DSE Pulls Out All the Stops for Display Technology Innovation

Display Technology and Business Trends From Digital Signage Expo 2016

At DSE 2016 the video wall was back in a big way. (Shown in this photo: Planar demo'ed video walls with 1.4mm bezels.) And this is not your father's video wall. The small and now ultra-thin bezel video wall is here, now. New generation LCD panels, improved and much less expensive video processing and content management software, improved durability of LCD panels (including outdoor-rated panels) and better energy efficiency now put myriad video wall hardware and software options in the reach of almost all digital signage installations.

BY ALAN C. BRAWN

I t is that time of year again when tradeshows dominate our attention. It begins with the extravaganza known as CES, then the bourgeoning ISE in Europe, and, more recently (and my personal favorite), the Digital Signage Expo. Each year as I write about DSE, I try to encapsulate the event for those that may not have attended, and also compare my impressions with those that did.

There is no better place to start than a conversation I had with Andrea Varrone, the show director for the DSE, as she looked back on the 2016 event. She shared her view that, "Overall, the exhibitors did an excellent job with their booths this year. So many manufacturers are now showcasing total solutions (as opposed to just mounts, switches, or screens). The average DSE attendee is coming from an end-user environment, and seeing what the products can actually do for them in the real world is key. As far as technology, the evolution of screens into thin, translucent, and double-sided displays is quite amazing. And the buzz of the show seemed to be the fact that IoT is the future of digital signage."

Andrea noted two big dynamics at the show: the new attendees and preponderance of end users. I have written numerous times that this is one of the special things about the DSE — the exhibitors get to speak directly to end users and have real conversations about their unique needs. As someone who has been on the manufacturers' side, this is a huge opportunity to learn what the market is really thinking and doing. Many manufacturers understand this, and the trend is for exhibitors to offer total solutions in their booths as opposed to stand-alone products. Many exhibitors include partnerships with other exhibitor technologies to illus-

LG Electronics USA Business Solutions announced digital signage displays based on OLED technology. The paper-thin, dual-sided displays will be available in curved and flat configurations. The Dual-View Curved Tiling OLED display offers a curved design that uses slim tiles to form customizable displays that link two, three or four tiles together. The 65-inch portrait display, boasts a paper-thin and an eye-catching dual-sided view to offer customers a multi-media experience while providing retailers a way to utilize their space efficiently.

showed an 8K flat panel, so stay tuned for that to be the next frontier. Of course we are continuing to see even thinner bezels as manufacturers strive to provide a bezel-free display especially with video walls in mind. The folks at Samsung showed their extreme narrow bezel 1.4mm video wall, so we are getting closer to that Holy Grail.

Another display trend we are seeing is direct view LED for both indoor and outdoor applications. Only a few short years ago it was common to see a pixel pitch of 30mm for viewing at a distance on the Las Vegas strip. Fast forward to the DSE this year and we saw direct view LED displays from companies such as Samsung, NEC, Planar, NanoLumens, and Daktronics, just to name a few, and they all looked amazing. In fact, there were 12 total companies that featured direct view LED at the show! Of special note is that NEC is joining the LED crowd and showed their 1.9mm LED videowall, with Samsung flexing their muscles in the niche by showing their indoor LED (1.5mm & 2.5mm fine pixel pitch) and their Prismview indoor/outdoor LED (4-24mm pixel pitch). Obviously there are significant price differences between a direct view LED video wall and one done with LCD flat panels, but some of my colleagues opined to me that with direct view LED looking so good (also seamless, bright, and robust), it is a matter of time when direct view LED might come to dominate this category. Time will tell.

We are also seeing that more and more LCD flat panel companies are introducing high brightness and outdoor models. Samsung showed their outdoor/high bright 3x1 drive-thru enclosure and in-store window displays and NEC showed their 47-, 55-, and 75-inch hi-bright LCD wall. In the world of high brightness LCD though, Dynascan still leads the pack by offering indoor displays at over 5000 nits, rivaling the brightness of direct view LED! As a side note for outdoor applications, companies such as Premier Mounts and their Habitat enclosure (which doesn't need heating or air conditioning), are an example of enclosure solutions growing beyond a niche market for the

trate the fact that digital signage is not simply a display on the wall (or a projector hung from the ceiling), but can include many disparate parts. Andrea also noted that the buzz at the show was the Internet of Things (or IoT) as the future of digital signage. Slightly tongue in cheek, my observation is that we seem to be obsessed with buzzwords and acronyms as we have evolved from the internet to the cloud...and now IoT. All I can say is enjoy and embrace the ever-changing lexicon.

FLAT POWER

Back to the show floor, so to speak. Let's start with LCD displays. The 4K UHD phenomena continues and is now taking hold. We are seeing both flat panels and projectors touting the virtues of 4K and a whole slew of peripherals were brought out as 4K compatible. Obviously there are still content production issues, as well as bandwidth and storage to contend with, but 4K is here to stay. As a side note, for the pixel deprived out there, Sharp

growing QSR drive thru industry. Also, Fingermark out of New Zealand had a really slick "digital cell" with optically bonded screens and touch interactivity that attracted a lot of interest.

With LCD panels and video walls made up of LCD panels, the trend of 4K is as strong as it is with stand-alone, single screen digital signage. And while the very nature of video walls means that you can create 4K with tiled 1080p screens, there are and will be more applications with tiled native UHD or 4K screens — to get to 8K, or 16K or more. But at the DSE show in April, Sharp showed a single LCD display with 8K resolution, shown here.

If all the developments in LCD technology were not enough, we now have the emergence of an entirely new category of display for video walls: direct view LED. Samsung now has 1.1mm LED. SiliconCore has 1.9mm. Planar's 1.6mm is very impressive (and in the Planar booth there was also 1.2mm pitch direct view LED from its parent company Leyard), and AOTOs 1.2mm technology is out there. Also look to LG, Daktronics, Barco, and Leyard, for new developments in super high res direct-view LED. Shown in this photo, direct view LED from Christie, Christie Velvet, at the Peerless-AV booth at DSE — Brian McClimans of Peerless-AV was demo'ing their unique LED mounting solution that lets the LED tiles slide forward for easy access for maintenance.

We will cap off our flat panel trends with the emergence of OLED on the commercial scene. The folks at LG simply had a stellar show, with all types of OLED right out front — from ultra-thin double sided flat panels to a really neat double curved video wall. The colors were vibrant and the contrast was excellent, as OLED normally is. What makes this a trend is that folks at Samsung showed their transparent OLED and Planar joined the party as well. All the glitz and glamour aside, I do feel we are beginning to see OLED as a viable (but so far limited) alternative. There are issues such as price and longevity that still need to be overcome if it is to be a mainstream option to LCD.

TOUCHY SUBJECT

It comes as no surprise that interactivity and touchscreens seemed to be everywhere. With smartphones and touch interfaces being part of our daily lives, it only makes sense that this would come to the forefront of digital signage. There are a huge numbers of companies that are integrating interactivity into digital signage (focusing mainly on retail), including Hughes, ComQi, Intel, Four Winds Interactive, ELO, and 3M. A standout product was the 3M Multi-Touch PCAP Systems and Displays that feature their proprietary ultrafine metal mesh design, overcoming design and optical challenges found in other solutions. It allows for multi-user, multi-touch points without sacrificing speed or accuracy. By the way, the sensor is both 2K and 4K compatible.

To wrap up displays, we simply can't ignore the role of projection in digital signage. We have all seen pixel mapping on the sides of buildings and the wow effect that this has, but in more practical and affordable terms we are seeing three trends that stick out. The first one is the migration to solid-state illumination.

Zytronic brought their multi-touch technology for smaller screens to DSE. Zytronic uses Projected Capacitive Technology (PCT and MPCT) touch sensors and multi-touch controllers with a faster response time and gesture recognition support for smaller self-service touchscreen applications.

A good example at the show was Canon who showed their LX-MU800Z, a 1920x1200 resolution, 8000-lumen DLP projector with a laser-phosphor light source that delivers 20,000 hours of virtually maintenance-free operation. The second trend is edge blending. NEC had two of their PX803UL projectors edge blended together and showed the impact of the concept perfectly. The third trend in projectors is the wave of short throw optics that are becoming available. We can now get 10-foot diagonal images from 4 feet away. If you add up the three newest developments in projection, they are a viable option for images over 100 inches and for special effects that a flat panel can't produce.

THE SOFTWARE SIDE

Obviously the DSE is not just about displays. On the software side, there was buzz about triggered content, although it seems to be defined differently from place to place, and programmatic interfaces. Unsurprisingly, analytics continues to grow in importance. NEC Engage (powered by the Stratos Media analytics platform) showed content triggered via capturing age/gender of the audience and supplying full analytics of booth attendance, dwell time, and impressions. Industry intel tells me that we will see an increasing number of display companies and CMS providers with built-in analytics on the horizon.

On the CMS front, one longtime DSE attendees on the reseller side told me, "I see more and more equality in the CMS offerings. I can no longer say that there is a huge difference between most of the market. While 20 to 25 CMS companies clearly have the majority of the installations, it by no means suggests they have the only or even the best solution to a DS opportunity." I always tell people that most CMS providers do very similar things, but they do them in very different ways. I find that it is the interaction (and the GUI) in most platforms that make the difference. There is just no way to get around doing a multi-CMS comparison, and, in the end, select what works best for you. The good news is that there is a lot to choose from at all price ranges, including an expanding number of media player and CMS combinations. We are also seeing a trend in full turnkey design/build firms, with their own proprietary CMS offerings.

SMALL BOOTHS, BIG IDEAS

Under the heading of a lighting round, there was some cool stuff in smaller booths that bears further attention. Hall Research had their HDBaseT long reach device with up to 500 feet over Cat5. There was portable digital signage in a cool road case from eTech. InClix has a content creator offering that you must take a look at. Sophatar proximity-aware interactive displays were cool to watch in action. Last but not least, there was the Solus Robots' Advertising Robot. It is a 5-foot android that uses a facial recognition program to ID the age and sex of viewers, then plays the appropriate advertisement on the 32-inch screen and tracks the results. As a side note, I didn't see much of a focus on mobile interaction (NFC, Bluetooth, mobile websites, etc.). I found this surprising.

I could not cover all that went on at the DSE, but every year I try. Each year I promise myself that I will spend a lot more time in the smaller booths, but with a two-day show there is only so much you can cover. That being said, my suggestion is that after you read overviews like this, take your show guide and go to the categories section. Then go to the websites of the exhibitors that myself and others have mentioned, or ones that you could not visit. I promise it will be time well spent.

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