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The Digital Signage Business Transformation

Operating a digital signage network? Your business is about to change. From AI to 4K, new technology is creating opportunities for growth. Read this ebook to discover what's next.

The ways organizations communicate are constantly changing. The process is usually gradual, with incremental improvements in technology and business models. But there are occasions when evolution gives way to revolution, with massive changes in the market.

Digital signage networks are at such a crossroads. A combination of technologies—most notably powerful AI and intelligent distribution networks—has enabled displays to respond to viewers and their surrounding environments. Getting the right message to a targeted group at an appropriate place and time has never been easier.

The services that such networks can provide have also expanded. Beyond delivering ads and information, intelligent displays can: read automobile license plates for faster curbside pickup; count occupation density to conform with health regulations; and so much more.

To thrive in this new environment, network operators should adapt their skills and solution offerings. To that end, this ebook provides an overview of three areas that will affect network operations:

- Operators must achieve three key promises—addressability, accountability, and attributability—to ensure their networks can deliver fundamental services for the digital transformation of organizations.
- Efficient network management is a must, and requires a platform that can provide centralized control.
- Display networks also need control, scalability, compatibility, manageability, and extensibility, down to the device level.

By using information as a starting point, network operators can serve clients in entirely new ways, opening up new opportunities for growth.

Digital Signage Is Evolving; So Are Network Operators

Digital signage is rapidly evolving, gaining new roles with retailers, campuses, offices, event venues, and more. Now comes the biggest evolution of all: enterprise digital transformation.

As digital signage platforms add new capabilities, they can take on entirely new applications—helping enterprises innovate at unprecedented speed. Displays equipped with visual sensors, for example, have been rapidly repurposed to aid physical security and help maintain social distancing.

For network operators, this is a breakthrough not just in the scale of opportunities, but in the type of services they can provide. Instead of being just another vendor, network operators can become active partners in their customers' operations.

Turn New Tech Into New Business

It all starts with the emergence of AI and automation. These technologies move digital out-of-home (DOOH) media beyond old broadcast media models, and into precision narrowcasting.

Today's smart displays can adapt on the fly, delivering the right message to the right audience at the right time. What's more, these displays can assess viewer responses, delivering instantly measurable ROI (**Figure 1**).

Male
Happy
Attention Time
3.14s

Female
Happy
Attention Time
2.14s

Figure 1. Smart digital display networks can reach people with the right message and gather metrics. (Source: AdMobilize)

In many ways, DOOH media is following a path pioneered by online advertising. Just as banner ads gave way to context-aware, metrics-driven content, the DOOH market is moving away from display ads toward responsive content.

But DOOH media has a unique advantage: Physical displays can use sensors to understand their surroundings in a way that is impossible for online media. A smart display with thermal sensors can keep an eye out for fevers, for example. Or a display in a highly trafficked area could analyze fashion choices to help retailers stay ahead of the curve.

With all of these new possibilities, network operators have an opportunity to grow revenue. "There's a potential for every brand to allocate 20 percent to 25 percent of their ad budget to DOOH media," says Maroun Ishac, Director of Business Development in the Retail Solutions Division of Intel.

Make Success Easy

Perhaps more important, network operators can think bigger—not just about the content on their displays but about their customers' overall messaging strategy.

"Brands want to work from a strategy that has more of an omnichannel focus," says Matt Schmitt, President of DOOH media management company Reflect Systems. "Not just providing more online and mobile tools for customers, but also reaching customers at the right time and right place in their journeys."

To do this, operators need smart content delivery systems—i.e., automated systems that target the right audiences with the correct content on a timely basis without constant human intervention. Robust and real-time reporting is also critical. Operators and their customers must be able to gather actionable information so they can make better decisions.

But there is an even bigger picture to consider. As digital signage becomes part of digital transformation, there is a need for more capable platforms. "We see the power of platforms really driving all layers of solutions," says Bernard Carter, Vice President of Technology at digital signage developer Now Micro. In other words, start with the right platform and you will empower your customers to get creative.

A Robust Solution

To make the most of this inflection point in the industry, network operators can focus on three key promises:

- **Addressability**—target the best combinations of screens and times to reach specific groups, based on real-time data.

- **Accountability**—record and deliver metrics to show messages reached desired audience with qualified delivery.

- **Attributability**—show that exposure to a message or application delivers the desired response, whether a visit to a store or website or even an ecommerce purchase.

To deliver on these promises, operators need a platform that can handle the rapidly evolving expectations and an infrastructure that allows for innovations to be adopted at scale. An example of this approach is the partnership between Now Micro, Reflect Systems, and AdMobilize:

- Now Micro is an IT integrator that leverages Intel®-based technology to create future-proof systems with the power to take on new challenges

- Reflect Systems leverages its advanced DOOH software platform and data and design expertise to put on screens the content that networks and brands need

- AI expert AdMobilize AI expert pulls in data at display sites and uses it to direct proper messages to desired audiences and make smart decisions

An Eye to the Future

The future of digital displays and messaging is about more than showing ads. It will include interactivity, security monitoring, and more. Adopt a platform like that from Now Micro, Reflect Systems, and AdMobilize, and position a network—and what it can do—for success now and in the future.

Manage Digital Signage Networks for Efficiency and Profit

Digital signage is expanding into countless use cases. Creating positive brand experiences in a store. Offering event information in a conference center. Directing inbound visitors to food, lodging, entertainment, and other services at an airport.

And the market is also exploding: The compound annual growth rate of digital signage through 2024 is projected at 7.3 percent, to end up at $29.6 billion. Just the global ad spend through digital out-of-home (DOOH) media is expected to top $16 billion in 2020—during the middle of a pandemic when billions of people shelter at home.

And the opportunities are only getting larger as signage adds all manner of sensors, AI, and on-board computing power. What were once "displays" are becoming intelligent agents that can do far more than broadcast content. Cutting-edge signage is becoming an interactive media—one that responds both to viewers and to the surrounding environment.

Efficient Management Is a Must

But with opportunities come challenges and risks. One example is flopping in front of the public.

"Your mistakes are more visible than others," says Bernard Carter, Vice President, Technology at Now Micro. "If you have a problem, it's in a place that has visual impact."

That could mean a technical issue, like a blank screen. Or it could be a message appearing in the wrong place and time. But whatever the issue, you want to know not just when it happens, but be alerted to conditions and situations that might lead up to an outage.

An operator needs central monitoring and control, including remote diagnosis. That can avoid simple problems or, if something goes wrong, permit immediate corrections.

The capabilities also help efficiency and cost-effectiveness. Rather than constantly dispatching trucks and drivers, or even larger crews, the network operator can handle many problems from a control center, saving a lot on operational and maintenance costs. Upward of half the time, calls from customers can be handled centrally—a lot of person-hours not spent on the road.

Operational Benefits

Beyond reducing problems, centralized control enhances what network operators can offer their clients.

An obvious one that builds off greater efficiency is simplified management. Personnel spend fewer hours chasing and solving problems. That opens time for higher-value work, such as developing new capabilities and offering true value-added consulting to clients.

Central control provides rapid response to changing conditions. Changes in traffic patterns? Content tied to real-time events? Passing along valuable information about mass transit slowdowns or developing emergencies to consumers? All that and far more is possible.

Flexibility and responsiveness also mean that an operator can help clients leverage content for local opportunities. Some examples would be using license place recognition to provide faster curbside pickup, or informing shoppers that another line has no waiting.

With central control, such things are the beginning. The abilities allow the operator and its clients to plan differently and more expansively.

There is even the opportunity to use sensors and AI for collecting data and then analyzing it to suggest and support new marketing and business strategies.

A Platform That Delivers

Clearly, an operator needs a platform that can provide robust central monitoring and control. One example is Now Micro's DICE (**Figure 1**).
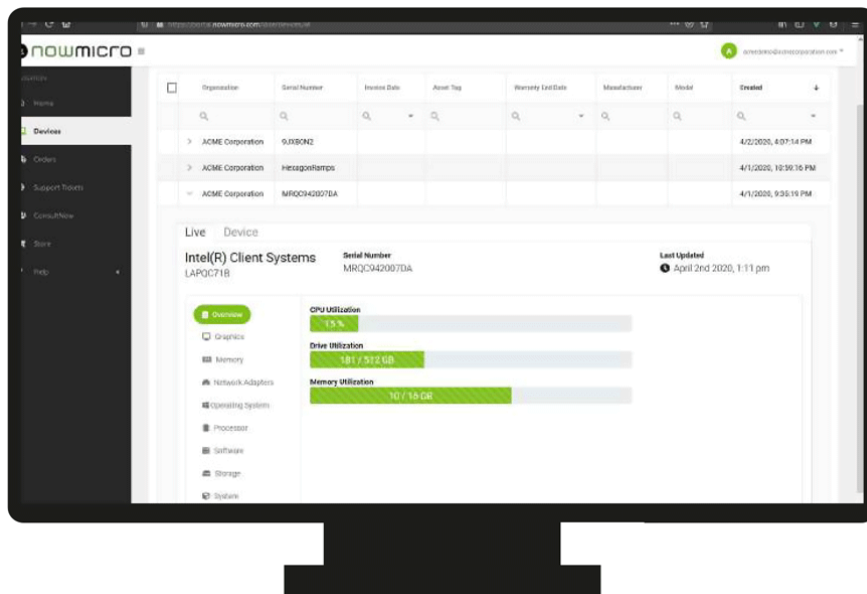
Figure 1. DICE offers an extensive array of tools that help you manage your network smarter.
(Source: Now Micro)

DICE offers truly centralized control. Not just from one physical location but in one application, using the power of the Intel® vPro platform for remote management on supported systems.

On a single pane of glass, operators get real-time device information and, additionally, all the configuration and historical information that can be critical in troubleshooting devices in the field. Pulling up device health and performance data is easy.

The software also provides all the capabilities necessary for full asset management, including purchase and product details, like how long equipment has been in the field and when the warranty expires, all at the click of a button.

Smart Investment for Today and Tomorrow

An advanced digital display network, no matter what the application, is only as good as the ability to monitor and manage it, with the flexibility to include future additions and configurations.

A good centralized management platform will help an operator provide what customers want today and what they'll be asking for in the future.

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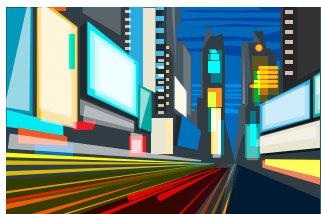
6 Ways to Future-Proof Digital Signage Networks

Digital signage is finding fresh ways to reach audiences. Established use cases like digital out-of-home (DOOH) advertising are expanding into ever-more environments, while new applications like public information kiosks continue to emerge.

To make the most of these growing opportunities, media owners want the latest capabilities for themselves and their clients. Meanwhile, network operators are looking for new tools that can help them deploy and manage systems efficiently—and ensure that they can deliver the right content to the right place at the right time.

And don't forget the end customers. They need solutions that are custom-tailored to their unique needs. Every end user has its own operating environments and desire for differentiation.

The best way to meet these goals is to take a holistic view of signage. A well-thought-out signage platform can deliver value today and also in the future to provide an ongoing ROI, even as new applications become available. Here are six factors to consider:

1. Proper Configuration

Signage systems are more than just a collection of parts (displays, media players, networking, sensors, etc.). The entire system must be proven to work together—and that can be a bigger challenge than it first appears.

What if there are subtle incompatibilities that reveal themselves only after a system has been deployed? What if customer requirements change?

Answering these questions has become increasingly complex. Artificial intelligence, powerful edge computing, and rapidly advancing display technology have turned once-simple screens into versatile information systems. These systems can collect information as well, using sensors to monitor brand preferences, provide security and safety functions, or monitor health issues.

2. Testing and Certification

Related to the previous point, the entire system must be able to handle the operating conditions. This requires consideration of factors such as heat, humidity, and exposure to dust, rain, and other elements.

Be careful when evaluating equipment manufacturers' claims. Are they based on unrealistic laboratory conditions? Or has the hardware passed grueling tests and earned certifications from standards bodies?

3. Extensibility

The system should support potential upgrades and evolving applications over a multi-year period. Until end of life, components should enable what customers will want. That often means including higher-end equipment with capabilities not yet in common use but that are likely to become popular in the short term.

For example, 4K is not currently in wide use, but your systems may be in the field for five years or longer. In that time, higher-resolution video and other performance-hungry content will become more popular. Advanced analytics and density monitoring are other applications likely to be in greater demand and more prevalent in a post-pandemic world.

4. Asset Management

Efficient network management starts before your hardware leaves the manufacturer. Choosing a platform that comes with built-in tools to track assets from purchase to retirement will help you maximize efficiency. Look for platforms that automate provisioning, asset locations, and other time-consuming tasks (**Figure 1**).
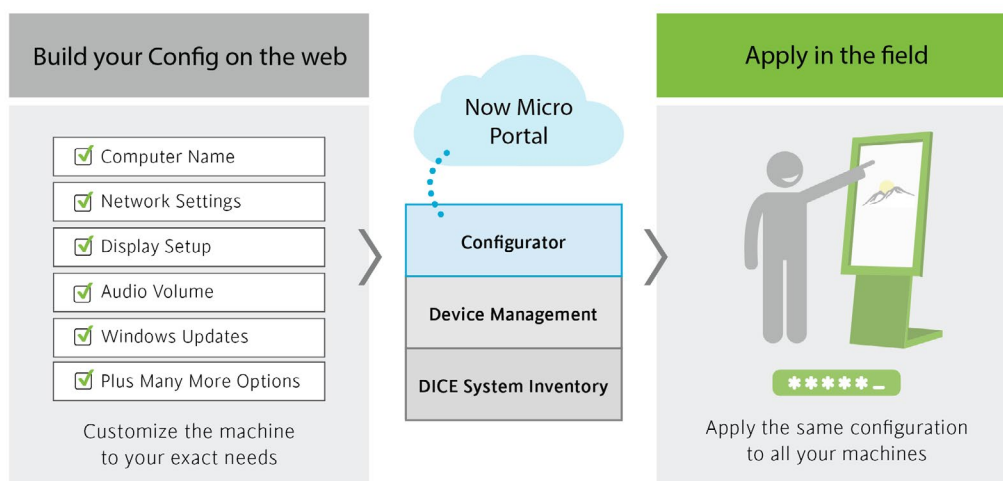
Figure 1. Now Micro's Configurator allows network operators to monitor many important types of equipment and configuration data. (Source: Now Micro)

5. Asset History

Service, maintenance, and use can depend on having a complete history of configurations, both hardware and software. Having a complete background can be the difference between a remote diagnosis and repair of a problem, and the expense, inconvenience, and unwanted attention of sending out a truck and crew to do on-site work.

6. Lifecycle Management

An operator will need to be on top of the full lifecycle management of equipment. That includes when equipment was put into service and what the length and terms of the warranty are. Equipment nearing its likely end-of-life will need replacement to avoid heightened chance of a public and potentially brand-damaging failure.

The Partner Advantage

What can help an operator in all these facets of designing, provisioning, implementing, and operating a network is a partner with capabilities to complement any business model and act as an extension to your team.

Now Micro is an example. Working with its own complement of partners, the firm helps organizations achieve better results through intelligent device lifecycle management. The company can aid in any or all aspects of equipment procurement, imaging, deployment, management, and end-of-life product retirement.

Starting with a foundation of Intel® processors, Now Micro uses only proven technologies. The company tests its products against real-world conditions and not just paper specs, and can even bring in third-party products to test their compatibility. And it offers a wide array of customization options to meet the increasingly diverse needs of network operators and their customers.

Now Micro performs any combination of unboxing, imaging, and delivery of provisioned devices to work with an operator's preferences. In addition, Now Micro's DICE configuration system offers complete, robust central monitoring, control, and complete historical data down to the device level. DICE tracks everything necessary for full asset management, including purchase and product details.

With the right platforms, configurations, certifications, and management tools, a network operator can protect its investment for the future and continue to satisfy its clients. The right partners make that easier.

The potential for digital signage network operators to grow their businesses is remarkable. Advances in technology have made possible expansive new ranges of services (and significant improvements on existing ones) that can help in the digital transformation of enterprises.

Network operators who provide these bridges to the future will enjoy greater importance and fiscal opportunities. But taking full advantage of these opportunities requires a thoughtful approach.

Network operators can start by acknowledging technical and operational requirements such change demands. They should identify key issues in operating platforms, choice and configuration of hardware, and expertise in data, design, and information management.

We've highlighted the most critical considerations—but there are many details that will be unique to each client engagement. We encourage you to use this resource to help guide development of the questions that operators need to ask themselves, their own service providers, and their clients.

With questions in hand, operators can begin the process of assessing their current capabilities and the changes necessary to become a leader in a rapidly evolving industry.

Now is the time to begin and, through early action, become a leader in creating new generations of digital signage networks.

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Now Micro is an accredited partner for Intel, Dell, HP, and Lenovo and offers purpose-built media players for use in digital signage, kiosk, and industrial IoT applications. Based in Saint Paul, MN, engineers collaborate with customers to optimize the out-of-box customer experience. Now Micro holds state contracts for public sector procurement and sells to original equipment manufacturers (OEM), independent software vendors (ISV), and resellers focused on visual communications.

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