Perspective

**Current Perspective**

**Market Drivers**

The market drivers ushering in a new era of broadcast models include customer-driven demand for premium quality channels and on-demand. Older models are on the wane; these include traditional TV and standard definition (SD). Replacing these mediums are video-on-demand (VoD), Internet-borne on-demand media and entertainment, and a seemingly unquenchable thirst for better definition formats including high definition (HD), ultra-high definition (UHD), 4K, and 8K resolution on the horizon. TV broadcasters can no longer rely upon previously robust advertising revenues. The industry now features large numbers of ‘cord-cutters’ – namely users that will no longer pay for traditional TV packages, but have changed their viewing to online mediums. Serving up flexible viewing has proven successful for Netflix, which has managed to attract over 26 million customers and is expanding to new global regions. In a statement by Nielsen, viewership numbers for four major U.S. broadcasters – namely ABC, CBS, Fox, and NBC, demonstrate that numbers are down by 25% within the age group of 18-to-49-year-olds compared with the previous year.
Forecasts suggesting that that linear TV would be extinct by now have not become reality, but there is certainly greater choice than ever, and broadcasters have to adapt to new content delivery approaches.

**Globalization**

In response to challenging domestic markets, TV channels and broadcasting companies are increasingly casting their eyes to new potential markets in expanding global broadcast networks. On-demand content is eroding the traditional regional or domestic plays, too, in other words as foreign populations relocate and travel frequently as part of the wider globalization trend broadcasters need to serve up the compelling content wherever the subscriber goes. Expanding into new geographies also gives expanded target markets and opportunities to grow subscriber markets in fresh fields. For example market opportunities have been identified in interactive news services, including making news more appealing to younger adults, and international market penetration. Some countries and regions are monopolized by a small number of incumbent broadcasting firms and this raises opportunities to enter the market with new and innovative content. The introduction of all-IP broadcast services has resulted in the breakdown of regional rights with reduced governance and distribution rights exclusivity over digital online formats. The all-IP and digital transformation trends is also driving emerging new greenfield content that can be globally distributed and consumed.

**Speed**

The faster the content is distributed for localization and editing, the faster the company can reach to its target audience and the better is the revenue recognition. Speed is important because if content is seen by viewers elsewhere, then it means losing viewership to competitors. Clearly speed and guaranteed uninterrupted delivery is everything when it comes to premium live events broadcasting such as sports and concerts, with viewers willing to pay for a good experience. All the companies interviewed had the same conclusion: speed of distributing content is vital for that competitive edge; it allows faster growth; differentiation; and better branding. The processes of content creation, collaboration between departments and partners, transcoding, and final delivery, need to be efficient to prevent time delays creeping in, also known as ‘operation sting’.

Modern IP and cloud services can boost revenues, but to be successful the broadcaster needs to be nimble in serving up new channels and ensuring that content is available for rapid distribution in different formats. The handling of digital media is a major 24/7 operational task. More than one company interviewed reported that high performance cloud infrastructure makes it possible for content to reach the customers in a shorter time frame thereby reducing the ‘sting’.
4K & UHD

There is much buzz about UHD, 4K, and early rumblings about 8K. Although take-up rate of 4K is progressing, content is still very minimal, and is mainly being used for premium sports and movie content. The TV industry anticipates that nearly a quarter of households will have 4K UHD compatible TV sets by 2016 year-end. Most of the companies interviewed estimated that 4K service would take another two years at least before they will gain momentum, and one respondent offered the viewpoint that HD will completely overtake SD in a few years. Respondents noted that demand is very high for moving from standard definition to HD, but less so moving from HD to UHD, with one respondent suggesting that the difference between HD and UHD is not all that noticeable. It is clear though that being able to serve up higher definition formats can be key to achieving differentiation. Activities are underway to future-proof the systems for supporting UHD, 4K and 8K resolution, such as expanded bandwidth and data storage capacities. Most players staked the claim that all their premium channels are now available in HD. 8K resolution TV sets are commercially available, but content is not, and existing 8K TV models are somewhat at the extreme end of price and size for regular consumers. But network and cable companies are preparing for 8K, with capacities and capabilities being invested on behalf of broadcast companies in order to be ready when 8K becomes more mainstream.

Content is King

Respondents indicated overwhelmingly that they have to provide a wide and diverse variety of content to maintain customer loyalty. Due to the success of OTTs, on-demand content is also a must-have part of the offerings. Content sharing between broadcast and media firms is commonplace, which is sensible given production efforts required to create video, so what is important here is the ability to transfer content and adapt it to make it locally relevant in an effective way, and digital methods rule for speed and efficiencies from rights management through to technical delivery obligations to settlement.

Technology & Migration

This is not just happening at the content delivery and transport level, it’s fundamentally changing the entire IT architecture currently used by media companies.

Cloud and Virtualization: Closely linked with the transition to IP is making operational processes more efficient, moving to a software-driven architecture and production environment. Fully virtualized video processing architecture is very new but starting to gain traction. Virtualized and cloud-based solutions can offer potentially better security and availability than existing SDI environments. A cloud-based disaster recovery approach enables a virtualized backup system, which could be located in a data center anywhere in the world. A common theme during the interviews was that Platform as a service (PaaS) definitely holds appeal as it helps in cutting the costs, high availability, security and getting pay as per-use services. The 'as a Service' model gives lower infrastructural costs, lessens the physical space and power requirements in the sites and adds redundancy and reliability to the systems. Nearly all of the interviews proved that one of the top of mind items associated with
higher definitions is the need for better security and powerful storage. There is an opportunity for a bigger digital media ecosystem play with the transition to IP delivery and virtualized infrastructure by enabling content flow, from source to multi-platform content delivery. Most service providers are forming global partnerships to add value in the complete, while hosted services and a virtualized infrastructure lets customers and partners scale up and down quickly.

Migrating to newer technologies among all respondents tended to be little steps with an eye on planning for long-term goals, including for example focusing on partnerships and improving content in such areas as cloud computing and content acceleration. Yet another broadcaster pointed to a strategically effective agreement with a partner that enables the distribution of on-demand content targeting specific audiences on multiple devices, such as iPad, iPhone, PlayStation and Kindle. Storage of files and content has already been significantly migrated to cloud-based storage mediums; and VoD content is delivered through a cloud provider. The company is looking to move to a centralized cloud provider to host all of its content exclusively.

**Issues and Security Challenges:** Migration to cloud platforms has been inhibited by security concerns. During any transition to new platforms, data can become exposed. NaaS and PaaS are appealing for a lower OpEx, but there is currently insufficient faith in security that is pervasive industry-wide. Most media and broadcast companies experience sophisticated security attacks on a regular basis and protecting video over the Internet is a primary concern. Just one player from the pool interviewed thought that generally there are no inhibitors for digital transformation; it did experience an initial security breach during a move to cloud, and after that incident it implemented a more secure solution and forged ahead unfettered.

**Roadmaps for Cloud Rollout:** Most companies interviewed suggested that the migration path consists of small steps with an eye also on long-term future-proofing for UHD/4K. Regarding timescales just in terms of an example one major broadcasting company forecasted that it expects it will have migrated between 30% to 40% of its systems onto newer architecture by Q1 or Q2 2017. One company evaluated a cloud provider partner for digital content marketing and reported that it is now achieving 99.9% uptime, faster bandwidth and increased revenue.

**Internet Broadcast:** OTTs such as Netflix embrace cooperation with operators to improve streaming and to reduce buffering. The goal for OTTs is to offer Internet video that matches or exceeds accepted quality in traditional broadcast. As OTTs pursue their own content development activities, good quality levels in Internet video feeds will increasingly rely on the service provider community for the underpinning infrastructure. Operators can sell higher IP bandwidth connections and content delivery networks to deliver reliable and high quality 4K/UHD content globally.
New Channel Launches: IP has allowed a number of companies that do not come from the traditional broadcast profile to launch channels. For example, Redbull, the drinks manufacturer, identified the need to offer exclusive extreme sports programming to its target market of under 30 year-olds and make it available via social media. In this use-case, an operator handles the entire service on its global fibre network and for enterprise customers there’s a fast time to market.

The EBITDA Challenge

Network Outsourcing is CapEx-light and Improves EBITDA: The players interviewed strongly agreed that moving IT infrastructure into the cloud is the main technology being leveraged to help lower EBITDA, while network outsourcing offers good options for supporting back-office work. Part and parcel of better EBITDA is increased sales performance and the digitization (moving to all-IP and cloud) is perceived universally as a means to achieve not just business efficiencies but better commercial agility that is all important for differentiation.

One respondent detailed that EBITDA improvement initiatives planned over the next three years would revolve around increasing sales income focusing on ‘on-demand’ to drive sales and create new demand, while adopting more cloud-based and digital platforms. An additional solid point on commercial agility is that of cloud-based content gives the option to move content anywhere across the globe rapidly.

Outsourcing More of the Stack: Traditional video infrastructure can now be managed by service providers on behalf of their media and broadcast clients. Services would typically include management of the transformation to an IP and cloud-based infrastructure, so that content owners can focus more on other strategic issues.

Win-win for the Broadcaster and its Partner Providers: One respondent explained that virtualized infrastructure offers lower costs because less hardware is used, which in turn reduces the physical space and electrical power required, while heavy traffic is balanced efficiently through a vast network of data centres, and infrastructure costs are zero for the media company. Finally the transition of file-based workflows to digital asset management applications can add speed to the entire workflow and processes of moving content between sites.
The Pros & Cons of Virtualized Infrastructure

Virtualized infrastructure can be viewed as a double-edged sword due to some setbacks that might arise during adoption. However it is certain that media and broadcast companies have to migrate to virtualized infrastructure as the benefits far outweigh pitfalls along the way. The following section discusses the advantages and disadvantages:

Advantages

- **Speed and Agility** – The entire operations chain from content production, editing, formatting, and distribution to channels and end-users becomes more agile in the all-IP and digital domain. Automation enables functions at all the points along the processes, and turning up virtual instances of various IT components from computing power to IT storage and to network functions; including Network-as-a-Service for provisioning circuits and adding capacities in real-time, ultimately give positive impact on the timeline, saving valuable time for companies.

- **Lower Operational Costs** – Players in the media and broadcast segment can avoid costly network and server infrastructure self-build by pursuing virtualized infrastructure. These parts of the essential building blocks underpinning a media and broadcast solution are left to service providers, which have already invested in and built large global IP networks and media and broadcast service portfolios.

- **Commercial Opportunities** – Entering new geographies with speed and previously inconceivable capabilities in scaling out the platforms needed to deliver to customers in new regions, but to also scale back the operations without taking a massive financial loss. This latter point means that segment players can experiment with content in new markets without breaking the bank, and grow where the uptake is possible and also shrink if necessary if the take up is lower than anticipated. There are also new commercials possible by offering more compelling definitions based on virtualized infrastructure.

Disadvantages

- **CapEx** – Despite the fact that virtualizing infrastructure also essentially means reduced ownership of physical infrastructure, there is still an initial outlay necessary to make those first steps towards migrating to a digital solution.

- **Security** – All but one of the respondents that Current Analysis interviewed had considerable security concerns. The feeling was that once content is no longer on-site and not transported on a private dedicated network, that it is exposed to vulnerabilities. Malicious activities are at all time highs against media and broadcast companies, and with ever increasing sophistication among cyber-criminal gangs, the threat reaches new dimensions in the digital world, especially for content that passes over the public Internet.
• **Human Resources** – This is not highlighted as a major concern, but nonetheless existing players in the industry have work forces that understand traditional broadcasting solutions, and are comfortable with fixing or fine-tuning them. There are implications of migrating to newer platforms, such as being able to hire technicians with the right skill-sets, and re-training staff so that they can provide the technical support for all-IP and virtualized systems.

**Summary**

It is an accepted fact that the digital age has come to the media and broadcast industry, and its arrival signifies major change. With this change comes exciting commercial possibilities; as well as challenges for all the players concerned.

This paper has explored the new possibilities and challenges in considerable depth. We believe that the digital era gives traditional broadcasters opportunities to turn the tide against OTTs and win back customers by offering on-demand, VoD, and higher definition content in flexible ways, and for penetrating new geographies.

The market will continue to evolve, the interviews have shown a spread of adoption rates, and the anticipation is that over the next three years most media and broadcasting companies will have adopted all-IP and cloud services for most of their underpinning technology solutions.

**Recommended Actions**

**Vendor Actions**

• **Higher Definitions will Require More Network and Storage Capacities** – It is a universal view that moving to HD, UHD and eventually 4k resolution will require far greater capacities. Companies need to make sure they are calling in expert advice on advanced capacity planning in order to map out future requirements and be in a position to deliver more capacities as needed during transformation.

• **Deploy Multi-layered Security** – There is no cutting corners with security, because in this industry a breach can have enormous negative repercussions. Help is at hand and companies need to once again cooperate with security experts, and make sure there is strict compliance with policy. Putting in place multi-layered security, which means several solutions and locks at various points throughout the systems, are most successful in giving an overall secure platform. Companies can contact both dedicated security specialists, as well as place trust in service providers that have proven credentials in the myriad managed security add-ons required to secure data networks, such as encryption, authentication, intrusion detection, prevention of DDoS attacks, clean pipes, and so on.

• **Small Steps and a Gradual Process** – Whilst moving quickly helps beat competitors to the punch, companies that have large established systems already broadcasting large volume content feeds must be pragmatic. Therefore companies need to adopt new digital solutions in small steps for small fractions of the IT estate, and conduct thorough test and checking of those newer systems before activating them. Making large leaps raises the risk factor of solutions outage and upset customers. During the small steps the migration team must learn
and take note of what worked well and any technical problems, and apply learning to the next small steps in the transformation process. If companies have a greenfield opportunity, then this raises the opportunity to adopt a fully digital and virtualized system from the outset, as there is no existing legacy solution to maintain in parallel.

- Partners and Collaboration – There are many dedicated broadcasting solution providers to choose to work with, and we recommend a mix and match approach with a constant eye on technology partners that will add value and assistance to the entire media and broadcast ecosystem. With the evolution towards digital platforms and virtualized IT stacks, the range of potential partners has increased to include cloud compute players, IT and systems integrators (such as HP), and network service providers.

**User Actions**

- Digital transformation raises new commercial opportunities. More flexible partner ecosystems and global expansions are areas that may be improved through harnessing all-IP and virtualized IT.

- Asset-light ‘as-a-service’ and outsourcing let other providers handle physical infrastructure and strengthened IT, allowing a company to focus entirely on the strategic marketing and sales aspects of a media and broadcast drive – such as monetization, and customer support.

- Speed and agility in offering new services such as on-demand content, and HD, are essential to survive in a competitive field, and to maintain your customers’ loyalty.

- Future-proofing the systems for UHD and 4K means being able to support higher bandwidths and far greater storage capacities in the near future.

- Good revenue streams have been created by offering HD content and migrating users from SD to HD. Boosted revenues from UHD is less significant, but broadcast and TV channels need to keep abreast of the market, offering higher definitions (UHD and 4K) has many commercial advantages, whilst failure to launch when competitors do so is likely to result in loss of viewers.
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