

Choosing the Right Smart Signage Solutions for Digital Signage

With new-generation open architecture smart signage platforms, you can choose from a complete display/content management ecosystem without being held back by common System on Chip (SoC) limitations.

INTRODUCTION

The use of digital signage in public spaces is booming, and each year customers have more and more options for digital signage systems: screens, content software, mounting options, content/media players, and more. The fact that designers, installers, and end users of digital signage have had to devote a huge amount of time, money, and resources to sorting through these choices and making decisions about each component has impeded even greater market penetration. For many, the boom in digital signage has meant more confusion and added costs. But fast-forward to today—major developments are ushering in a new era with digital signage solutions that are easier and more affordable to design, deploy, and maintain in the field. This white paper will show how the best new smart signage systems have now overcome a major TCO (Total Cost of Ownership) hurdle, by eliminating the need for separate media players. And the best new smart signage systems are both simplifying and improving content playback, with solutions that lead to better TCO and better results in the field. Selecting the right kind of smart signage—based on an open architecture software platform and allowing the most Content Management Software (CMS) partner options—is key, because all “smart signage” is not created equal.

TOWARD A BETTER MODEL FOR DIGITAL SIGNAGE DEPLOYMENTS

The global digital signage market was estimated at \$18 billion in 2017 and is anticipated to reach \$32 billion by 2025. The latest market research report on the global digital signage systems market by Technavio predicts a CAGR (compound annual growth rate) of close to 10 percent during the period 2018–2021. So there has never been a more exciting time to implement new digital signage display technology. Digital signage for retail spaces, for transportation hubs, and for schools and universities—indeed, for any and every public space—is in high demand.

Where is the opportunity in the midst of this historic boom? How can you turn a booming market—that can mask cost and pricing pitfalls—into a more profitable market, whether you’re planning a major digital signage rollout or seeking to improve your profitability on routine illustrations?

In the AV and digital signage industries, we’ve all seen impressive and compelling case studies of the best digital signage rollouts—such as the signage for 6,500 Burger King® restaurants that SICOM and IST deployed; the McDonald’s® restaurant deployment of 40,000 new screens involving 45 different creative agencies; and digital signage for 306

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different events, featuring 206 countries, across 42 sporting disciplines at the Rio 2016 Olympic Games. And the list goes on. Whether you're planning a major new digital signage rollout for the next Olympics, for McDonald's, or for a regional rollout, there are now better system models based on new smart signage platforms.

RETAIL: THE BIGGEST GROWTH MARKET FOR DIGITAL SIGNAGE, AND THE PROVING GROUND FOR SMART SIGNAGE

One of the best test-grounds for TCO issues in digital signage is the retail space solutions market. Much of the digital signage industry growth today is accredited to the growing market for digital signage for retail spaces. Consider:

- According to the *Mastercard SpendingPulse* report released in December 2017, US retail spending (excluding the automotive category) was up 4.9 percent YOY from 2016.
- The definition of "retail" is changing. Pro sports arenas, for example, are not just

for sporting events today—the newest ones are retail centers as well.

- Retailers plan to double their investment in "retail experiences" by 2019. This means more technology in stores.

Whether for retail spaces or almost any signage deployment, digital signage stakeholders, including small and medium business (SMB) retail store owners, increasingly have budget and technical staff considerations where TCO is paramount. They need a different approach from yesterday's traditional enterprise platforms. It needs to be hosted in the cloud or run on a local LAN. And PCs are too difficult to configure as media players. A better, more cost-efficient solution is needed, with low upfront costs and better TCO over the life of the deployment. And for retail digital signage rollouts serving many locations locally, statewide, or nationwide, TCO is particularly critical, so eliminating costly additional components such as media players can make the difference between the financial failure or success of the project.

Top 5 Benefits of Digital Signage in Retail Stores



Some manufacturers do their own software for SoC (such as Linux-based software), but the market has spoken: the better way is to use an open architecture standard.

THE BIRTH OF SMART SIGNAGE—AND ITS PAST LIMITATIONS

Smart signage is the term given to digital signage where SoC-based screens are used—as opposed to using separate, external media players or PCs to drive content to screens. SoC stands for “system on a chip.” That is, instead of using an external media player, the content is played back using the chip embedded in the commercial-grade LCD screen. Several manufacturers introduced such systems starting about five years ago. The internal memory capacity of the chip enabled the “smart” LCD display to deliver playback without PCs or an external media player, which facilitated more flexibility in installation and presentation. These “system on a chip” configurations meant that each screen could be IP addressable without the need for a separate media player—at least this was the idea for basic digital signage content needs.

But until today the ecosystem for digital signage deployments—in retail and other spaces—was a confusing landscape of both too many options and too-limited SoC options:

- Many CMS (content management software) vendors were in the “hardware agnostic” camp, which, for the most part, meant Windows®-based PC media players that the user configured themselves.
- The “full service” digital signage providers supplied not only the software, but also their hardware (usually PC-based). They also managed your content, scheduled, and networked it all for you. While this was a nice service, it was too expensive for many applications.

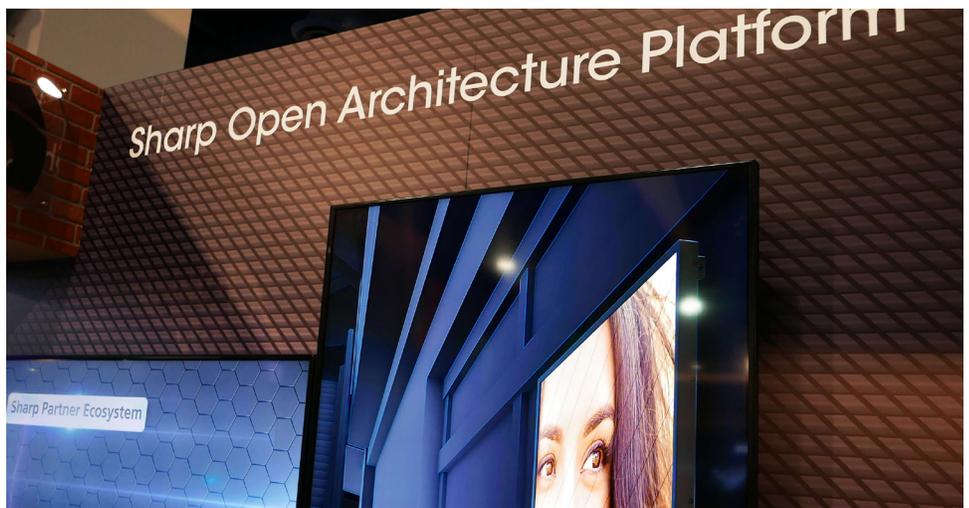
- The SoC player was built into the screens in select lines of commercial models. (These were not “consumer” screens, which never had built-in media players for digital signage—not even the ones called “smart TVs” that could browse the Internet. These products held great promise. They:
 - ▶ Required no external media player
 - ▶ Had fewer parts
 - ▶ Included fewer cables
 - ▶ Promised that fewer things would go wrong.

However, all of those promises were limited by the systems themselves.

For years, confusion reigned over which combination of elements a user should employ to build a digital signage system. If someone needed dynamic data (e.g., dynamic prices on menu boards, or interactive or social media or news feeds), did they need a PC-based media player and a traditional CMS? If they had a smaller network to deploy, should they go with a SaaS offering for their CMS?

And when the various Android™ media players appeared on the market some five to seven years ago, there was even more confusion. Many AV integrators and end users were overwhelmed. Lots of vendors offered scaled-down Android options, but none of them stood out from the pack.

And what about those smart signage platforms, using SoC, and their promise of better TCO and easier deployments? The problem was that the SoC offerings of several large screen manufacturers were based on a proprietary CMS—their own CMS software did not work with anyone else’s screens. Since they weren’t built on an open architecture model, the user was forced to use a proprietary CMS from the



screen manufacturer or an over-simplified CMS from a separate CMS “partner.” For example, if the network you wanted to create included screens that weren’t all in the same building, you still needed one of the traditional CMS vendors that supported one of the built-in SoC screen manufacturers, but there were performance limits.

And what if someone needed more scalability for large deployments?

The bottom line in the digital signage market was this: the promise of a better, easier, smart signage platform was not delivered in full. Product lines based on SoC were limited by proprietary software, by limitations on scalability, and by a too-limited stable of CMS partners for the screen company’s offerings. Until today, that is.

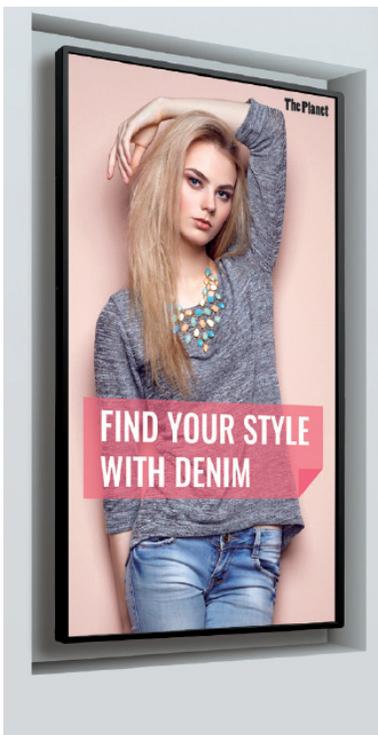
ENTER OPEN ARCHITECTURE AND SCALABLE, SMART SIGNAGE, FOR ANY DIGITAL SIGNAGE APPLICATION

What a difference a year makes. Smart signage has been reborn—thanks not only to the surge in the retail market, but also to the engineering and design efforts of one company. In the past 12 months, Sharp has become the first professional

display company to use the open architecture platform for digital signage.

This platform offers a much better way for end users to download, store, and play content directly from the display’s SoC. The platform combines Sharp technology and alliances with the leading third-party digital signage software providers. Sharp broke the mold of the old, limited SoC platform by:

- Using the best platform approach. Some manufacturers do their own software (such as Linux-based software), but the market has spoken: the better way is to use an open architecture standard, as Sharp does.
- Utilizing a powerful, integrated SoC controller, driven by the Arm® Cortex®-A17 quad-core processor with 2 GB memory and 8 GB storage, integrating Android OS (4.4) for the best third-party Android platform apps.
- Offering flexibility: Whether in a landscape or portrait orientation, the displays can be installed face up, face down, or tilted forward or backward at an angle of up to 90 degrees. Designed for easy hanging installation, they can be suspended from four corners of the rear housing with wires.





- Ensuring expandability: Displays are equipped with an Intel® Mini OPS-compatible expansion slot that will accommodate an optional HDBaseT™ receiver board (PN-ZB03H), wireless presentation board (PN-ZB03W), or computing board (PN-ZB03AO). An optional wireless adaptor (PN-ZW01) is also available.
- Offering end users easy ways to download, store, and play content directly from the display with Sharp's dedicated new display series, based on the SHARP Open Architecture Platform—the PN-B and PN-M series. For more advanced applications, leading content management software providers have ported their Android-based applications to run on the PN-B and PN-M series embedded SoC.

What are the key improvements in the new Sharp platform, from the perspectives of some of the top digital signage CMS providers? We asked CMS providers who support various brands of digital signage displays what it was about the SHARP Open Architecture Platform that led them to be excited about—and to invest resources to support—the new Sharp Smart Signage lineup.

“Sharp reached out and we had some useful discussions early on in their process,” says Jim Vair, president of Capital Networks. “We felt that they listened to our input and included us in their efforts. The SHARP Open Architecture Platform closely followed our existing development plans—which is a great benefit for all customers as this means that support for the Sharp method of supporting SoC will be in line with the continuing development efforts of leading digital signage CMS vendors.”

Capital Networks tested the new SHARP Open Architecture Platform and its SoC technology. How did it perform with their software as compared to other platforms that they currently support? “The Sharp implementation of SoC allowed us to take advantage of all of the features of our Android digital signage media player solution,” says Vair, “enabling us to use our complete Android OS media player engine. This provides customers the advantages of a forward-and-store content solution and advanced scheduling, content triggering, and interactive features. There are no compromises with this solution, and the customer can truly manage their content with no limitations.”

Sharp's Smart Signage ecosystem partners providing CMS offerings tailored specifically for the Sharp Smart Signage platform.

NoviSign is a prominent digital signage CMS provider that is also one of the major partners in the new Sharp Smart Signage ecosystem. (There are now 15 such partners- see page 6 for list.)

"We've done a lot of joint projects with Sharp and their channel partners," says Chad Bogan, NoviSign's director of sales and marketing. "We have received outstanding feedback on how well NoviSign's digital signage software and Sharp displays work together. When you match incredible image/picture quality with reliable hardware and a robust digital signage software, you have happy customers."

"Sharp used a very good version of the Android OS—very stable for digital signage—and the quality of playback is solid. It's similar quality to Windows, and 100 percent reliable, but you don't have to spend \$300–\$400 for a media player. Sharp was able to incorporate the better Android OS—it's ten times richer than competing products, at a price point that is more affordable," says Bogan. "Because NoviSign's software can be installed onto the SoC chip, channel partners can provide their customers with a total solution that eliminates the need to connect an external player. This eliminates the cost of a media player box, making the overall set-up quick, stress-free, and turnkey. A true total solution."

"Our software is cloud based, with a heavy focus on integrated databases—for example, product databases and event

management databases for digital menu boards and wayfinding/room signage applications," says Kevin Goldsmith, chief technology officer of Ping HD. "We are heavily focused on data integration and support a wide variety of external data—for example, POS systems, EMS systems, flight data, MRSS, and so on. Other SoC display vendors have proprietary operating systems and have, on occasion, made significant changes, which resulted in our development team having to modify the application to continue to function on a new product. Sharp utilizes Android, so there was minimal development effort in order to ensure our Android application works on the SHARP Open Architecture Platform."

Jeffrey Weitzman, managing director of Navori Digital Signage, summed up Sharp's advantage. "Sharp has been producing top-of-the-line-caliber displays for a long time now. Thus, investing resources in becoming a supported signage software provider for this new lineup became a priority for us."

CONCLUSION

Even as the demand for digital signage systems has surged, the ecosystem for digital signage deployments has been a confusing landscape of both too many options and too-limited SoC options. But we are now seeing a new era of digital signage solutions that are easier and more affordable to design, deploy, and maintain in the field. The best new smart signage systems have not only overcome a major TCO hurdle by eliminating the need for separate media players, but their superior open architecture platforms also offer a much better way for end users to download, store, and play content directly from the display's SoC. ■



PN-B and PN-M Series Smart Signage Displays



Sharp Imaging and Information Company of America (SIICA), a division of Sharp Electronics Corporation (SEC), has introduced its first stand-alone signage solution with the flexibility and expandability to support various applications and usage styles—all based on the SHARP Open Architecture Platform.

The new Sharp professional LCD displays deliver digital signage solutions, from all types of content providers, that don't rely on external media players such as PCs. Each display features a powerful, Android-based, built-in SoC (system on a chip) controller driven by the Arm Cortex-A17 quad-core processor (max. 1.8 GHz) with 2 GB memory and 8 GB storage. The embedded SoC provides for unique reliability, convenience, and power, and it reduces cabling and allows for easier content deployment.

The new Sharp PN-B series is comprised of the 40" and 50" Class (39.5" and 49.5" diagonal, respectively), PN-B401/501 professional LCD displays—Sharp's first standalone solutions to feature the SHARP Open Architecture Platform for digital signage. Engineered for 16x7 commercial operation, they offer easy ways to download, store, and play content directly

from the display, which helps to make digital signage more affordable and accessible than ever. These smart signage solutions include a powerful built-in quad-core SoC (system on a chip) controller, which eliminates the need for a separate media player or PC.

The new Sharp PN-M series consists of the 40" and 50" Class (39.5" and 49.5" diagonal, respectively), PN-M401/501 professional LCD monitors. Providing 50 percent greater brightness than the PN-B series, the PN-M displays are specifically engineered for 24x7 commercial operation. Each PN-M series display features the same SoC controller as the PN-B series, driven by the Arm Cortex-A17 quad-core processor (max. 1.8 GHz) with 2 GB memory and 8 GB storage, and integrates Android OS for third-party Android platform apps. Whether in landscape or portrait orientation, the displays can be installed face up, face down, or tilting forward or backward at an angle of up to 90 degrees. Designed for easy hanging installation, they can also be suspended from four corners of the rear housing with wires.

For information: www.sharpusa.com