

Interview

with Simen Frostad, Bridge Technologies

By Melissa Cogavin, Managing Editor, SCTE

The SCTE® values the relationship it has with its Corporate Members; relationships that in some cases go back decades. It's been a long couple of years being unable to visit our members face to face and see their facilities in person, so it was a delight to visit Simen Frostad and his team at Bridge Technologies at their offices in Oslo in January.

Bridge Technologies are quite a special organisation. Tucked into a hillside in the north of Oslo, Norway, over three floors the company houses software and hardware engineers, operations, sales and marketing divisions in an old electricity generator, next to a deafening torrent of water pouring down from the mountains. Looking out from the boardroom you could be mistaken for being at sea, such is the proximity and the noise.

Bridge are best known for their advances in monitoring and analysis systems in the field of quality assurance and content delivery over IP, but their reach extends into production, broadcast, cable, satellite, terrestrial, OTT and telecoms applications. Their partnerships with key industry stakeholders extend back decades, their patented hardware widespread in the market, and with their unique approach to developing and marketing new products and services, Bridge are justifiably proud of their reputation, heritage and achievements. Broadband Journal were delighted to spend a few days getting to know them better.

We met the whole team while there and Simen, Tim and Damien made sure we were personally introduced to everyone. They are colleagues but obviously good friends too, and Simen has gone to significant lengths to ensure everyone has a close working relationship. Their achingly cool set up in Oslo reflects

this, with a kitchen and a long refectory table in the spotlight basement, next to the recording studio and green room and bar which they use for their YouTube broadcasts.

These are presented by their tongue-in-cheek fictional character Henrik Fjord, ambassador for Bridge Technologies and Norway more widely, played ably by Head of Marketing Tim Langridge, always in national dress, and were something that they relied on a lot during lockdown and still produce regularly now.

At 12pm every day all 26 employees put down their tools and meet for a delicious, healthy and home-cooked meal





produced by Denise, Bridge's in-house chef. We ate Denise's food twice while we were there and we were asking for recipes by the time we left. Each employee parts with some of their monthly salary to pay for the food and it seemed a uniquely Scandinavian, egalitarian way to enjoy each other's company and break up the day. They are fiercely protective of their lunchtime ritual and clearly proud of it. Simen's reluctance to grow the company much larger than this illustrates how much he values the close working bond they all have together. "Any larger than this and you lose something I think," he told me.

Over the next few issues we'll get to know Simen's business and we begin with hearing about that lightbulb moment, and how Bridge Technologies got started.

What was the genesis of Bridge Technologies? How did it all begin?

I was working in the media industry here in Norway, directing, producing and production for television, commercials and music videos. That sparked my interest in network technologies, because back in the day if you made a master of a TV programme or a commercial, you copied that onto digital Betacam or Betacam SP cassettes and mailed that through FedEx to the appropriate station, which back then was in London, where the post-production houses were.

I remember that process; it was laborious and time-consuming, not to mention expensive.

It certainly was. From London you'd then transmit to Scandinavia, because channels with commercials weren't allowed back then here in Norway. We famously had one TV station called NRK and that's it. And it loosened up and we got TV 2 eventually with commercials but that took a while.

This sounds like another 'necessity is the mother of invention' moment.

That's right. Why don't we use a network to transfer these things, I thought, because that could work out quite a well. This was about '96, '97, working with ATM as a platform. After a year or something with experimentation, we decided that ATM was never going to make it. It's just too complex, it's a crazy expensive inter-vendor, functionality was zero. Speeds were 155 megabit. It was a lot back in the day. We got in touch with Cisco about some new technology they were working on called MPLS, which means you actually embed IP; MPLS is an IP technology.

Great that you had a partner at this early stage.

It did help, yes. Cisco had largely been involved in enterprise type stuff, not really telecoms, but they recognised an opportunity as we did. In '99 we established an IP based media network in Scandinavia. We handled horse racing venues with then this IP technology as the core with the 12000 routers and the 7200 routers and a lot of stuff that barely made it, because this was pretty early and we were transmitting 50mb, MPEG-2 based, 422 based video. It was super high quality, super low latency.

I guess that was low for the time anyway - as low as you can get with MPEG-2?

Correct. But again, this was to replace satellite, because satellite has a huge drawback for contribution, because you need to have a satellite uplink somewhere. There's a huge logistics operation by transferring these vans all over Scandinavia. Transmission cost for 50mb was very, very high.

So this became quite a success, because you also then could transmit a lot of other data on that data link as well. In horse racing especially they have a lot of gambling attached to it, so racing, gambling is obviously a key element so real-time data was essential. We built all the logistics. The network is still operating today.

In 99, 2000 I was looking for converters to basically take SDI signals, standard definition, over to IP. Tandberg Television were in Norway; they had something called a transport stream converter, which could convert from basically a transport stream to ATM X.25, but not IP. So I talked to them and I said, "But guys, IP's up and coming, it is really going to be dramatic, et cetera." They didn't believe that. They felt IP was unreliable at the time.

Bandwidth was an issue then of course.

Again it was expensive. They weren't on board at all. "No, it's not going to make it. I don't think so," they said. But there was one engineer that took me aside afterwards and told me, "I think I actually can make this happen." That was Rolfe and he took one of the management cards - everything has an IP interface - and they took that card.

They wrote some code in a couple of days and said what about testing this? I tested it and everything was hunky-dory. So I placed a big order for MPEG-2 encoders and decoders

and transport stream and calculators. We called it project X, because at this point the management of Tandberg were on a need-to-know basis. That was how I connected with the people that ended up creating Bridge Technologies, because three of our co-founders are people from Tandberg Television.

So Bridge started life because you weren't prepared to take no for an answer. That's fascinating.

We learned so much because we were sending video one way. And that means that on the receiver side the switch was just delivering to a decoder; Cisco switches were actually made for that purpose.

However, every two or three minutes, it actually flooded all ports; eventually we realised the solution was not two-way traffic, because the decoder was just listening for traffic. We wrote some code again; about every 10 seconds it sends one packet back from the decoder to the switch.

Quite a breakthrough.

Well yes, and a few years later, with a lot of IP knowledge by now, we understood that IP was going to be very, important, *the* central thing. As we went on we discovered a lot of other technologies that we now use in Bridge Technologies.

IP delivery is the most important transformation of the media industry ever, because it supersedes the pure transport medium there was before and it has the potential of dissolving time and distance in a completely different way, one that other technologies can't do.

One has to feel sorry for logistics and tape firms but that's progress, I guess.

Absolutely. You can build anything if you have them interfacing IP technology, some form of buffering or storage and some form of processing. With those three building blocks, you can do anything and you don't need it to be at the same place, because you can utilise this as a backbone.

That means that you can create systems, which totally supersedes the kind of narrow definition that broadcast technology was used to. But it has taken nearly 20 years for IP to get to where we are today, where people actually understand its potential. Even now, in 2023, it's regarded as a transport kind of technology.



And were there other companies around that same time doing what you were doing, experimenting?

Very few, in London but it took them three, four years after that to transform into IP. So they were way behind in some areas.

So - we were hearing about your light bulb moment.

Over time we really got the hang of this and saw there was a total lack of equipment within the IP sphere, which could then be utilised for distribution. From there we spotted a gap in the market, and an opportunity.

Did you set out with a business plan?

When we started Bridge, we had a business plan that basically was two letters, IP, that was our whole idea. We just said, "Well, we're going to need a whole lot of diverse equipment." So we dabbled with decoders basically. Very nifty decoders too.

It was crazy expensive to build this as we do today, but again, it made sense to experiment at the time, and in a couple of years the business model was pretty, both stable and profitable. It took a couple of years to get there, because again, it was expensive. So that was taking care of the business plan element of this.

Who were your clients at this point?

The clients were companies requiring live delivery - operating the horse racing, betting, the sports venues and the TV companies. Norway originally, and now Sweden and Denmark as well.



Has Bridge Technology patented any of its technology or kit?

The first patent we made was in 2005 when we made what was called the media window, where we do the correlation between a packet latency jitter and packet drops. That we

patented, because there was nothing else there. We patented a couple of other things as well, but then we stopped patenting.

You stopped? Why was that?

The problem with patents is that you give away a lot of your workings with actually having a patent. So most of our technology now are internal secrets and we don't want to patent it, because that will reveal a lot of how it's actually structured and done. So we find more value in not patenting.

That concludes Part 1 of our interview with Simen Frostad; in the next issue we discover more about how the company developed its unique hardware and how the industry came to adapt to IP delivery.

End of Part I



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