



IP in live production — the future is now

Research Whitepaper

Confidential

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1 Executive summary

1.1 Overview of the research findings

The transition to IP in the live production environment is, without a doubt, already underway. In a recent survey of leading broadcasters in eight countries conducted by Futuresource Consulting on behalf of NeviON, 41% of global broadcasters said they had already begun the transition to IP and were preparing their business and workflow for an all-IP future.

According to the survey, those broadcasters who had not yet started to move to IP in live production anticipated they would do so in the next two years, while a complete transition is expected to take place within the next 10 years for those in the sample looking to make the transition.

There are barriers to adoption, including cost, lack of proven technology on the market and security. There are, however, also factors that are driving adoption, namely the reduction of both OPEX and CAPEX, as well as increasing efficiencies – as expected.

Overall, broadcasters are positive about the transition and while they are not immediately seeking to replace their existing SDI infrastructure, they are planning for a full adoption of IP.

1.2 About the research

The research was carried out between August and October 2015 by Futuresource Consulting. Respondents were interviewed regarding a specific workflow within their organization in order to understand that nominated workflow, to discover where the pain points are, and to gain an insight into the opinions on IP within live production held by the live production community.

The sample consisted of vice presidents of technology and chief engineers from global broadcasters from eight different countries, who were interviewed over the phone.

1.3 About FutureSource

Futuresource Consulting (www.futuresource-consulting.com) is a specialist research and knowledge-based consulting company, providing organisations with insight into consumer electronics, digital imaging, entertainment media, broadcast, storage media, education technology and IT. With a heritage stretching back to the 1980s, the company delivers in-depth analysis and forecasts on a global scale, advising on strategic positioning, market trends, competitive forces and technological developments.

1.4 About Nevion

A pioneer in media transport, Nevion provides network and broadcast infrastructure to broadcasters, telecommunication service providers, government agencies and other industries. It enables the transport and management of professional-quality video, audio and data – in real time, reliably and securely – from the camera to the home.

From content production to distribution, Nevion solutions are used to power major sporting and live events across the globe. Some of the world's largest media groups and telecom service providers use Nevion technology, including AT&T, NBC Universal, Sinclair Broadcast Group Inc., NASA, Arqiva, BBC, CCTV, EBU, BT, TDF and Telefonica.

For more information please visit www.nevion.com. Follow Nevion on Twitter @nevioncorp

2 Introduction

The broadcasting industry has changed remarkably over the last few decades, driven by economics, intensified competition, evolving viewer demand and by technology changes. From the early days of analogue television, to the advent of satellite broadcasting, the industry is one that continues to change. In recent years though, the pace of change has accelerated.

With the introduction of the internet, the landscape was changed radically. Over-the-top (OTT) providers quickly emerged, bypassing traditional and expensive means of delivering content by using the internet to stream it into homes – at a fraction of the costs of other distribution means.

Audiences are now presented with a tremendous amount of choice of content and ways to consume it. The result is a highly competitive marketplace where, increasingly, traditional broadcasters are having to find new business models and new ways of working in order to stay competitive.

While new entrants, especially OTT providers, are not hindered by legacy infrastructure affecting decision making, traditional broadcasters that have these systems have the benefit of being able to produce high quality live content — a distinct competitive advantage.

Live content attracts significant audience numbers, depending on the scale and type of event

Live content attracts significant audience numbers, depending on the scale and type of event — from daily news, live competition shows and weekly football match coverage, to annual music festivals and huge, set piece events like the FIFA World Cup or the Olympic Games.

The challenge for live production, however, is cost. The equipment, resources, staff and logistics required for live production, especially outside broadcasts, is significant.

As IT converges with broadcasting, fewer proprietary technology is being used. In addition, the use of open standards and more cost-effective ways of production and broadcasting are being considered. Add to that, the natural evolution of continued technology adoption and the landscape is ripe for change. IT has been

present in the broadcast industry for almost two decades, with file-based workflows used widely around the world.

However, the last bastion holding out against the transition to IT-based systems and architectures is live production. This domain of traditionalists is now changing — IP has made substantial inroads into contribution and now is seriously being considered in the broadcast facilities — studios and campuses.

3 Where is IP being used now?

IP is currently in use in the live production chain for most organizations, although beyond IT equipment such as video servers and similar equipment, this is limited to contribution links. To this extent, broadcasters are already working with live video transported via IP — for example in media asset management systems and file-based workflows — and so transitioning the rest of the workflow to IP can be seen as a natural extension of this. There is an element of human resistance to the transition of the overall production workflow, but this is in the form of fears over security as well as cost rather than a simple fear of change.

As a trend, the adoption of IP in live production is still in the early phase. While it has featured on the agenda of tradeshow events like NAB in Las Vegas and IBC in Amsterdam, it only became a major feature during the course of 2015.

While broadcasters are not immediately switching from SDI infrastructure, they are starting the transition and planning ahead

But broadcasters are readying themselves for transition to full IP studios, as research by Futuresource Consulting has found. The research, conducted on behalf of NeviON, shows that 41% of broadcasters interviewed said they had begun using IP in live production in nominated workflows. It is used mostly in the production of large set piece events, like the FIFA World Cup, regular large events like music festivals or ceremonial events, and live TV shows. Futuresource Consulting interviewed senior technical staff — including vice presidents of technology and chief engineers — who worked for a host of leading broadcasters, including news, sports, television and entertainment channels.

As IP is adopted more widely, broadcasters using the identified workflows anticipate that huge set piece events and TV shows recorded as live will be amongst the first workflows to make the full transition, with 50% of respondents they were likely to do this by 2020. And, overall most broadcasters believe they will have completed the transition to IP by 2025.

Proof point — LiveIP Project

LiveIP is a project aimed producing a live broadcast in an IP studio at the Belgian public broadcasting company, VRT. It is an exciting collaboration between EBU, VRT and a number of other innovative industry partners, including NeviON. The multi-phase LiveIP Project is part of Sandbox+, an international joint platform for collaborative innovation put together by VRT, EBU and iMinds. Many of the industry's leading technology partners are participating in the project.



LiveIP uses state-of-the-art IT-centric hardware and software to show how broadcasters can use the technology to produce programmes quickly, efficiently and cost effectively.

The first full IP-based live broadcast production is anticipated to take place in the first half of 2016.

<http://sandbox.vrt.be/liveip/>

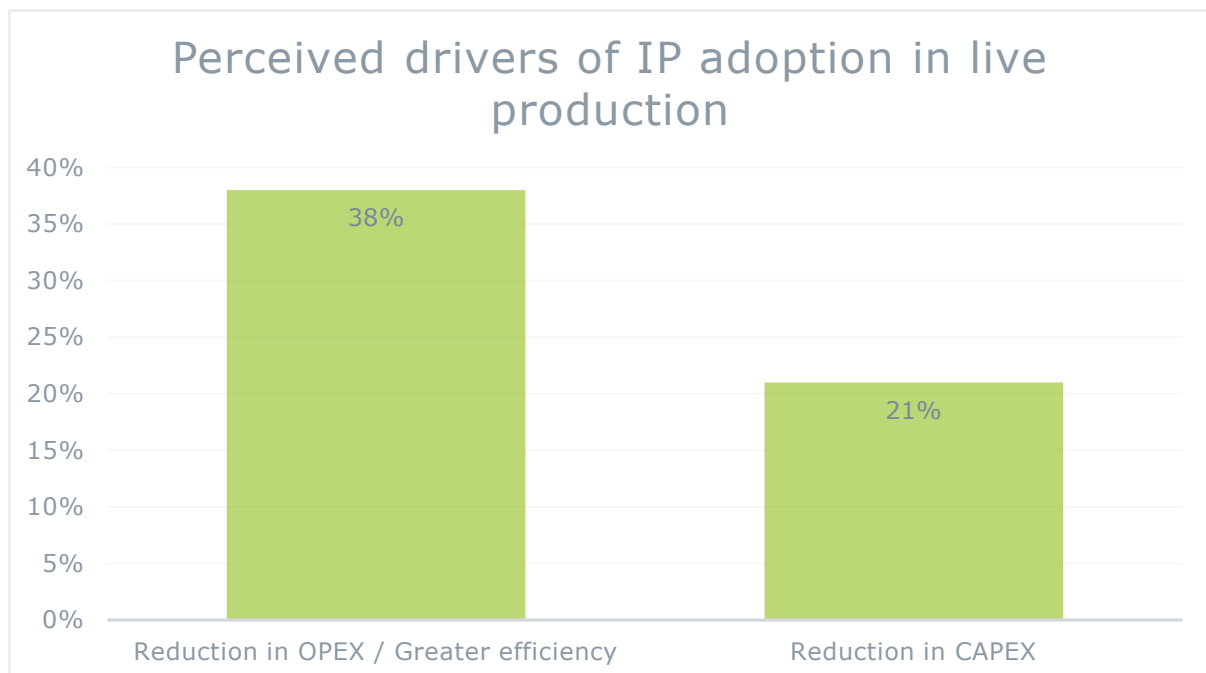
4 What's driving adoption?

The transition to IP in live production is being driven largely by the potential savings in operating expenditure and to a smaller degree, in capital expenditure.

As the broadcast industry moves towards more OPEX-focused business models, any methods that can help organisations reduce OPEX and increase efficiencies will to be looked at

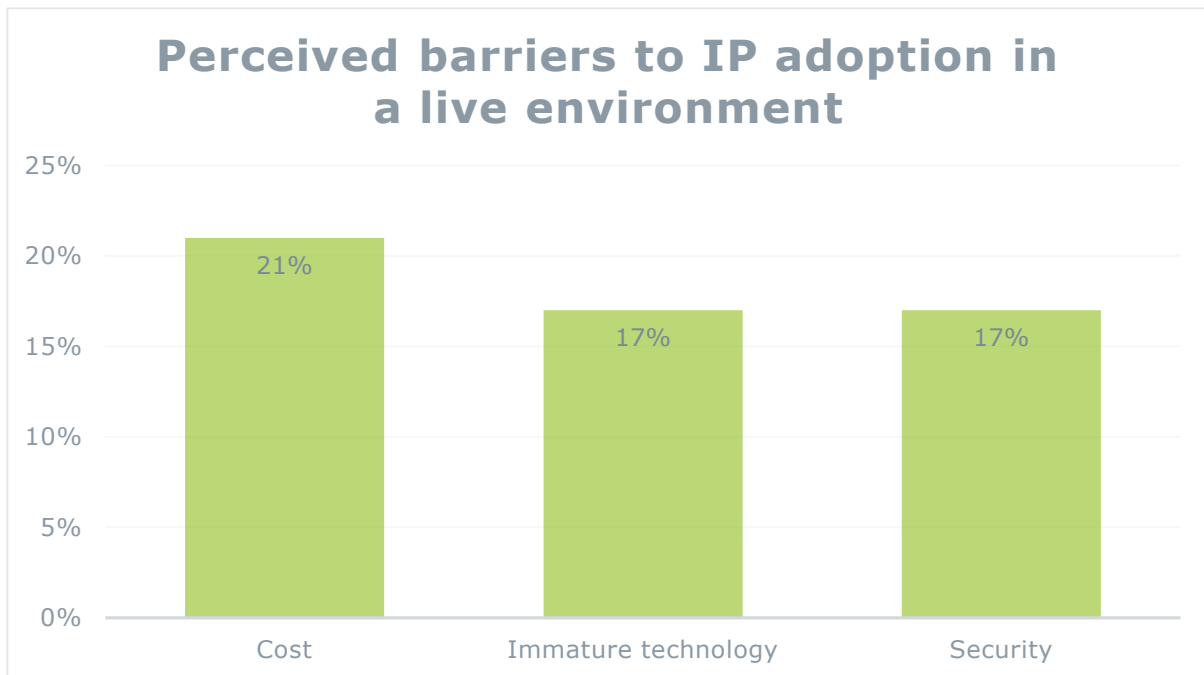
This is especially important considering the industry continues to experience budget cuts and a prevailing attitude of doing more with less.

The Futuresource research found that the reduction in OPEX and CAPEX were the top two drivers of IP adoption.



5 What barriers are broadcasters facing?

As with any new technology there are always barriers to adoption. The use of IP in live production is no different with the chief barriers seen as cost, the immaturity of products currently on the market, and security. None of these barriers are surprising — again they reflect concerns that surface with any new trend or technology is announced, like cloud computing, for example. Security, however, is particularly noteworthy given the high profile data breaches and cyberattacks that have been carried out over the last year. While the concern will be addressed and will fade over time, any early breach could scare adopters away in the short term and hinder the transition. It is therefore crucial that vendors be proactive in this regard in terms of building in safeguards into solutions and educating the market. It is here, perhaps, that the development of standards will play an important role in helping the industry work through any obstacles.



6 Why skills are still important

Interestingly, the lack of skills was not considered a barrier to the adoption of IP. 66% of respondents in the study said they believed that they have, or partially have the operational and technical knowledge to cope with the transition to IP — 31% said yes they have the skills in place, while 35% said they partially have the skills.

Broadcasters in the USA were more confident than European counterparts indicating with 50% believing they were ready for the transition, in terms of in-house skills. However, for European broadcasters, this figure fell to 14%.

For areas where there are skills gaps, broadcasters in both regions are using training of existing personal and recruitment of new staff to bridge it. Overall, 52% of respondents are hiring new staff, while 81% are training their existing personnel.

Again there are regional differences — 69% of US broadcasters are looking for new hires and 77% are training existing staff, while only 36% of European respondents are hiring with 86% opting for training.

7 Conclusion

Based on the research, it is clear that overall, although the migration of live workflows is still in its early stages it is seen as the logical next step by broadcasters who are already taking steps to ensure they're not left behind. Speeds of adoption will vary from country to country and from broadcaster to broadcaster, but within ten years it is believed that live SDI production will be in the minority.

Adoption in the mid-term is down to the broadcasters themselves. As with all transitions, momentum will gather as more broadcasters adopt the technology and lessons are learned that are passed on to the rest of the industry, either through third party integrators or by staff moving between companies. A domino effect will also be observed whereby the competitive advantage gained by one broadcaster will force the next to upgrade followed by the rest of the competitors in turn. This effect was witnessed with the HD transition and is expected to manifest itself when it comes to IP.

When it comes to the last companies to adopt, again, it will be the vendors who will be the primary influencing factor. There will be many companies that opt not to upgrade their live workflows to IP, but there will come a tipping point where it is no longer viable for vendors to continue to provide SDI equipment. This will force the last end users into making the transition, but this is expected to happen for at least ten years.

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