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Broadcast and Telecommunication: merging into one industry, or a cross-over of both?

InterComms talks to IBC, the IABM and industry leaders on the issues to both Industries

For the past 5 years InterComms and IBC have been co-operating to get Telecom companies to attend IBC (www.ibc.org). At IBC, InterComms will be hosting and filming a round table of the experts in this written paper which will be available to view through IBC, the IABM and the companies involved below and our own site. All the companies involved work with both Telecoms and Broadcast clients so are uniquely placed to discuss this crossover.

Q: Looking ahead to IBC in Amsterdam, how are IBC looking to address the cross over between the Broadcast Industry and Telecoms, and attract the industry to view what is happening in Broadcast?

A: Mark Smith (Media, Tech & Telecoms Advisor, IBC):
A good example of IBC's work in this area has been through its collaboration with TM Forum (a global association of telco service providers). IBC has been working with TM Forum to develop a number of fast-track open R&D innovation projects, the Media-Telecom Catalysts, which were created to address a series of cross-sector challenges, identified by broadcaster and telco 'champions'. At IBC, three Catalysts projects will showcase proof of concepts in terms of solutions developed over just five to six months.

The catalysts address some of today's most complex business and technology challenges, including 5G, data management, virtual and augmented reality, edge computing, AI and the automation of business processes

**Andrew Heimbold,
CEO, Singular**

**Christophe Massiot,
Founder, OpenHeadend**

**Wouter Slot,
COO, Divitel**

**Simen K. Frostad,
Chairman, Bridge Technologies**

for regulatory compliance. They have brought together broadcasters, media organisations, telcos and technology solutions providers and others. They include Al Jazeera, BBC, RTÉ, Associated Press, BT, Zeetta Networks, Cambridge Communications Systems, Tech Mahindra, V-Nova, Metaliquid and many others, working collaboratively to develop solutions in areas such as mobile based newsgathering, AI in Regulatory Compliance measuring & monitoring, 5G powered VR & AR etc. The Catalysts will be showcased in Hall 9, Stand AO2

IBC will also host the Telco-Media Innovation Forum, as part of its invitation-only Executive Series on Thursday 12th September. The forum – aimed at a C-level audience brings influential and visionary speakers from across the telco, tech and media sector to discuss strategic issues, challenges and opportunities. This year for example speakers from DT, Orange and TIM will come together with Warner Media, RTL, Al Jazeera, BBC and CBC execs to discuss the many challenges of convergence and

collaboration with broadcasters and others in the media & entertainment value chain.

A: Simen K. Frostad, Chairman, Bridge Technologies:
It's important, in answering this question, to have a historical perspective on how the broadcast industry has changed over the past 30 years. Back then, it was, in effect, a completely self-contained industry that controlled not only content creation/production, but also content delivery. Today, that is no longer true. The broadcast industry (the name "broadcast industry" is increasingly becoming a misnomer, as large parts of it no longer broadcast) no longer controls distribution: now, it relies on external networks and network owners to get its content into the hands of its customers.

Of course, the broadcast industry has never 'owned' satellite or cable – but today, it owns even less of the distribution mechanism.

Today, more than 80% of internet traffic is video – and

an additional percentage is audio and other media/content. That's not just YouTube: it's 'broadcasters' like Netflix and Amazon and, increasingly, 'traditional broadcasters. It's perhaps an overstatement to say that, if it weren't for content distribution, networks would almost cease to exist: there would be nothing for them to carry.

The fact is that the two industries – broadcast and telecommunication – have converged. They are, to all intents and purposes, one and the same: one could not exist without the other.

That inter-dependence is still growing. While so-called broadcasters still largely own the content creation/production process, that too is becoming increasingly network-dependent as the benefits of remote production become clear.

As such: the halls at IBC are largely populated by the biggest customers/users of the telecommunications industry. The issues that affect those customer/users are issues that affect the telecommunications industry. It's really not a question of IBC "attracting" the telecommunications industry: the telecommunications industry should be there in order to better understand the issues, challenges and opportunities that will largely define its future.

Q: With most CSPs (Communication Service Providers) providing IPTV and standard TV as add on services, is this effecting traditional revenue streams for the broadcasters and what new services are they adopting to help cover this short fall, if there is one?
A: Andrew Heimbold, (CEO, Singular):
Whether they are broadcasters, telco's, social media companies or search engines the battle really is about time. Netflix were reportedly identifying reading books and socialising as competitors, which of course they are. If you're reading a book, you're probably not watching Netflix so therefore you are a competitor. Traditionally broadcast

was a very linear service from both the production and creation side all the way through to delivery. It was also highly specialised. Producing live content is not easy. Netflix for all their success and huge budgets hasn't gone near live content. Our client DAZN launched as the first live, multi-sport global OTT platform - often called the Netflix of Sport. That undervalues what they have taken on though. There are huge differences and the live content side of what DAZN does is both expensive and challenging, especially at scale.CSP's are competing at both ends of the scale; firstly for content and the value of rights gets pushed up as more people compete for the same rights. Secondly for customers; viewers have more choice so platforms have to compete to offer more to attract viewers. Whether that be through lower prices or enhanced offerings. Next season if you now want to watch all the televised English Premier League football in the UK you need three separate subscriptions.

However the evolution of digital production technologies is helping everyone in two basic ways. Firstly by bringing down the overall cost of production and secondly by making it easier to create and distribute more content, more widely with smaller teams.

Take the example of Featured Tees by Fox Sports in the US last year. They used an existing fixed camera that was on a tee at the US Open. Typically for their main broadcast, this camera would have been used a handful of times. Perhaps a dozen times during any given day. However they took that camera feed, sent it to the cloud where it was taken in to a cloud production platform (Grabyo) and had automated Singular overlays added using data Fox had already paid for but was not broadcasting. From there it was broadcast live on Fox Sports' OTT platform. This gave Fox the ability to create an additional service for their viewers very cheaply using existing kit on site and cloud services for the production and distribution.

A: Mark Smith (IBC):

According to some recent forecasts, the Global IPTV Market is expected to grow to a value of some $120.07 million by 2025, advancing at around 14.2% over the seven-year period from 2018. IPTV is certainly growing at a healthy rate, and diversifying viewing but it is not significantly threatening traditional broadcasters as much as OTT and the growth of online multi-channel platforms, as well as the growing strategic trend for D2C streaming services. The reality is that IPTV, of is a very small part of what broadcasting is about. Replicating the established television business model across platforms connects content with advertising, which is crucial to successful consumption and the longevity of that success. In essence IPTV has changed the fundamental principles of broadcasting, though it continues to be a slow burn. Investing in technologies and streamlining the delivery of content across all platforms, from mobile to on demand and online is fundamental to future success of traditional broadcasters.

Q: In the Telecom Industry QoS (Quality of Service) is a term that has been bandied about for several years, with video on demand and streaming services expecting their subscribers to access their services on the go without any issues. How can a seamless architecture be created?

A: Gal Waldman, Director of Engineering, TAG Video Systems:

The internet was never designed for Video. Delivering high quality, 24/7 Live linear OTT video applications is extremely difficult. This poses great challenges when looking to replicate the QOS achieved in traditional Broadband infrastructures. Redesigning the internet to accommodate the demanding performance requirements of video is simply not viable. The focus needs to be NOT on preventing the internet from failing but rather, how quickly can you identify and or predict where a failure is or will occur and fix it before it is seen by the consumer. It is here where TAG has been and is focused and has succeeded in helping clients provide the highest QOS for their consumers.

A: Lorenzo Zanni, Head of Insight & Analysis, IABM:

With its next-frame imperative, QoS has been fundamental in the broadcast industry since its inception – viewers will not accept any buffering or blank screens, and commercial broadcasters can't afford for the advertising they carry not to be delivered at the scheduled time and quality. With the growth of Digital Ad Insertion (DAI) it is not only QoS that matters today, but also relevance to the viewer – targeted advertising.

In the early years of online video, most viewers would be tolerant of some buffering, but as high quality VoD and streaming services have come into the mainstream and high capacity broadband infrastructure to deliver it has grown, viewers now expect high QoS; a Netflix or Amazon viewer, for example, expects the same (or better) service that they are used to getting from traditional terrestrial or satellite broadcasters. IABM data shows that QoS is the third most important consideration for OTT operators.

A: Wouter Slot, COO, Divitel:

The future of video for us means that our goal is to create and develop self-healing video systems. From our Operating Center in The Netherlands, we have been already training Artificial Intelligence and Machine learning, so that it becomes possible to automate certain parts of the video operation and even prevent failures from happening. While manually managing incidents, problems and failures, we are slowly but steadily training the system so that one day, not too long from now, it will be able to manage this on its own. When this is in place, human engineers will be free to better pursue less repetitive activities, spending more time on activities that generate new revenue and prevent churn, instead of fixing problems. The video ecosystem in place will continuously improve automatically and in the end, ensure competitive advantage in today's marketplace.

A: Mark Smith (IBC):

The biggest driver of mobile data traffic is the remarkable growth and sustained increase in video streaming, which could see mobile networks carrying between four to eight times more data by 2025*. This will of course present significant and capacity risks for the mobile networks, particularly at peak hours and around peak viewing events. It is anticipated that these challenges will be addressed through a combination of factors, from the allocation of additional 4G & 5G spectrum, to the continued network investment

into the roll-out of 5G infrastructure, the trade out of 4G/ LTE spectrum holdings to complement network densification and the expansion of multiple traffic offload outlets (Wifi and fixed networks) to cope with the expected demand in the future.

Ericsson's mobile data projections & GSMA Intelligence

Q: Satellite has been the go to for broadcast transmission since the first birds went up, do you see the national fibre programmes and 5G effecting this, or will the broadcasters adopt a *if it's not broke don't fix it* attitude?
A: Mark Smith (IBC): There is no question that 5G network technology will significantly disrupt the established satellite-based broadcast model and market over the medium to long term with the potential to fundamentally change the way live broadcasts operate. The increase in performance, portability and efficiency 5G will bring about along with the gathering momentum of fibre deployment, has the potential to revolutionise the entire TV broadcasting industry.

As 5G begins rolling out across many advanced markets, we have already been seeing broadcasters and telecoms players exploring the potential, with upcoming sports events like the 2020 Summer Olympics and European football championships actively driving many 5G deployment plans. In a recent survey, for example, more than a third of the mobile operators reflected that they're planning to coincide their commercial 5G launches with such major sports events, while an astonishing 91% will trial 5G services at sports and esports venues.

The advantage of these approaches is that in the medium to long term future, broadcasters will no longer have to send out resource-intensive broadcast trucks, though full 5G TV broadcasting won't form part of the initial 5G network offering, with the design of a 5G-native eMBMS broadcast mode postponed until after 2019. All of this won't prevent live event broadcasters from making use of 5G's remote production potential in the meantime, however but

the days of large satellite trucks, production crews deploying miles of cabling could well be numbered, with the arrival of 5G network connectivity in stadia and event spaces marking the beginning of the end.

A: Lorenzo Zanni, Head of Insight & Analysis, IABM:
There are several factors to consider here. In developed markets, IABM research points to the growth of OTT at the (partial) expense of satellite providers. However, in emerging markets such as Africa and South America, satellite is still playing a prominent role in the growth of viewing numbers because it is a reliable and cost-effective means of distribution where there is often inadequate fixed broadband infrastructure to enable OTT distribution. In some of these markets with low broadband penetration and considerable economic and practical difficulties in building it out, 5G may well leapfrog broadband in distribution – particularly given the growth in mobile video viewing. In some markets, mobile is already the preferred viewing platform for the majority of their populations, and this trend looks set to grow further in the coming years, helped by the roll out of 5G.

The situation in the US is somewhat different, with satellite operators proposing to auction some of their spectrum bandwidth to 5G operators while still being able to deliver full QoS thanks to developments in compression technology. At the time of writing, whether this will be allowed to happen though is not clear, but their stock prices have increased considerably at the prospect of success in this.

There is also a school of thought which says that Pay-TV providers, many of whom rely principally on satellite distribution and whose businesses are built on content aggregation, could be in the best position to meet the growing need to enable viewers to find the content they want to watch easily. This would give them a major advantage over the proliferation of OTT channels, giving consumers a powerful reason not to cut the cord. Whichever way you look at it, broadcasters are certainly not adopting a 'do nothing' policy; they are fighting back hard in multiple ways.

A: Simen K. Frostad, Chairman, Bridge Technologies:
The role of satellites has always evolved – and will continue to do so. There are things that satellite technology can uniquely do – and there, it will persist, albeit in perhaps a different guise.

Fibre is a fantastic technology, with its bandwidth measurable in Terabytes. We can expect to see fibre used in environments that would previously have relied on satellites for very fast, long distance content transportation, especially as fibre networks continue to be built out.

It's early days yet for 5G – but the technology has enormous potential, especially as the IoT becomes more and more of an everyday reality. It can deliver the very low latency that is the Holy Grail of all networks. It's already been successfully trialled by the broadcast industry. In some applications, it will certainly displace satellite.

Satellite reigns supreme, though, in delivering data/content to the least accessible parts of the world, or the parts of the world where networking is still in its infancy. It is still an excellent technology for one-to-many content distribution.

What looks likely to change, though, is how satellites are deployed. Those incredibly expensive single big birds will begin to disappear. In their place, there will be networks in low earth orbit of thousands of much smaller, simpler, more cost-effective satellites with much lower latency. Take the 'Project Kuiper' announcement from Amazon in April – that it plans to launch a constellation of 3,000+ such satellites. SpaceX's Starlink constellation will see 12,000 small satellites deployed. OneWeb has plans for 650 – and Facebook is rumoured to have something under development.

The satellite industry will go through a huge metamorphosis. What's certain, though, is that satellites will continue to be a vital part of the telecommunications and broadcast landscape.

Q: One area that is becoming a content go-to for CSPs is national content in the form of news, sport for national's abroad. Making your own content is a major area now, what areas reflect this at IBC, and are there any new trends they should look at?
A: Mark Smith (IBC):
The digital universe has unleashed a wealth of opportunities to create, produce and distribute content across a plethora of platforms and channels to reach audiences globally. Alongside, there has been a growing trend for original and niche content (such as sports and special focus news and entertainment for nationals abroad) in parallel with the arrival of new technologies in production that are driving new, more affordable, exciting and immersive creative possibilities. In terms of getting to grips with the latest trends, strategies and developments in online TV and video, the Content Everywhere hub at IBC 2019 is a must, as focal point for those that aim to learn and experience how innovative new technologies are expanding the opportunities arising from the exponential growth of content consumption.

As ever, the conference looks at contemporary issues from a creative, commercial and technical viewpoint, allowing our visitors to form a fully rounded view and take part in the debate about the future of the industry. This year, IBC has developed daily themes across its conference, depending on which aspect of the supply chain visitors are interested in, for instance the Friday (13th September) is create and produce, which includes a look at new technologies including immersive experiences and beyond 4k resolutions, Sunday (15th September) focuses on publish: embracing the platform revolution and how the move towards new business models is disrupting the industry and Monday's (16th September) theme is consume: engaging consumer experiences, and in particular what is going to engage.

With so much disruption happening in and around the industry, it's clear that audiences are demanding ever more compelling content on platforms and channels that will connect them to the content they want, on the device they want, when and where they want to see it. This means that media producers and distributors have to find innovative, practical and secure means of monetising their IP as well as making and storing it.

A: Christophe Massiot, Founder, OpenHeadend:
Low latency HLS and DASH will allow service providers to reduce the gap between OTT streams and IPTV/cable, especially for sports content. AV1 is also a technology to look at, as it will allow service providers to reduce their bandwidth costs while improving visual quality.

IPTV providers will gradually switch to using OTT

protocols, as traditional multicast is hard to maintain and has drawbacks. Least popular contents will be switched first, and the rest of the bouquet in the long run, along with the installation of more local CDN edges. Such CDN edges will be fitted with local transmuxing and/or transcoding capabilities, to minimise the number of formats to provide at the head-end.

IABM www.theiabm.org

IABM is the international trade association for suppliers of broadcast and media technology. With 550+ members worldwide, IABM represents practically all the leading technology suppliers in the industry – small, medium and large across every step of the content chain. IABM facilitates the important networking and interaction between suppliers that shape and define the unique ecosystem of the broadcast and media technology industry.
  IABM understands that in today's rapidly changing media landscape, its members have never had a greater need for timely, relevant and effective advice and support. IABM delivers a comprehensive range of services to member companies across knowledge, training, technology, exhibitions and best practices – all designed to help them do better business. The world-class IABM Business Intelligence Unit has become the go-to resource for authoritative, actionable business intelligence on both the supply and buying side of the broadcast and media industry.

TAG Video Systems www.tagvs.com

AG V.S. specializes in Innovative IP Monitoring & High Quality Multiviewer Solutions. Its unique approach of software only provides state of the art IP monitoring and analysis tools combined with a high quality Multiviewer available on standard and mobile devices displays.

Singular www.singular.live

Singular is an innovative, new content branding tool, providing dynamic, interactive overlays to engage your audience. Our cloud-native platform lets you control your overlays from anywhere, whatever you're viewing them on. Singular works on almost all web-enabled devices, including tablets, smartphones, digital signage, smart TV and most computers.

Divitel
www.divitel.com

WIth over 20 years of expertise, our mission is to increase the competitiveness and profitability of video services. We are your partner for all things video, offering cutting-edge technology, end-to-end deployments and continuously improving operations. We do this through a data-driven approach that powers predictive automation so that you can do more with less. How are we able to do this? We have our own Operating Center from which we remotely run our customers' video services, giving us first hand expertise to leverage from.

Bridge Technologies   www.bridgetech.tv

Since its inception 15+ years ago, Bridge Technologies has been creating advanced solutions for protecting and improving service quality in the digital media and telecommunications industries, with its award-winning monitoring/analysis systems, intelligent switchers and virtual environments helping deliver over 20,000 channels to more than 900 million subscribers in 94 countries.