Will LED Displays Kill LCD Video Walls?

Although LED display performance may be getting on par with that of LCD screens, the death of the LCD may be exaggerated.

By Richard Slawsky | Contributing writer, Digital Signage Today
Video walls have long been a way to create a large, eye-catching digital signage display. The idea of full-motion video seamlessly spreading across multiple displays adds a “wow” factor that attracts attention and engages viewers.

For years, those video walls were constructed of multiple LCD displays mounted together, with the size of the wall limited only by space and the budget of the deployer. The main downside of LCD video walls was the bezel of each individual display, which had the potential of interrupting the image and distracting the viewer.

In the past few years, though, fine-pitch LED displays are approaching the resolution offered by video walls, without the bezels that are a feature of traditional digital screens. With LED displays of 1.25 mm pixel pitch or smaller coming on the market at an ever-increasing rate, some industry experts are predicting the demise of LCD screens as a component of large video displays.

Others aren’t so quick to count LCD out. Rather than taking the place of LCD, they say, fine-pitch LED displays are taking their place alongside LCD video wall technology. Each has its own advantages and disadvantages, and each has applications for which it can be the better choice.
The display faceoff

There’s a reason why LCD displays have served as the cornerstone of the digital signage industry. They offer good reliability and wide viewing angles at a price that continues to fall. In addition, LCD displays are now being offered in resolutions as high as 7680x4320, or 8k, and in sizes of 82 inches and larger.

“LCD is in a lot more places already, and will remain that way,” said Graham Cooke, research analyst with Hertfordshire, U.K.-based research firm Futuresource Consulting. “Some end users will always demand the cheapest product- and that is LCD.”

And those displays continue to hold a major share of the market, although that growth appears to be slowing. Shipments of commercial flat panel displays totaled 855,000 units in the second quarter of 2016, according to Futuresource, a 17 percent year-over-year increase. The LCD video wall market shows the highest year-on-year growth rate of the major product categories, although the trend is largely limited to China with sales in other major markets flat as large-screen displays and LED products replace some tiled LCD solutions.

LCD displays have their disadvantages. Color reproduction of LCD displays can vary from screen to screen, and their response time can result in the blurring of images in fast-moving video content. Although screens continue to get larger, there are still limits on sizes and the largest displays are out of the price range of many deployers.
And of course, there’s those pesky bezels. Content creators need to take those bezels into consideration to ensure that text or other critical information displayed on a video wall isn’t obscured.

On the other side of the coin, LED technology continues to progress. Advantages of LED displays include excellent brightness, fast response time, wide viewing angle and a high degree of reliability.

“And the main advantage of LED displays is the fact that there is no bezel, which allows for a completely seamless image,” said Brian Mc Climans, vice president, sales, NA/APAC at Aurora, Illinois-based Peerless-AV, a leading designer, manufacturer and distributor of audiovisual solutions.

Because LED displays can be constructed in irregular shapes, they allow for the creation of unique displays that can be a centerpiece of any venue. That flexibility makes them the perfect fit for environments such as flagship retail stores, corporate lobbies and other high-end settings.

The LED display market is seeing strong growth as the technology improves. A March 2017 Futuresource report indicates the global LED display market wrapped up 2016 with a value of $4.5 billion, up 7 percent from $4.2 billion the previous year.

“Several sectors dominated the LED video display market in 2016, including media/advertising, stadiums/venues and retail,” said Chris McIntyre-Brown, associate director of
professional equipment at Futuresource. “These segments delivered over half the market value in the video display category. Notably, 2016 experienced a further drive into the retail space and a growing trend toward indoor applications. These included corporate, transport, and control room, which grew in value by 62 percent comfortably surpassing $1 billion.”

LED displays have their disadvantages as well, including their high cost compared with LCD displays. In addition, achieving uniformity in color and brightness in a display constructed of a series of LED panels generally requires using panels from the same manufactured lot.

**To each its own**

So, with LCD and LED displays each having advantages and disadvantages, which one is best? The answer, of course, is that “it all depends.”

With their relatively low cost and good image quality when viewed from up close, LCD video walls are likely to continue to be a feature of retail locations. While some may view the bezel as a negative, spreading content across multiple screens still can make the casual viewer wonder “how do they do that?”

At the same time, the inherent brightness of LED displays opens the door for video walls to be deployed in areas not previously possible, such as in storefront windows or other areas where lighting may be a problem.

“LED-based displays are much brighter and more visible than LCD displays, and thus much more visible and desirable across a variety of applications ranging from low light to bright sunlight environments,” said Sunit Saxena, CEO of San Jose, California-based digital signage technology company Altierre.

And while LCD displays had long held an advantage over LED in terms of their interactive capability, that difference is quickly disappearing. LED touch displays are expected to appear on the market in the third quarter of 2017.
At the end of the day, then, while the resolution of LED displays will continue to increase and LCD displays may one day fade from the market, that day isn’t likely to come anytime soon. Each display type will likely find a niche and help drive new ways to deploy digital signage.

“The long and the short of it is, narrow pixel pitch LED is not going to cannibalize LCD or eliminate it,” said Futuresource’s Cooke. “There will be a place for both technologies. The main factor is cost – NPP LED is still too much for many users. We very much see them having their own sector.”

Installation and Serviceability

As with any technology, ease of serviceability will go a long way in determining the degree to which video walls and LED displays are accepted over the long term. If either solution is difficult to install and service, it can be more hassle than it’s worth.

Thanks to the long history of LCD video walls, there are a number of mounting solutions on the market that make installing and servicing an LCD video wall relatively easy. Peerless-AV’s SmartMount® Supreme Video Wall Mount, for example, features lateral micro-adjustments and pop-out serviceability. The Supreme Mount includes simple, tool-less micro adjustments for 1.5 inches of travel on each of the X, Y and Z axes as well as enhanced cable management, with tabs on the scissor arms that control cables, allowing them to travel in and out with the display. For ease of service, the mount is equipped with a single hand pop-out quick-release function on the bottom and top of the mount that allows installers easy access to displays in recessed applications that would otherwise be restricted, reducing the risk of display damage or searching for hidden pull strings.

LED displays are much more difficult to install and service, making it easy to do a bad installation but hard to do a good one. The displays themselves are also very fragile and easy to damage during servicing.

Fortunately, though, there’s a solution for that as well. Peerless-AV recently introduced its SmartMount Universal LED Mounting System in both Full Service and Fixed Flat-to-Wall configurations. With an ultra-lightweight aluminum frame, X, Y and Z adjustment and support for multiple LED display sizes and brands, the system is one of the most versatile, easy to assemble and install indoor LED mounting solutions available on the market.

The system can be built to any flat-to-wall, floor standing, floor-to-wall, floor-to-ceiling and other front service specifications or configurations. For recessed LED video wall applications or those requiring convenient rear access, scissor arms allow the entire wall to pop out safely and effortlessly, giving enough space (extending up to 30” from the wall) for the installer to get behind and manage cabling or tile replacement.

About the sponsor:

Peerless-AV, a Peerless Industries, Inc. company, is a leading designer, manufacturer and distributor of audiovisual solutions. From its award-winning mounts and wireless audio systems to indoor/outdoor kiosks and the industry’s first fully sealed outdoor displays, Peerless-AV has aimed to fulfill both integrators’ needs for ease of installation and service, and end-users’ dreams in residential and commercial applications for the last 75 years.

Based in Aurora, IL, Peerless-AV manufactures over 3,600 products that serve original equipment manufacturers, commercial integrators and consumer retailers in 22 vertical markets through direct sales representatives and authorized distribution. For more information, visit www.peerless-av.com.