Combining two disparate disciplines, Media and Engineering, Thomnet bridges that gap to provide creative solutions to interesting applications. InAVate talks about high definition and innovative technologies with owner Thomas Hülsmann.

HD and beyond

Thomas Hülsmann of Thomnet Engineering

What are your main activities?

Thomnet Media Engineering was started almost six years ago. Basically we are an engineering company for the media and IT markets. I started out in broadcast but I wanted to use my knowledge in a wider space of technology.

I found out that if you go into media technology you have more space to play. It depends a little on the customer, very often they have strange or sophisticated ideas and you have to come up with a very dedicated and special solution.

In the broadcast field you often have a lot of technicians and engineers sitting in front of you, and they know exactly what they want because they are experts in their fields. It's a different customer relationship in media engineering. In media, the customer expects a lot of creativity and different ideas. It's very important to have a wide knowledge of all the different fields, like displays or mobile media or audio.

What is your experience of HD at the moment?

From our point of view you have to make a distinction between HD on a beamer (projector) and HD on a Plasma or LCD screen. If you look at the screen technologies you still get some artefacts and so forth. Companies, like Toshiba or Fujitsu, which produce chips for the HD market, for example have developed dedicated TV processors based on 120 Hz technology, to improve picture quality and to eliminate those artefacts.

However on the other hand if you use a projector in conjunction with a scaler, HD gives you the possibility to use one beamer and display lots of different content and sources. You get the freedom to effectively produce multiple displays from a single video device. This is why HD in projection is particularly exciting. There are more and more HD projection products available, and the brightness possible is increasing massively.

Another aspect you have to bear in mind from an engineering standpoint is that the infrastructure is different if you want to go HD. You can't go the old fashioned copper way if you want HD content and distribution, very often you have to go onto fibre optics technologies.

Apart from the technical benefits are there any other drivers for HD adoption?

Well, interestingly the ROHS specification is having a direct effect. It's a change in the European market. Companies are required to change and re-engineer a whole lot of products, and it's almost as though they have decided just to let standard definition go, and to develop the HD products. I had real difficulty in a recent project sourceing SD video cameras for a specification. If you take a look at how quickly Sony has switched from standard definition to HD it was really interesting to see how fast that went.

The other thing is that the price of HD technology is coming down. It's now available in the mass market, and this will drive the cost of the chips and processors down as the electronics manufacturing ramps up.

How many of your projects currently involve HD technology?

It's still only a small portion. We've done one recently where we've used this HD projector and scaler combination for a demonstration for a customer. It was a display 6.9m wide and 5m high. The first idea was to use a pair of SD beamers on a moving mount, but that was very complicated and also not particularly satisfactory to the architect.

In media engineering you meet a lot of architects. They like lighting in the ceilings, but they don't like projectors being mounted in the ceiling. If you have two projectors and a mount then that's a lot of space. If you can produce the same thing with a single beamer then you make a friend!

The adoption of HD technology follows the so-called "laying fat guy". If you imagine a fat man lying on the ground, you have a small lump where his head is and a large one where his stomach is - two semi-circles. This is the shape of the adoption curve. The small lump

represents the hype phase and the large one is the production phase. With HD I think the hype phase is almost over. We are heading towards the production phase, with the mass-market applications. Things like HD digital signage and other applications based on native HD technology will definitely come.

Talk to me a little about 4K

Well it's what Sony are calling their group of products beyond HD. It's 4096 by 2160 pixels of resolution. The advantage is that you can place 4x HD onto one screen. It's particularly interesting for digital cinema applications. I spoke to some people in Berlin who run a large cinema complex. They don't only use their cinemas for movies, but also for gaming. They invite young people into the cinemas and they compete on four enormous split screens!

What other innovative technologies are you interested in?

I really think that IPTV and mobile-TV are really important applications. They are changing the way that we have to think about storing and generating content as well as viewing it. Also DSP products are developing in some extremely interesting ways. The amount of power you can fit on a chip on an integrated circuit board continues to be incredible.

The last thing is the use of video servers in general. The cost of storage is really low now, which is good for all this HD content. You can buy a terabyte hard drive for less than €500 now. Also the use of solid state memory chips instead of mechanical drives is interesting. The life-time and the access speed are much better. The big application for this is the digital cinema market place, but also there is a trend towards more central storage of media content. Museums and other places are now putting everything on one big server instead of distributing it around a site.

What is your opinion of the German market?

Well when I speak to my friends and partners, my network, from an engineering standpoint they are all sold out. It's a big difference from when we started out in 1997 doing media engineering, at that time it was really slow. The big rush began some years ago, and it's still going on. The demand is very strong for media technology from all kinds of companies. I could do more work, but at the moment I'm booked up!

I believe that the market will shift fully to native HD. "HD-ready" was a good marketing gimmick but now we're really getting nice solutions from true HD. Digital signage is going to be a driver for this.

The infrastructure behind this is also requiring engineers to develop their IT knowledge. You need software for signage, you need to be able to use TCP/IP for switching and routing of the content. It's a whole new set of skills we need to move forward.

Thomas's recent projects include the HWK Koblenz building, (see InAVate May 07).

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