Performance Media Industries, Ltd.

Convergence
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by A. Grimani

It's been coming for the past ten years. It all started in the mid 1990's with a few "convergence" products that combined multimedia capabilities with traditional A/V features. The first milestone product from the PC industry was probably the Gateway Destinations PC back in 1996. Remember it? It was a Pentium 166 MHz with a 2 Gig drive, a TV tuner card, a wireless mouse and keyboard, a 36" CRT monitor, and some application-specific software. It came with an optional Harman/Kardon ProLogic receiver and five small speakers plus a subwoofer. The A/V industry offered up Frox as its first-born child to the brave new world. The product was as a tour-de-force A/V controller that included switching, THX-certified surround sound decoding, video scaling, and a really cool all-encompassing on-screen graphical user interface with a motion sensitive wireless mouse-like control. Both of these products were real pioneers in their fields, and like many pioneers they ended up with arrows in their backs. But they also paved the way for new trends that are undeniably important.

Ever since that time I've been observing the evolution of this convergence thing, whereby the lines between a computing device and an entertainment device are supposed to erode down to nothing. I have, like many of you, been wondering when exactly this would happen. When will mid-to-high-end home theaters run on these computing devices and *only* these computing devices? Will we ever get to a point where tangible media, such as DVD discs, go away completely to be replaced by program material downloaded from online sources? Will product front panels ever be as blank as the typical computer CPU is today? Will system controls ever be accessed through GUI (graphical user interface) with no actual buttons to push? Finally, will all the audio and video signals be channeled in direct digital stream form instead of analog wires, connectors, and switches?

This year I decided to take a much closer look at this convergent world. First off, I wanted to see if everything we can do in the traditional world of analog sourcing and distribution could also be done in the new world of networked everything. This includes the functions of finding the program material, selecting the source device, displaying the device selections and status, setting the sound volume and basic video

parameters, feeding signals from any source device to any display device (for sound and picture content), and remotely controlling any device from any location.

Then I wanted to see what more I could get from using networked controls and signal feeds. Is there any better signal control, throughput, operation ease, or flexibility in the networking world?

Armed with all these questions, a healthy dose of curiosity, and (as it turned out) a large amount of patience and time, I set out to discover the sate-of-the-art in networked media systems. I purchased a number of "convergence" devices, including media centers, media players, wireless routers, touchscreen PCs, etc. I loaded servers with media and bought music online. (Being a musician myself, I respect the value of other people's musical efforts, so I spent money where appropriate…) I asked many, many dumb questions of our ever-patient IT guy. I walked the halls of the 2005 CES asking more dumb questions and picked up thirty pounds of literature from the press room and from booths that were showing any type of convergence product. Now I think I'm beginning to get some answers…

First of all, what I see is more confrontation – a game of chicken – than convergence. Convergence is polite, consensual, and planned. The outlook here is chaotic and confusing as heck.

The latest boxing match I witnessed in this confrontation was in fact in Las Vegas, and the ring was the halls of the convention center during CES 2005. To my left were the traditional consumer electronics companies. To my right were the traditional PC industry manufacturers – and they weren't about to talk to each other nicely.

The PC-centric companies fought for show-goers' attention with products such as media centers, media players, and storage devices. Most of these offerings were re-dressed computing devices with audio and video sourcing and output facilities. Some were elegantly dressed, granted, but were PCs nevertheless. That means they incorporated complex processors running an operating system and were usually noisy due to disk drives and fans. Also, they can be prone to lockups and operational errors, just like our everyday PCs. Some of the demonstrations I attended even had to be restarted using the obligatory "three-fingered salute" (Control-Alt-Delete). I also found that some of these PCs would be hard to control in a home theater context because they required a keyboard or mouse to navigate through titles. Their user interfaces were clunky, and while adequate for a "lean-forward" PC user crowd, they just weren't imbued with the simplicity demanded by the "lean-back" crowd (a.k.a. couch potatoes). In fact, some of the user interfaces had characters that were too small to resolve on standard TV sets, particularly when viewed at typical video distance (approximately

twelve feet). The players in this field included HP, D-Link, Intel, LinkSys, Dell, and many, many other really deep-pocketed companies. Take a look at the Fall 2004 issue of PC Magazine for a smattering of products, trends, and articles on how the PC may take over the home

A/V-centric companies were fighting their fight by showing ever-larger HDTV displays (even a 102" plasma display!), wireless interconnections to speakers and projectors, and new computing and networking functions in their products. Some of the players here were Pioneer, Onkyo, Yamaha, Kiss Technology, LG, RCA, etc. The typical trend I spotted was the incorporation of Ethernet with IP in TV sets, A/V receivers, and DVD players. The most typical application was to browse and play program material, such as pictures or music files, from a storage server. In some cases IP was only used as a signal transfer scheme, and in others the product with Ethernet could live on a network along with standard computing devices. The user interfaces were usually simple, easy-to-read with absolutely no frills. All in all, however, I can't say that these products reached out too far into the world of system control, automation, or digital networking. In many cases it would be just as easy to have a basic PC with A/V output interfaced into the home theater alongside the traditional source devices.

The most promising cases I saw were companies that came from the world of residential system automation and were using their experience to make control systems that incorporated full-fledged A/V function along with IP-based networking. They seemed to have the most on the ball. Interesting, no? Some obvious players in this field were Russound Intellinet, NetStreams DigiLinx, and Control 4. These companies were staffed by industry veterans, and they were using Ethernet as a cost-effective and universally-accepted control and signal path. Some had ways to pull stored data from a central storage server device AND push data onto the network from peripheral locations. NetStreams was shipping systems for audio-only but indicated that by year's end they would provide some video solutions, too. Control 4 was not yet shipping, but had plans for an extensive collection of A/V controllers, lighting controllers, head-end and output interface boxes, relay controllers, etc., etc. Pretty much anything you could think of doing was in some way offered up at competitive costs.

Will all these new gizmos work as flawlessly as good old analog switching devices under standard automation control? I'm not really sure, but I don't want to be the first one to find out – and that's what I hear everyone else saying, too. I'm certainly not one to shy away from new or challenging technologies or to pooh-pooh those who are working to push the envelope. Right now, though, the best answer I can come up with to all my questions is that the bridge between PC versatility and CE usage comfort is still under construction. Also, performance quality is critically important, and I'm not sure how consistent current PC devices can really be in this arena. A frightening

number of the PC-based demonstration I saw at CES were abysmal, with soft and noisy pictures, improper widescreen aspect ratio, and distorted sound.

Networked A/V and control will be pretty exciting if you stop and think about it, but it's not ready quite yet. I say give it another year, and let's learn all that we can in the meantime.

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