

Easing the transition to an IP-based broadcast industry

By Simen K. Frostad, Chairman, Bridge Technologies

Fifteen or so years ago, some Norwegian guys looked around them at what was happening in the world of networks. Everywhere we looked, IP was achieving remarkable – almost unbelievable – things. There seemed to be no challenge it couldn't rise to. It was fast, flexible, scalable – and, because it worked on commercial hardware, it was incredibly cost-effective.

And then we looked at the broadcast world – and things couldn't have been more different. It was based on proprietary architectures that meant it was hard to break free from your incumbent manufacturer – which tended to make things very expensive. In that world, 'interoperability' was just a word – not a reality.

We could clearly see the direction in which broadcast was heading. Just like Andy Warhol once said that everyone would be world famous for 15 minutes, we could see a future in which everybody could be a broadcaster.

The future is IP

It seemed clear to us that the future of broadcasting would involve IP technology – so we founded tag vsnologies, with a vision that we could help enable that to happen. We could see that one of the biggest challenges in broadcast transitioning to IP would be to ensure that content would still be delivered at the very highest quality – and that meant understanding what was going on in the network, so that problems could quickly and easily be identified and addressed.

Over the course of a decade and a half, we've worked to deliver the tools that would enable network managers – and others – to deliver outstanding viewer satisfaction in an IP world. And: because we know that there are still many out there who are still getting up to speed with IP technology, we've designed them to be as easy to use as possible. Our mantra has long been: "we make the complex simple".

Unlike the telecommunications age of yesteryear, we believe Quality of Experience (QoE) is as essential as Quality of Service (QoS). To us, all that QoS meant was answering the question "Is the network doing what we think it should be doing?" But supposing we thought the network was

indeed doing what it should be doing – yet there are viewers out there who are only seeing a monochrome image? That's why Quality of Experience (QoE) became the new way of assessing how well we were doing – because it put the viewer at the heart of what we were measuring. In an increasingly competitive content distribution world, that became a business imperative.

Performance is key

The tools we've developed that enable a network manager to identify when he's delivering a degraded viewer experience are IP probes. The VB440 is a current example. The performance of our probes is, of course, a key consideration if they are to deliver monitoring and analytics of thousands of streams and a multitude of technologies in real-time and in parallel, all handled over an HTML5/browser interface. The VB440, for example, supports interface speeds including 10, 25, 40, 50 and up to 100 Gigabit on dual interfaces, so that even the largest of media networks can be accommodated with analysis of SD, HD i and p, HD HDR, 4K and 4K HDR and above. We're currently testing it at 8K resolutions – and the results so far are impressive.

However: perhaps more important than the performance of the probes is how we translate the data that the probe captures from the network – by analysing IP packet behaviours – into information that is instantly actionable. Available with the VB440 is Instrument View, which is designed to bring new levels of understanding, quality and productivity to the uncompressed media production process by providing a visual representation of what's going on in the network.

Visualisation

To us, this visualisation is vital. Another example is our Remote Data Wall, which can be thought of as a graphical user interface to the network. It can be viewed locally – in a control room, for example – or remotely from a distant location. Because it is HTML5/browser-based, Remote Data Wall does not require specialist hardware or cabling – another example of how we try to ensure that our solutions are easy to use for non-experts.



It provides significant flexibility to users, enabling them to select precisely which data should be displayed, and how. Data can also be gathered from outside sources - from third-party systems, for example, and external information sources such as weather stations, personnel management systems, and booking schedules. In this way, Remote Data Wall becomes a kind of 'one stop shop' that allows network managers to have all the facts they need gathered together in one place.

It's tools like the VB440, Instrument View and Remote Data Wall that are helping the industry transition to IP. Ours is, however, only a small contribution in comparison with the work that's been done to create the standards that will ensure that IP in the broadcast world fulfils its potential, notably by SMPTE and by the Video Services Forum. It's through the efforts of organisations like these that we and others started to fully recognise the vital role that standardisation plays - and that has enabled us and other companies to develop products that are standards-compliant and thus fully guaranteed to deliver the complete interoperability the industry needs.

Compliance testing

Then, there are initiatives like that of JT-NM - the Joint Taskforce on Networked Media, an independent body created to help manage the transition to IP. The JT-NM Tested program offers prospective purchasers of IP-based equipment greater, more documented insight into how vendor equipment conforms to the SMPTE ST 2110 and SMPTE ST 2059 standards, providing them with a reference as they begin their equipment evaluation and qualification process. Our VB440 IP probe is part of JT-NM's test plan - which confirms its compliance with the industry standards that are key to the success of IP in broadcast.

That the industry is making that transition is unquestionable. Are we there yet? Not quite. But: it's a very long time since we've heard anyone question its inevitability.

The broadcast industry has been around a very long time - so any kind of change, especially one this radical, isn't going to happen overnight. But: even those who perhaps stand to lose the most - manufacturers of the proprietary systems on which the industry has relied for so long - are increasingly embracing the new reality.

Those with an interest in the IP-ification of the broadcast industry will, once again, be visiting the IP Showcase at IBC - more than 50 companies working together to demonstrate the real-world practicality of IP. We've supported it for the last several years, and we'll participate again this year. We'll also have a bigger and more prominent stand at the show itself - and, as always, the next 12 months will see us return to NAB, Broadcast Asia, Angacom and anywhere people gather together to find out about IP is transforming what's possible in broadcast.

For more information visit: bridgetech.tv

Bridge Technologies

Since its inception 15+ years ago, Bridge Technologies has been a fervent proponent of IP technology and the benefits it brings to those who create, produce and distribute content.

The company creates 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. Headquartered in Oslo, Norway, Bridge Technologies has worldwide sales and marketing operations through a global business partner network.