Interview (Part 2)

with Simen Frostad, Bridge Technologies

By Melissa Cogavin, Managing Editor, SCTE

In our last instalment we covered the origins of Bridge Technologies, from the original lightbulb moment, some clever manoeuvering with likeminded friends at Tandberg Television to collaboration with Cisco, who saw an opportunity in data transfer over IP networks, just like Simen Frostad. We were just learning that patents don't actually protect the technology once expensively and laboriously patented – in fact they do the reverse a lot of the time. Simen tells us more.

Simen K. Frostad, Chairman, Bridge Technologies

Simen Frostad: If you really want to copy someone's idea, you would need to get up very early in the morning if you're going to actually do something similar; people will get into our hardware eventually. But it is very complex technology and one of the key things I love about it is that our products are mostly software. We build our own hardware, obviously, but it's the software that's so precious. So no, we don't patent our kit.

Would you describe Bridge Technologies as a software or hardware producer?

We do have embedded systems, we do have RF interfaces for terrestrial satellites, cables, stuff like that, which obviously is hardware. But on the appliance side, the 440, the big 330, it's pure software and that is kind of interesting. We don't have GPUs, we don't have PGA accelerators, we don't have anything that we need to have there.

And that is one of these fantastic essences, because we see that going forward, you will have private and public data centres where you don't have bespoke hardware. So you have to be able to run on whatever in the future.

Why provide the hardware when you are evidently so proud of the software?

We sell the 440 in our own hardware so that we have full control over absolutely every component. That is necessary to get the accuracy for some of the packet measurements. Because we are accurate down to less than 100 nanoseconds, which is crazy accurate. I mean, it's not microseconds, it's actually nanoseconds.

That's your USP right there, though would you say it is really necessary for nanoseconds at this stage?

We don't need that for HD or 4K video today and we don't actually need it for 8K either. But down the road there will be even bigger formats.

Again, you're just ahead of the curve there. Future proofing is so important.

It is very important and with JPEG XS, we can actually receive 8K stuff on the 440 today. So when you buy it, you have everything from standard definition all the way up to 8K in one box, no license, no nothing, everything's built in. Go have fun. That is the philosophy here at Bridge. It should be very, very simple, it shouldn't involve yearly maintenance stuff; that is very expensive. You buy it, you own it, you operate it, that's as simple as it can get.

What else do you see down the line?

The world is going to need more flexibility, because there are people that want to have operational purchases and not so much CapEx, and we have the capability of doing so. We can rent out the 440 on an hourly basis if we want to. But the interesting thing with software is that it's so modular and open, we can run on anything. And one thing that is a 100% certainty, every two years servers get more reasonable with better specifications. So we don't need to do much to actually increase the capabilities of the system, because the system presents itself at least every two years with a lot of opportunity to do more.

How do you see all this developing?

We want more users, faster interface speeds, more streams in real-time. We are the only ones that can have up to 2,000 streams in one measurement device. Every single probe that we have is capable of going up to 2,000 streams, even the 440, of course you can't have 2,000 in 4K streams, because the bandwidth is still too old to hold 200 gigabits. So there is a limit there. Right now nobody else is doing that because it's just too expensive.

What's your competition like in this market?

One vendor doesn't create a market; you need somebody else out there. Competition is healthy. You could argue that Tektronix, with their prism scope and stuff like that is a competitor. We incorporated a very advanced HDR based scoping functions with a very detailed waveform scope, vector scope, diamond scope, CS scope. So obviously we are paddling in their waters, if you like, but that's just one of the functions we have. But we have a lot more functions. For instance, with the scope, you can look at one TV signal at the same time, one on IP. Well, we can look at 2,000, whatever.

We have 19 years of IP understanding, that basically is fueling a lot of our development. We know IP very well and that is a huge advantage compared to others which are now starting to understand what IP is and I don't think they really understand what IP is yet.

Really? Even now?

Surprisingly few. It's kind of weird, but then again, I believed in IP 25 years ago, I thought, oh, next year it's going to explode. It took 25 years, it's just crazy. I mean, what the hell happened?

Why do you think it was such a slow development?

In general because the telecommunications companies didn't want it, because it was a threat to their kind of dominance. Obviously they owned all the satellites in the main. They didn't want to give away that bandwidth.

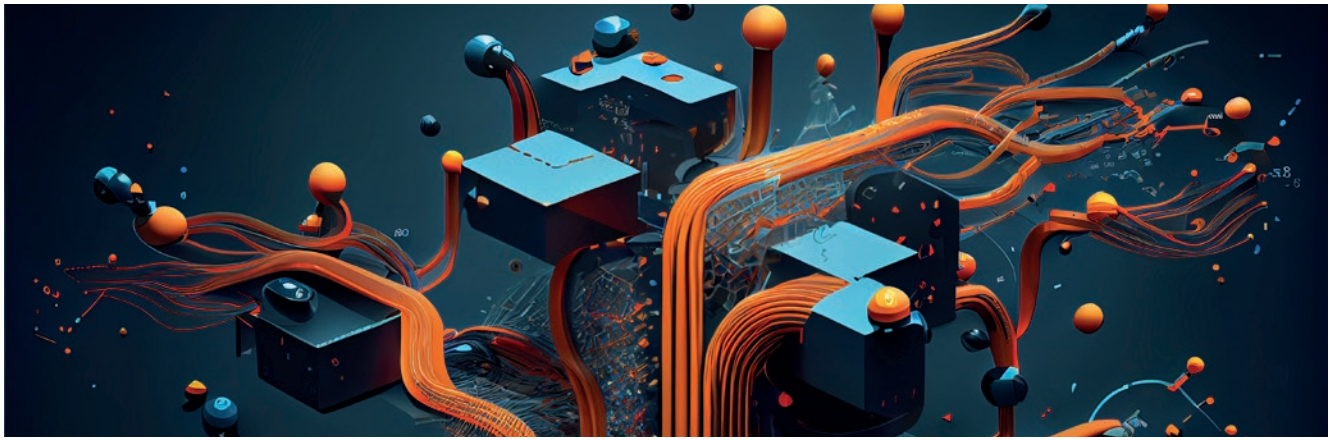
You can understand such protectionism. They had invested heavily in satellite over a long period of time.

But then again, they got overrun by privates that just did it themselves, bought or laid black fibre and then just kitted with the IP only. So it was unavoidable, but a combination of factors meant the brakes were on and that didn't do anyone any good.

They were interested in protecting tape machines at first, which they wanted to keep them, hard drives and storage stuff, et cetera, that they wanted to have locally and stuff like that. They just didn't see the enormous opportunities there to revolutionise their own business.

Change is threatening – and back then it really was threatening – technology was moving a lot more slowly than it is now. I remember the gradual shift to digital in the film industry and all that suggested was job losses to a lot of people.

Exactly right. Protecting what they had was more important than innovating.



A lot of companies back then were also tied into contracts for years, even as the technology was evolving. They didn't have the ability to walk away from suppliers, even though the technology was outdated.

I remember. Many bigger companies were stuck in that situation and it was huge, having installations that basically were fibre channel based but they didn't have the flexibility to adapt.

Such huge sums of money were tied up in existing technology so they couldn't just part with it because the technology's moved on; they were still paying it off.

It got to a point where the studios passed the tipping point and suddenly it was boom, everybody did it. Pixar realised, wow, we can network with 10Gb, 40G, a 100Gb technology in all our workstations.

So the tipping point was about storage capability.

Exactly. We actually did a project on shared storage as well, because there was a daily soap here in Norway, called Hotel Caesar. The producers were in a pinch time-wise, because they recorded everything to cassettes as that was the norm. So I said, "Why don't you record onto hard drives and go from there?" Because it was three cameras and a programme feed. So we purchased four Avid systems and basically networked those to shared storage. And then believe it or not, we took four Apple keyboards and soldered them together so that we can control the four Avids in one keyboard.

Proper innovative. Messrs Jobs and Wozniak would be proud.

We had to – there was no other technology available. And then we found a weird company in Switzerland which actually created a 4229 pin conversion kit, so that we can get time code into those. So we had the same time code on all four Avids and then we had a big start/stop button, basically for the script to manage start and then stop, name the scene on all four, and then next recording.

That sounds extremely laborious. Tell me there was an upside.

We cut their post-production time from slightly over 18 hours per episode to about less than four hours per episode.

14 hours! Incredible. It's a pure saving.

Huge. Now of course everybody does it like this, but this was back in '94, '96. It was very early days and we actually heard Avid say this was the first multi-camera recording system on the planet. Which it's obvious, because if you network things, stuff becomes very simple and easy; it's weird that nobody actually got that, but they got it. So we built four studios actually for that purpose.

We will come back to Simen in our third instalment in September, in time for IBC.