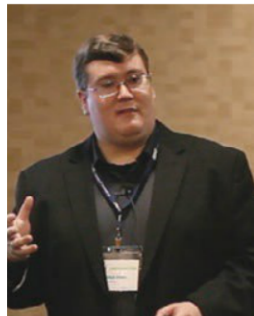# SORTING OUT INNOVATION

The Moving Target of Digital Signage Technology

The basic technology of most digital signage has been around for a while– in fact most of the technology started in the classroom or the boardroom and then was applied to digital signage. But the digital signage market does present its unique technical challenges. And the introduction of a new screen resolution standard every few years complicates things more. I asked one of the top technical experts in digital signage to lend us his insight into what 2015 holds in store for technology innovation. Jonathan Brawn, CTS, ISF, ISF-C, DSCE, DSDE, DSNE, DCME (yes, a lot of cred's), is Principal of Brawn Consulting (http://www.brawnconsulting.com), together with his well-known father Alan Brawn. The Brawn team is perennially on the leading edge of what's new in digital signage. Here are Jonathan's thoughts on trends as we head into 2015.– *David Keene*

DAVID KEENE: In the general AV world, the past few years have seen continued confusion about what will be the new "connectivity" standard. What do digital signage end users or providers need to know about these "connectivity" evolutions?

JONATHAN BRAWN: The main thing I would want to share is to seriously consider the location of the media player. I know, not directly answering the question, but since we brought up signal distribution, I want to address the core concept before I talk technology. The huge buzz around where to put the media player has been driven by companies like Samsung (with their onboard and set back media players) and NEC (with the OPS slots in their displays for add on media players), and it would seem to be most helpful to put the player inside the display. The problem I see with this, is what happens when we need access to reboot the player? Or if the player fails and we need to hot swap it? This could happen at an unfortunate time where the access is limited; for example, QSR menu boards. You can't stop the lunch rush and get out a ladder to fix these things. There are times that remotely locating the player makes great sense, especially if you are using one player to power many displays. If you are going that route, make sure you use a top notch quality product, there are a lot of "questionable" ones out there that are not fully tested to be compliant with the standard and capable of working with other manufacturers products with no issues. HDbT is a wonderful standard, and can save a ton of labor, in addition to making installations possible where they weren't before, but having the right gear is not something we can scrimp on. The other issue is to not jump to conclusions about power– there are not really any mainstream displays that can take advantage of the power transmission capabilities of HDbT yet.

What do you see, out in the field, is happening with 4K?

4K is challenging for digital signage, due to the size of the files, and lack of infrastructure that can handle it. Sure, we have displays that can show the resolution, and they are rapidly becoming affordable, but the media players that can handle it are not out there much so far, and signal distribution equipment is still limited. 1080P may seem old fashioned with 4K being here, but 4K still in its infancy– for now.

Related to 4K: HDMI 2.0– there is still a lot of confusion about what "4K" display set ups out there, are really 4K. Is HDMI 2.0 necessary throughout your system, to do real 4K at 60Hz?

That's a great question. There are two competing standards for 4K signal, HDMI 2.0 and DisplayPort 1.3. HDMI 2.0 is capable of delivering 60HZ at 30FPS. If you are going to use it with USB, each part of the chain must be compatible, or the whole system will drop down to the common standard that all equipment can handle. It is definitely important to ensure the whole signal chain can support the standard. Older HDMI standards simply don't have the bandwidth to handle 4K at 60HZ.

What will see in Displays for digital signage, in 2015 or 2016, that we have not seen already?

The biggest looming thing is OLED based displays. I don't mean the curved stuff for home use, but true high quality OLED commercial grade panels. They offer a LOT of capability, in terms of contrast, color saturation, and can be made flexible. Look at a product like the Samsung Galaxy Note Edge, with its wrap around screen. Imagine the visual impact of that kind of display in the field! In addition, I think the increase in display brightness we have seen will continue to become more common. The mainstream manufacturers are launching higher light output LCDs, with 2500nits being common, and 5000 nits becoming common. This means that we can place these displays into more outdoor applications, with enough brightness to overcome the ambient light, and also get more creative in their use for things like storefronts. Optically bonding the displays also helps eliminate glare, as in the Peerless Xtreme products, and I think we will see more of those. Finally, videowalls... I know, those are already common, what could be new? I don't mean dropping bezel sizes, but really better processing, and simply more creative application of them. The "art wall" concept is finally gaining traction, as we are finding out that people need something visually "different" to capture attention.