



# OPS is Changing the Digital Signage Landscape

While the digital signage market was once comprised of dozens of proprietary systems, the advent of the Open Pluggable Specification is allowing deployers to adapt and grow their networks with the changing times.

In the early days of digital signage, manufacturers had their own proprietary systems and devices. Once a deployer chose a specific supplier they were locked into that supplier's products. That limited the deployer's options when it came to upgrading and expanding their network or adding new devices.

But as the market grew, having hundreds of disparate systems simply didn't make good business sense. Deployers wanted networks that could be expanded as their needs grew instead of having to purchase an entirely new system.

In addition, as new digital signage devices hit the market they wanted a way to incorporate those devices into existing networks

The advent of Open Pluggable Specification for digital signage has changed all of that.

## Setting the standard

The Open Pluggable Specification was created by chipmaker Intel to help standardize the design and development of digital signage devices and pluggable media players. Intel created the OPS to address digital signage market fragmentation and simplify device installation, usage, maintenance and upgrades.

The OPS enables digital signage manufacturers to deploy interchangeable systems faster and in higher volumes, while lowering costs for development and implementation. Robust connectivity and the ability to internally support audio and RS232 allows for more than just the typical PC modules. OPS' standardized design means that third party OEMs can build modules that will work with any manufacturer's displays and projectors that adheres to the Open Pluggable Specification.

NEC Display Solutions was among several industry leaders in digital signage, along with Microsoft and the Taiwan Digital Signage Special Interest Group, which supported the Intel OPS from inception in October 2010. Leveraging the robust Intel® architecture, it features Intel® vPro Technology with Keyboard-Video-Mouse redirection capabilities that allow IT administrators to run diagnostic tests, install upgrades, and view and control the digital display content remotely.

"Intel is a leader in technology innovation and collaborates with the industry to develop standards for new markets" said Jose Avalos, worldwide director of visual retail, Retail Solutions Division, Intel. "OPS PCs deliver elegance to any installation, and give users smart and connected capabilities to promote their messaging and brands."

Installing digital signage equipment that incorporates OPS creates scalable digital signage applications that can easily network with other equipment for interoperability or be upgraded to fit each customer's digital signage requirements, thus future-proofing technology investments. Instead of having





And if the network owner needs to make a repair or upgrade a particular device, a technician can simply come in pull out the old module and plug in a new one.

“In most cases, the screen doesn’t even need to be removed from its mount,” Feldman said. “On the other hand, if the deployer decides to upgrade displays, media players and other peripherals can simply be removed from the old displays and plugged in to the new ones.”

Instead of having to develop multiple displays to work with a variety of media players, for example, equipment manufacturers simply need to incorporate a slot to accept any OPS-compliant media player.

Not only does that lower manufacturing costs, it lowers the total cost of ownership as well by reducing the need for a dedicated storage area and additional cabling for media players and other devices. Because those devices are powered via the OPS connection, the need for a separate power source is eliminated as well, allowing digital signage to be deployed in areas where it was previously not feasible.

OPS is also helping to drive the growth of interactive whiteboards and other digital signage applications in educational and corporate settings. Using those devices can be as simple as plugging the device into the display’s OPS slot, allowing speakers to bring in their presentation on their own computing device and set it up in minutes.

University classrooms, for example, can be outfitted with displays incorporating OPS, allowing professors to create interactive lectures at home and bring them to class on a pocket-sized media player. Corporations can create demonstrations on new products or procedures for trainers to easily carry to remote locations for later viewing.

In addition, screens can be outfitted with an option card that connects a touchscreen to a computer via a CAT-5 cable, allowing for remote control of the computer via that touchscreen.

Devices based on Windows, Android and Linux operating systems are all widely available, allowing the network operator to choose the solution that best suits their needs and shop a variety of suppliers to obtain the best value.

“What Intel has done by creating this OPS standard is to offer a way deployers can have modular components that do whatever you need a screen to do just by plugging in a card,” said Chris Feldman, product manager with Chicago-based NEC Display Solutions.

### Benefits of Open Pluggable Specification Devices

- Lower cost of ownership via lower storage and cabling needs.
- Not tied to a single vendor.
- Eliminates unsightly wires and employs compact, secured media players.
- Eliminates need for separate power source.
- Deploy solutions faster since device compatibility is built-in (i.e., plug and play).
- Upgrade systems more easily thanks to standard interfaces.



## On the horizon

One of the biggest opportunities for networks that incorporate OPS is the ability to add new devices as they hit the market.

In addition to allowing the incorporation of more powerful media players and PCs, digital signage deployers are increasingly seeking to leverage their networks for other uses. Streaming devices are becoming more widespread, allowing networks to incorporate live content such as weather reports, news or emergency notifications, with the streamed content serving as an attractor to draw in people's attention and then expose them to additional content on the same screen.

NEC Display Solutions, for example, has introduced its SB-03TM, an ATSC digital tuner module designed to add high-definition broadcasting capabilities to digital displays. The company also has a number of OPS compliant PCs and media players, and incorporated OPS into its recently released 55-inch MultiSync X554HB display, a specialty large-screen monitor built to cope with high ambient lighting.

In addition, OPS-compliant HDBaseT receivers provide an economical means of extending 1080p/60Hz video signals with embedded multi-channel audio to digital screens or projectors over long distances, while an HD/SDI card adds an SD-SDI or HD-SDI input plus loop output for displays and projectors. With loop output, the SDI signal can be shared with another display so they can be daisy-chained.

And with the "Internet of Things" now one of the most popular buzzwords when it comes to digital signage, OPS slots may end up providing connectivity to any number of devices that can be used to trigger specialized content. Thanks to the technology of OPS the opportunity to magnify the power and capability of a network is nearly limitless.



By Richard Slawsky | Contributing writer,  
Digital Signage Today