



SIXTEEN:NINE
powered by invidis

AMERICAS
EDITION

NEXTGEN SIGNAGE

RE-IMAGINE DIGITAL SIGNAGE



invidis

YEARBOOK 2026
DIGITAL SIGNAGE & DOOH

Interactive 3D. Made Simple.



AMERIA × SONY
STARKITSRD



Bring every product to life



Be the booth they remember



Let visitors touch the untouchable



Make complex concepts click



3D without wearables



Natural gesture interaction



Easy content management



Dear invidis Readers,

The post-pandemic era has not delivered the calm many hoped for. Instead, geopolitics, technology, and economics have converged into what can best be described as a polycrisis. AI, cybersecurity, and managed services are reshaping industries at tectonic speed – and digital signage sits firmly at the center of this transformation. Screens have become dynamic tools for a world in constant change.

At the same time, digital signage is coming of age. After more than 25 years, it has evolved from a “nice-to-have” into business-critical infrastructure. National players are merging into global groups, enterprise IT is taking the lead, and scalability, resilience, and governance now matter as much as creativity and content.

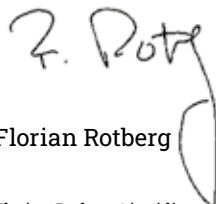
This is why we chose “NextGen Signage” as the theme of the invidis Yearbook 2026. NextGen is not just about new technology. It is about new operating models, shifting roles, and the transition from digitalization to automation – and increasingly to autonomy.

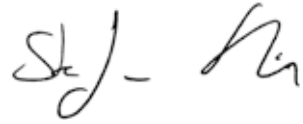
This year also marks 20 years of invidis consulting. We thank our partners, advertisers, and more than 100,000 yearbook readers worldwide. In the age of AI, information is abundant and easy to generate. Insight, however, is not. At invidis, our mission is to evaluate information, question narratives, and place developments in proper perspective. Context matters. Experience matters. And values that stand the test of time matter more than ever.

We hope you enjoy the invidis Yearbook 2026 – NextGen Signage.



Stefan Schieker & Florian Rotberg


Florian Rotberg
Florian.Rotberg@invidis.com


Stefan Schieker
Stefan.Schieker@invidis.com



6

DIGITAL SIGNAGE MARKET

- 8 State of the Industry: Zeitenwende for Digital Signage
- 12 Professional Displays: Mature LCD Meets Growing LED
- 16 Supply Chains: Origin Starts to Matter
- 20 M&A: Scale Becomes the Strategy
- 22 Cybersecurity: Time to Take Ownership
- 26 Global Software Ranking: Platforms and Power Shifts
- 29 Women in Software: Coding Was Never Cool – Until It Was
- 32 Peter Critchley: "Don't Sell Screens, Solve Problems!"
- 38 RDM & Managed Services: A New Era for Managed Signage

40

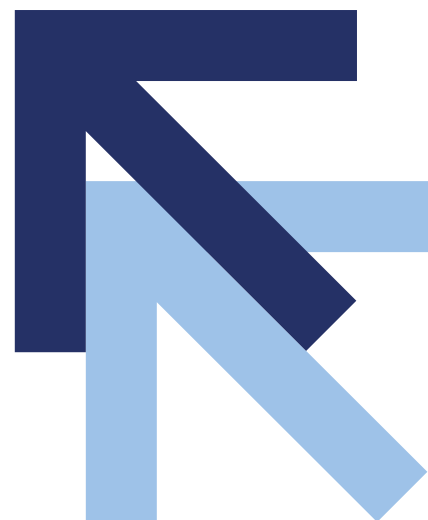
TECHNOLOGY

- 42 LED & MicroLED: Faster, Cheaper, Better
- 44 LCD: New Premium Panels
- 46 E-Paper Displays: Moving Into the Ecosystem
- 48 3D Effects: Little Space, Lots of Depth
- 51 Transparent Screens: A Slow Bloom
- 54 Digital Signage Software: AI Powers the NextGen CMS
- 57 AI Hardware: Screens That Think
- 58 Content: Breaking Free
- 59 Projection: Moving Upmarket

60

NEXTGEN SIGNAGE SPECIAL

- 62 Business Transformation: Forces of Disruption
- 64 Industry Development: The Phases of Transformation
- 70 Best Practice: From Screens to Systems



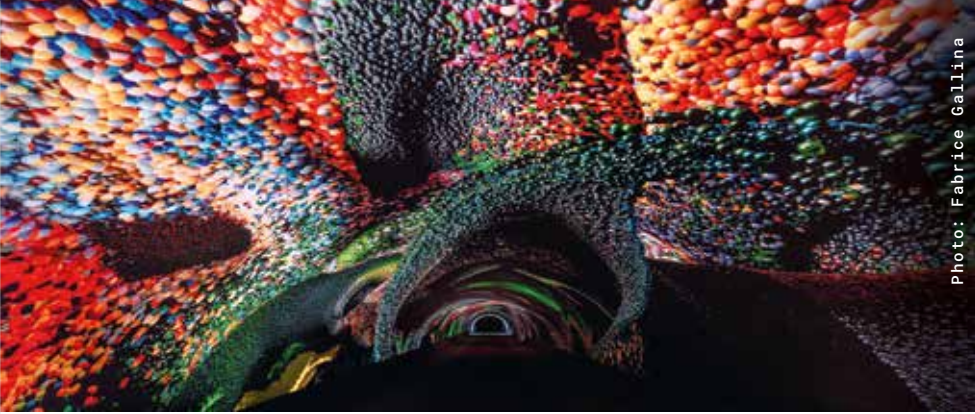


Photo: Fabrice Gallina



Photo: invidis

72 MARKET MAP

- 74 Markets Overview:
Regions and Champions
- 76 Ranking NA:
Tariffs and
Tech Tailwinds
- 78 Rankings LATAM:
Growth and
New Structures
- 80 Creative Realities:
"Go Big or Go Home"
- 82 Trison:
New Contracts
Set the Stage
- 84 Spectrio:
Beyond Software
- 85 Dise:
Global Growth
- 86 M-Cube:
Touching Hearts
and Moving Wallets
- 88 Diversified:
Experience at Scale
- 89 Umdasch
The Store Makers:
Connecting Stores
- 90 Econocom:
A Bold Target
- 91 Zetadisplay:
Clear Focus
- 92 International:
Transforming
the Value Chain

94 OPERATING SYSTEMS 101

- 96 Operating Systems
at a Glance:
The OS Basics
- 100 MDEP:
Bridging the
Digital Signage Gap
- 102 Google ChromeOS:
The Future is
Aluminium

104 DIGITAL- OUT-OF-HOME

- 106 International Markets:
OoH Becomes a
Strategic Asset
- 108 DooH North America:
Navigating the
Next Growth Circle
- 110 Programmatic DooH:
The Budget Magnet
- 114 JC Decaux:
DooH, the Savior
- 116 Deep Dive:
The Big Retail
Media Questions
- 120 Airports:
The Luxury Tier of OoH
- 124 Iconic DooH in Germany:
Bring In the Big Screens!

126 COMPANIES

132 ABOUT US

- 134 The invidis
Digital Signage Experts
- 136 Sixteen:Nine –
powered by invidis:
The New Global Platform
- 138 invidis Media Kit
- 140 Imprint
- 140 Index of Advertisers

The background features a repeating pattern of blue geometric shapes, including squares, rectangles, and triangles, arranged in a grid-like fashion. The shapes are in various shades of blue, creating a modern, architectural feel.

**DIGITAL
SIGNAG
MARKET**





Photo: Mika Baumeister/Unsplash

Permanent disruption in the global supply chain – ship in Hamburg

STATE OF THE INDUSTRY

Zeitenwende for Digital Signage

Permanent disruption is the new normal: How a geopolitical polycrisis, AI, China's new strategic moves, and power shifts are redrawing the global digital signage industry.

Florian Rotberg

By spring 2026, the global digital signage industry is no longer navigating disruption as an episodic challenge. It operates under conditions of permanent disruption. What once appeared as isolated crises has converged into a true polycrisis: geopolitics, energy markets, technology, climate risk, regulation, and capital markets are no longer independent forces. They now interact, amplify each other, and produce cascading second-order effects.

For an industry structurally dependent on global manufacturing, cross-border logistics, long-last-

ing hardware platforms, and capital-intensive roll-outs, this convergence marks a fundamental shift. Digital signage is no longer merely adapting to change. It is being reshaped at its core.

Geopolitics: structural instability

The geopolitical landscape in 2026 is more unstable than at any point since the end of the Cold War. Escalating conflict in the Middle East – particularly involving Iran and the Strait of Hormuz – has triggered an energy crisis that exceeds the oil shocks of 1973, 1979, and even 2022 in both mag-

nitude and systemic impact. Brent crude price spikes have fundamentally altered logistics economics, while the UAE's withdrawal from Opec in May 2026 further eroded confidence in global energy governance.

At the same time, the war in Ukraine continues without resolution, consuming diplomatic bandwidth and financial resources. New geopolitical friction points are emerging across Asia, Africa, and the South China Sea. Overlaying all of this are climate-related disruptions that increasingly damage manufacturing facilities, transport corridors, and energy infrastructure.

For the digital signage industry, these macro-forces translate directly into volatile production costs, disrupted supply flows, rising insurance premiums, and higher financing costs. Risk, once priced implicitly, is now explicitly reflected in contracts and balance sheets.

US trade policy adds another destabilizing layer. The ongoing unpredictability of tariff announcements – introduced, suspended, reintroduced, or selectively applied – affects not only the US market but global supply routing decisions. To mitigate tariff exposure, manufacturers divert shipments to other regions, primarily Europe. Importers have to swallow the additional costs. Combined with the near standstill of imports into parts of the Middle East, this has resulted in a massive influx of LCD and LED hardware into Europe, far exceeding organic demand.

This oversupply has compressed margins across the value chain. Price erosion is no longer driven by competition alone but by crisis-driven inventory displacement.

China consolidates strategic dominance

In German political discourse, the word *Zeitenwende* describes a historic turning point. The term applies equally well to the digital signage industry in 2026.

Within just 12 to 18 months, the global balance of power in display manufacturing has shifted decisively toward China. The symbolism was unmistakable. TCL announced the acquisition of a

majority stake in Sony's Bravia display business, including B2B. Shortly thereafter, Skyworth followed with a majority takeover of Panasonic's consumer display unit. Even before these joint ventures technically commence in 2027, their strategic weight is already felt across the market. TCL, Hisense, and BOE now control the industry's most critical choke-points: LCD cell manufacturing and DV-LED production. This vertical integration enables rapid iteration cycles, aggressive pricing strategies, and unmatched time-to-market. With domestic demand in China still subdued postpandemic, export markets have become strategically existential.

In Africa, APAC, and Latin America, Chinese manufacturers – both well-known and lesser-known – now dominate SMB digital signage deployments. Premium segments in Europe, North America, and Japan remain led by Korean and Japanese brands. Samsung has defended its position as global commercial display leader for the 17th consecutive year. Yet even in the premium tier, competitive pressure is rising visibly.

Manufacturing dominance is no longer cyclical. It is structural. US-driven restrictions on AI-tooling, operating systems, and advanced semiconductors may delay hardware dominance, but they do not reverse the underlying trajectory.

Simultaneously, companies such as Foxconn (Sharp, which now includes NEC), TPV (Philips), and AUO (AUO Display Plus) are migrating up the value chain – from pure OEM to ODM (white-label) and increasingly to own-brand manufacturing (OBM). The traditional separation between brand, manufacturer, and ecosystem partner is dissolving.

AI boom I: memory price shock

For years, digital signage enjoyed a rare luxury: stable hardware pricing across extended product lifecycles. Integrators could calculate projects with certainty, often locking prices for years. That assumption collapsed in 2025 – and 2026 confirms it permanently.

The global AI investment wave – now absorbing close to 2 percent of GDP – has created unprecedented demand for memory and compute compo-



nents. RAM, SSDs, and even SD cards have become strategic resources. Prices fluctuate monthly, sometimes weekly. Double-digit increases are now the default scenario, and price guarantees have shrunk from years to mere months.

Entry-level media players are hit hardest. In some cases, system prices have doubled. Midrange platforms prove more resilient, but even here integrators must rethink portfolios and project assumptions. The technology mix is changing accordingly: increasing adoption of Android players, lean Linux distributions such as Yocto on ARM, and a steady retreat from embedded Windows platforms weighed down by licensing costs and hardware requirements.

Supply chains have largely stabilized after temporary Middle East lockups, but demand tells a different story. Corporate communications and workplace signage projects are being postponed, downscaled, or phased incrementally. Predictability – once the foundation of hardware-centric business models – is no longer assured.

AI boom II: Claude Mythos

If rising memory prices represent an economic shock, Claude Mythos represents a strategic one.

Announced by Anthropic in April 2026, Mythos is a paradigm shift. For the first time, an AI system can autonomously discover, chain, and exploit vulnerabilities at machine speed.

The risk was deemed so extreme that access was restricted to governments, financial institutions, and operators of critical infrastructure.

Mythos collapses the time between vulnerability discovery and exploitation to near zero. Low-severity flaws become dangerous once chained together. Traditional patch management assumptions collapse. The scale is unprecedented: in April alone, Mozilla fixed 423 Firefox vulnerabilities – a volume that previously accumulated over years.

Digital signage is uniquely exposed. The industry historically prioritized platform stability over patch velocity. Chromium engines embedded in SoCs were updated every 12 to 24 months to ensure long-term compatibility across large fleets. That model is no longer tenable.

Security update cycles will need to shorten from years to months. Quarterly patch guarantees, such as Microsoft's MDEP approach, become the new baseline. Smaller ISVs and hardware vendors may likely struggle to keep up with the velocity, com-



For Chinese manufacturers, global dominance is on the time table – Hisense booth at ISE 2026.

pliance requirements, and operational overhead. Consolidation accelerates.

Network operators face operational overload. Heterogeneous fleets with dozens of OS, Chromium, and firmware combinations require professional NOCs, remote device management, and resilient architectures. Security becomes an ongoing operational discipline rather than an episodic activity.

Legal headwinds

While cyber-risk accelerates, legal risk resurfaces in parallel. In North America, Alpha Modus – an until recently non-operating retail technology entity – has initiated a broad wave of patent litigation against digital signage and retail tech companies, including Mood Media, Creative Realities, Cooler Screens, and others.

The pattern is familiar: non-operating entities monetizing aging patents shortly before expiration. Dedicated litigation vehicles, dozens of defendants, and a clear intent to pressure settlements. Alpha Modus follows a modified roadbook: rather than owning a component of the system, Alpha Modus owns the “connective tissue” around the consumer experience itself. Owning the layer that ties analytics, media transactions, and engagement together in physical retail environments gives them enormous leverage.

Patent risk, long underestimated in digital signage, is once again a strategic variable rather than a legal footnote.

The SaaS apocalypse

Financial markets in 2026 speak of a “SaaS apocalypse.” AI agents capable of autonomous action challenge the economics of traditional, seatbased software models. Hundreds of billions in market value have evaporated.

Digital signage is not immune – but it is considerably more resilient than many horizontal SaaS segments. Deep data integration, hardware diversity and high switching costs provide protection. Licensing models based on endpoints rather than users are comparatively futureproof. Headless CMS platforms priced by API consumption are already aligned with agentnative economics.

Still, standardized longtail signage solutions with simple use cases and homogeneous hardware fleets may face pressure. In general: the simpler the problem, the easier it becomes for AI agents to replace dedicated software.

IT Integrators: scale eats margin

Finally, disruption reaches the integrator layer. As digital signage becomes mainstream, the market shifts from ProAV specialists to global IT managed service providers.

These players bring scale, balance sheets, procurement power, financing advantages and industrialized rollout capabilities. Lifecycle management, refurbishment and remarketing turn hardware into a 5- to 10-year service asset.

Specialists will not disappear. Museums, flagship stores and complex installations remain their domain. But wherever projects scale globally, IT integrators hold structural advantages.

Resilience becomes the differentiator

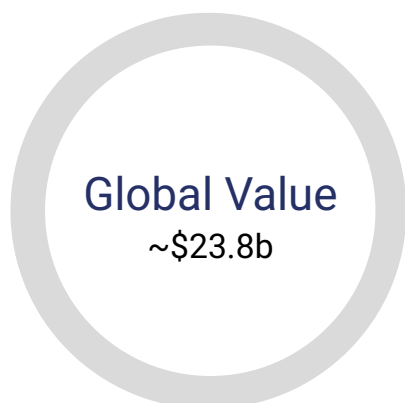
The global digital signage industry in 2026 is far from collapsing – in contrast: demand for digital signage was never higher than today. But the multi-billion dollar industry is not anymore cushioned from external shocks – not operating in a small comfort bubble of nice-to-have-technology. Digital signage has matured as it has become business critical and much more professional. Double-digit percentage growth is harder to achieve, margins are thinner – but still much higher than standardized IT –, and complexity is rising across every layer of the stack.

Those companies that adapt to geopolitical instability, AI-driven security disruption, changing valuation logic, and valuechain realignment will shape the next decade. The era of predictable growth narratives is over. But the market potential across vertical markets and geographies is still huge. Just the rules of the industries are becoming more normal.

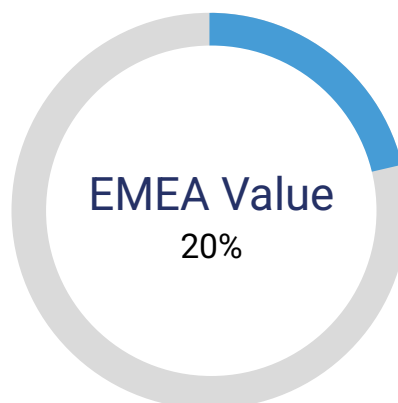
Permanent disruption is the new baseline. Resilience, not optimism, will separate the winners from the rest.

Total Professional Display Market (LFD + LED) 2025

invidis Yearbook 2026



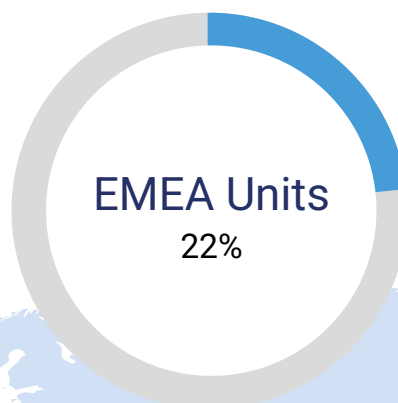
YoY -2%



YoY +2%



YoY 0%



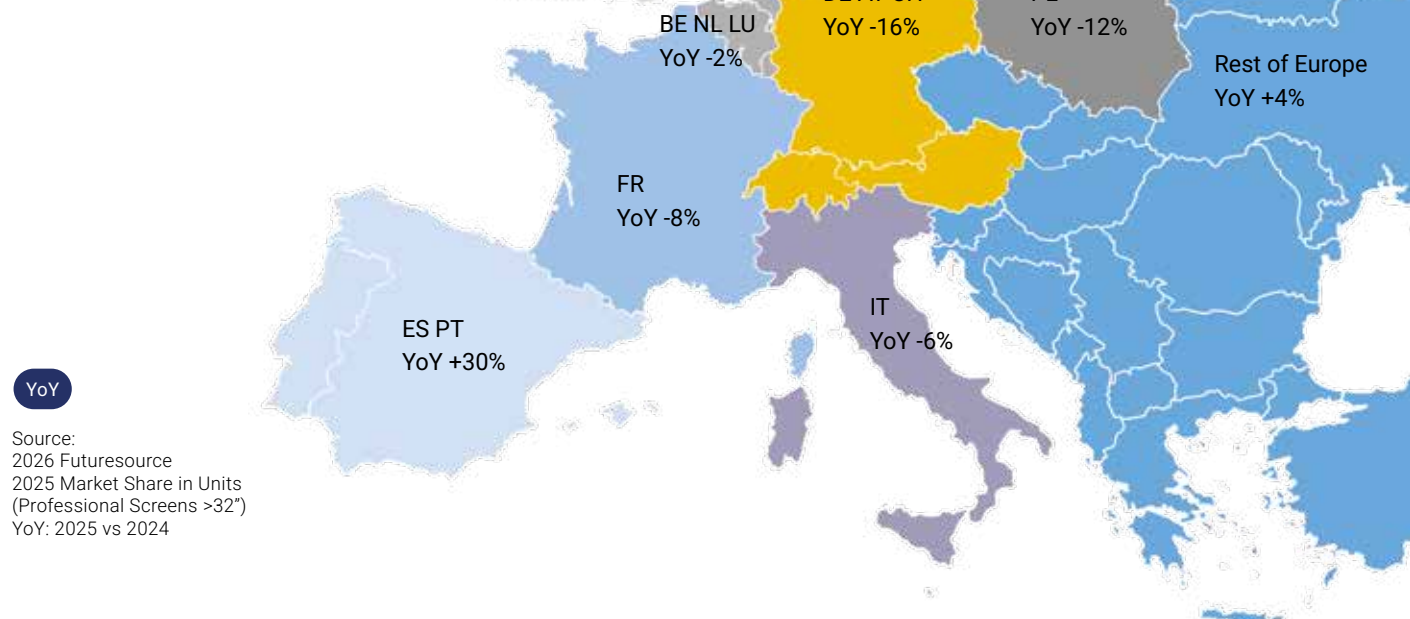
YoY -2%

YoY

Source:
2026 Futuresource
2025 Market in Units/Value in EUR
(Professional Screens >32" + LED)
YoY: 2025 vs 2024

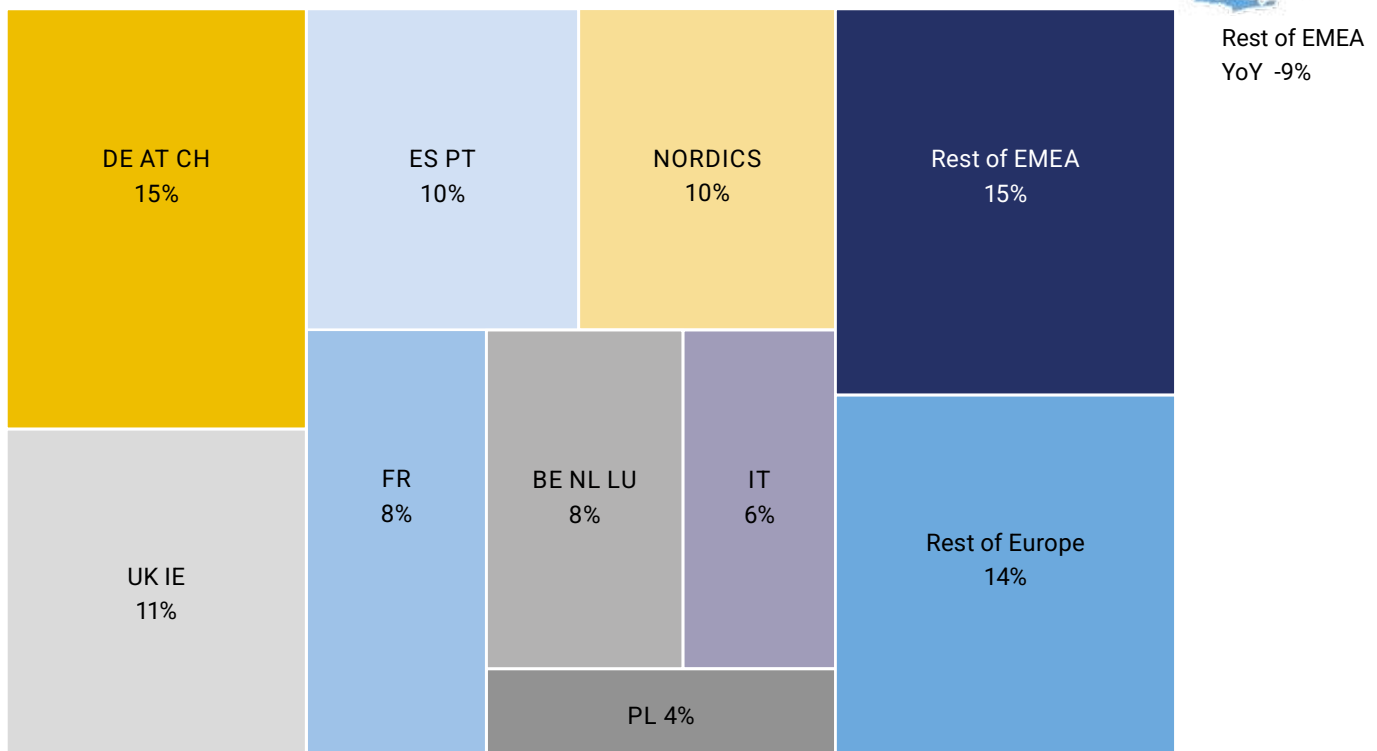
LFD only: EMEA Market 1.8m Units YoY -3%

invidis Yearbook 2026



YoY

Source:
2026 Futuresource
2025 Market Share in Units
(Professional Screens >32")
YoY: 2025 vs 2024



EMEA Market Shares

Source: Futuresource, invidis consulting GmbH, company informations



Now bundled together in our market data: LCD and LED



PROFESSIONAL DISPLAYS

Mature LCD Meets Growing LED

By 2026, the professional display market is clearly entering a phase of maturity: While the global digital signage market continues to grow, the underlying dynamics of its two core display technologies – LCD and LED – tell a more nuanced story.

Florian Rotberg

According to the latest Futuresource data, global professional LCD shipments have stabilized at around 8 million units annually since the end of the pandemic. LED, by contrast, remains the market's most volatile segment. Global LED volume grew by 24 percent in 2023, contracted by 3 percent in 2024, and rebounded strongly with 14 percent growth in 2025. These fluctuations are largely driven by China, which still accounts for roughly 50 percent of global LED volume.

In EMEA, LED growth appears far more linear. Between 2022 and 2025, LED sales in the region almost doubled. Yet despite this momentum, EMEA still represents only 14 percent of global LED volume, compared with 23 percent of global LCD volume. LED adoption outside China is accelerating – but from a structurally smaller base.

In 2025, around 760,000 LED screens were sold globally, with 103,000 projects in EMEA. This reinforces a longstanding industry assumption:

LED excels in generating attention, stands for large investments, but remains a minority technology in terms of installed base.

Big in value, small in projects

When LCD and LED are viewed together, the market reality becomes clearer. Approximately 8 million professional LCD displays and 0.8 million LED screens were sold globally in 2025. This results in around 8.8 million addressable digital signage touchpoints worldwide, of which less than one in ten uses LED technology.

Value tells a very different story. LED already accounted for 38 percent of global professional display value in 2025, highlighting its capital-intensive nature and its continued pull on investment budgets.

For the first time, Futuresource has gone beyond square meters and analyzed LED video controller data to estimate the actual number of LED screens

deployed worldwide. Futuresource estimates the global LED controller market at 1.2 million units, reflecting the fact that larger LED installations often require multiple controllers per screen.

The contrast between LCD and LED is also evident in market structure. In EMEA, the LED market is highly fragmented. Daktronics leads, closely followed by Samsung and Unilumin, with Samsung's share less than one percentage point behind the leader. Yet the Top 3 LED vendors account for less than 40 percent of the regional market.

The LCD market shows the opposite pattern. Samsung, LG, and Philips together control 56 percent of total EMEA LCD volume – with Samsung alone holding 36 percent. The LCD market has effectively consolidated around a handful of global brands, while LED remains structurally diverse.

LCD: Flat volumes, margin pressure

Globally, professional LCD volumes declined marginally by 1 percent in 2025, while market value fell by 3 percent, reflecting intense price competition and margin pressure. Deferred hardware from North America, redirected into other regions, intensified competitive pricing – particularly in Europe.

In EMEA, LCD unit volume dropped by 3.4 percent, yet total value remained flat year-on-year. Regional data varies widely – from growth of +4 percent to contractions of up to 30 percent – but annual comparisons are a poor indicator in a project-driven market. Rollouts are frequently postponed, split across fiscal years, or sourced cross-border within the EU single-market.

What remains consistent is the longterm trend: LCD volume is gently retreating, while total value stagnates.

LED grows, but at lower margins

LED deployments told a more positive story in 2025. Across EMEA, the number of LED projects increased by 17 percent, while total LED project value grew by 8 percent. Growth is therefore increasingly volume-driven, while competition, diverted hardware, and maturing technology continue to limit value expansion.

Combined, the global professional LCD and LED display market contracted slightly by 1.5 percent year-on-year to \$23.8 billion in 2025. EMEA moved in the opposite direction, growing 2.3 percent to \$4.6 billion. When recurring software revenue, rising labor costs, higher service shares, and increased media player costs are included, the overall EMEA digital signage market still managed mid-single-digit growth in a difficult year.

Progress slows – and matures

On the technology front, 2025 brought fewer headline innovations than previous years. Screen sizes, resolutions, and pixel pitches remained largely unchanged. Even the longrunning push toward ever-smaller MicroLED pixel pitches paused. Instead, manufacturers focused on improved coatings, better color accuracy, enhanced contrast, and incremental brightness gains (*see page 42*). CoB/MicroLED have improved substantially, but still lag behind classic SMD solutions in outdoor brightness.

From a practical perspective, display technology is now “good enough” for almost all professional use cases.

Energy efficiency, however, continues to improve with every generation. Power consumption and power management have become core design priorities. By contrast, SoC performance has largely stagnated, a consequence of cost pressure and low-spec components. Also the perceived physical look and feel of professional screens is stagnating due to the increased use of plastics instead of metal and more shared components with consumer TVs. First vendors have begun introducing SoC displays with dedicated NPUs, enabling AI-on-edge scenarios – though adoption is still nascent.

Memory costs and road to 2027

One factor shaping pricing beyond 2025 is memory. Global memory prices have risen four to five times, affecting digital signage displays directly. Memory represents roughly 10 percent of a professional display's bill of materials, and up to 15 percent in interactive whiteboards. As a result, higher screen prices are expected in 2026 and likely 2027.

SUPPLY CHAINS

Origin Starts to Matter

Resilience and digital sovereignty are becoming strategic criteria for hardware and software selection. Integrators and vendors are forced to recalibrate their ecosystems – a process that is anything but trivial.

Florian Rotberg

For almost two decades, digital signage has optimized scale, efficiency, and global sourcing. Displays and media players typically came from China or Southeast Asia, while software was developed in Western markets wherever engineering talent was available. The origin of technology is rarely featured in procurement decisions.

That era is ending. Geopolitical tensions, tariff regimes, and a growing political push to de-risk supply chains – particularly those linked to China – are fundamentally changing how digital signage infrastructure is evaluated.

Talking to manufacturers, integrators and end users alike, one message cuts across conversations: origin is no longer a neutral attribute. In a more regulated and geopolitically sensitive environment, digital signage is increasingly assessed through the lenses of resilience and digital sovereignty.

This shift is not driven by short-term crisis reactions or abstract political debates. It reflects a deeper structural change in how critical digital infrastructure – and digital signage increasingly qualifies as such – is defined and governed in Europe, North America, and beyond.

China itself mirrors this development. By formally defining digital signage as a strategic technology sector, Beijing pursues the same objective: securing supply chains for technologies with dual civil and military relevance. From digital sig-

nage networks to command-and-control centers, ProAV systems are now seen as part of national capability.

From cost efficiency to resilience

In security-sensitive verticals across the world, digital signage has quietly moved into domains where availability, manageability, and long-term operability matter far more than the lowest price. This includes obvious use cases such as command-and-control and critical infrastructure, but also healthcare, defense, government, transportation – airports, rail and transit –, financial services, and enterprise environments.

In the majority of projects, however, price still dominates hardware decisions. Retail, QSR, stadiums, and most long-tail signage installations remain cost-driven. Yet even here, origin awareness is rising. For many buyers, it has become a soft factor – not decisive on its own but no longer ignored.

Software selection shows a different pattern. Operating systems and cloud infrastructure have always been dominated by Western providers, due to cultural and data security compliance. Nevertheless, the lack of credible non-Asian hardware alternatives leaves many integrators struggling to realign their portfolios.

For a growing number of end customers, resilience has become a formal requirement. This includes

predictable supply chains, long-term component availability, and the ability to operate signage systems independently of sudden regulatory changes or trade disruptions.

The past years have exposed uncomfortable dependencies in certain geographies: components that became unavailable overnight, firmware that could no longer be maintained, or software platforms tied to jurisdictions outside customers' regulatory control. These experiences now influence procurement strategies more fundamentally than temporary 'crisis mode' reactions ever did.

Digital sovereignty enters signage

Digital sovereignty has long been discussed in the context of cloud services, data centers, and telecom infrastructure. Today, it is increasingly applied to end-to-end signage ecosystems – from SoC firmware and operating systems to CMS platforms, cloud hosting, and remote management layers.

For end users, the debate is less about technical mistrust and more about jurisdictional clarity. Who controls updates and roadmaps and under

which legal framework does the vendor operate? Also what happens if regulatory requirements change?

European policymakers have made it clear that technology origin matters most where systems influence public space, safety, or information integrity. While potential restrictions on non-European technology may not target digital signage explicitly, integrators, network operators and end-customers clearly recognize the direction of travel.

Manufacturing location gains relevance

On the hardware side, LCD displays, LED systems, and media players are under closer scrutiny. Asian manufacturing – particularly in China – will remain structurally important. Yet single-source dependencies are increasingly questioned.

Many buyers now ask for transparent manufacturing locations – a difficult request in practice. Even local sales teams of major display vendors often cannot predict which factory within a global manufacturing network will deliver a specific order. LCD panels may come from China, Vietnam,



Where does the product come from? This question gets more relevance in the global digital signage industry.

Photo: invidis



Malaysia, or Indonesia; in LED manufacturing, China's dominance is even stronger.

Most global display brands have outsourced the production of LCD panels – the core component of a professional display – to specialized suppliers or contract manufacturers. Hardware vendors typically focus on final assembly, or outsource manufacturing entirely. To mitigate tariffs or meet customer requirements, final assembly is sometimes near-shored. However, critical components – including computing, firmware, and video processing – continue to originate largely from China.

Determining the origin of a product or solution is often difficult and may also be politically motivated.

This has increased attention on vendors with domestic or regional production models, particularly in North America. US-based manufacturers such as Daktronics, as well as vertically integrated

solution providers like Stratacache, are frequently cited by European decision-makers as examples of clearer accountability and supply-chain control – even though they are not European companies.

At the same time, some defense, government, and enterprise customers have recently expressed concerns about 'Made in USA' for specific categories, reflecting deteriorating political relations between the current US administration and long-standing allies. The goal, once again, is not substitution – but diversification.

The hidden sovereignty layer

If hardware origin is visible, software sovereignty is often hidden – and arguably more critical. Content management systems, operating systems, analytics platforms, and AI-driven functions ultimately define how signage behaves in day-to-day operation.

Key questions raised by operators include where software is developed and maintained, under which legal framework vendors operate, and whether systems can function independently if connectivity or access is restricted.

European CMS vendors with transparent ownership structures and locally anchored development teams report growing interest from customers who previously focused primarily on features and pricing.

Large enterprise customers, in particular, are now treating signage software like any other enterprise IT platform – subject to compliance audits, sourcing policies, and long-term risk assessments.

New way of evaluation

In the big picture, the signage industry is undergoing a normalization of responsibility. As digital signage becomes mission-critical, it is evaluated by the same standards applied to networks, servers, and enterprise software.

This doesn't mean a categorical rejection of certain manufacturers. One has to differentiate between different verticals and regions. Origin becomes one variable among many – but one that was previously overlooked.

The AI ecosystem

One of the most visible discussions regarding origin is about Artificial Intelligence. Driven in part by the current US administration, the global AI ecosystem is increasingly divided into two camps: US-dominated platforms and AI Made in China. Washington is urging its allies to choose sides.

While US platforms and models remain more widely known, Chinese alternatives – such as Openclaw and others – are not far behind technologically. Even so, AI Made in China remains a hard sell in Europe, North America, and much of the Middle East.

That does not mean Chinese AI is excluded altogether. Several workarounds are gaining traction – some not entirely aligned with US policy, but increasingly popular in the digital signage industry outside Europe. One approach is AI Edge in a Box. Still largely unknown in the West, Chinese manufacturers are offering turnkey AI edge solutions that operate entirely on-premise. By processing data locally, these systems aim to ease concerns about connections to Chinese AI servers.



Empowering Human Engagement

SPECTRIO BRINGS YOUR BRAND TO LIFE

The **Intelligent Engagement Suite™** combines content, innovation, and data into one experience to influence customer behavior and support growth. Create meaningful interactions, deliver consistent experiences at scale, and know exactly what's driving results.

Start Building Smarter Experiences

spectrio.com

spectrio

M & A

Scale Becomes the Strategy

From Europe and North America to global players: Consolidation remained one of the defining forces shaping the digital signage industry over the past year.

Florian Rotberg

Across ISVs, integrators, and service providers, scale, geographic reach, and balance-sheet strength increasingly separated winners from those struggling to keep pace with a rapidly professionalising market. What was once a fragmented ecosystem of specialists is steadily evolving into an industry shaped by platforms, managed services, and multinational service coverage.

Europe

In EMEA, systems integrators continued to be the primary engines of consolidation. Econocom once again set the benchmark, quietly building a European digital signage powerhouse that is on track to generate ProAV revenues approaching €500 million (about \$575 million). Through the acquisition of four regional integrators, Econocom further cemented its position as the continent's most scaled digital signage service provider.

Econocom's differentiation goes far beyond size. The ProAV business is embedded within a multi-billion-dollar IT managed services group that holds a banking licence, offers extensive financing solutions, and operates a significant refurbishing and circular-economy business. This structure enables Econocom to deliver true end-to-end lifecycle services – from financing and deployment to managed services, lifecycle management, and remarketing. As a result, large, multi-billion-dollar integrators are redefining customer expectations in digital signage and exposing the structural limits of smaller, highly specialised ProAV houses. Many of these firms

boast outstanding expertise and mature ecosystems, yet are losing market share due to higher cost structures and limited financial leverage. The market is increasingly rewarding scale and service breadth over craftsmanship alone.

Europe's largest pure-play digital signage integrator, Trison, also maintained its acquisition momentum. With the takeovers of Pioneer Group in the UK and Infrastor in Germany – alongside its earlier US expansion through Zero-In – Trison has moved closer to becoming a truly global integrator. The rollout of a unified brand, standardised offerings, and a common service catalogue marks a significant step toward industrialising large-scale digital signage integration across regions.

Vertiseit remained the most active consolidator in the sector. The Swedish group added two German companies – MDT and Muse – as bolt-on acquisitions to its Nordic portfolio. Together with Visual Art, these transactions doubled the group's size to around \$71 million in revenue within less than a year, underlining the continued ambition of the publicly listed company, backed by strong private equity support, to execute disciplined buy-and-build strategies.

On the software side, Navori's acquisition of UK-based Signagelive represented a landmark deal for its private equity owner Maguar. Scandinavia and Benelux also remained consolidation hotspots. Playipp acquired Norwegian competitor Databeat, Zetadisplay re-entered the M&A market with a small bolt-on acquisition of Ubiq in Swe-

den, and Smartsign was acquired by private equity firm Standout Capital.

In Benelux, DGT Group, formerly Digitopia, emerged as the most active consolidator, acquiring NFGD and TSS to further strengthen its regional presence. France also saw horizontal consolidation, with workplace experience specialist Comeen being acquired by Lumapps – reflecting the growing overlap between digital signage, employee experience, and internal communication.

North America

Across the Atlantic, deal sizes increased both strategically and financially. Creative Realities (CRI) crossed a psychological threshold with the acquisition of Cineplex Digital Media, pushing group revenues beyond \$100 million and reinforcing its position as a scaled North American integrator and managed services provider.

Another noteworthy strategic move was Poppulo's acquisition of Reach. The enterprise-focused communications and digital signage platform deliberately added a long-tail-oriented software and integration business – a rare example of consolidation bridging the gap between enterprise and SMB segments. Israeli ISV Novisign pursued a similarly opportunistic approach by acquiring the US customer base of a West Coast digital signage integrator exiting the software market.

Global players

Global service providers continued their steady, methodical expansion. Ricoh, Forté, Diversified, and AVI-SPL all pursued ongoing acquisitions and greenfield expansions to strengthen global delivery capabilities. Forté remained consistent with its strategy of acquiring GPA partners seeking exits, while Ricoh continued to broaden its multi-technology portfolio, enabling the Japanese IT group to serve additional markets with its own teams on the ground.

At the manufacturer level, the most significant developments were announcements rather than completed deals. TCL announced a joint venture with Sony, while Skyworth revealed a similar partnership with Panasonic – signalling a broader realignment of the global B2B display market

from 2027 onwards. Major Chinese display manufacturers are preparing to take majority stakes in the B2B display businesses of two long-established Japanese industry pioneers.

At the same time, market exits highlighted mounting pressure on mid-tier vendors. Vestel withdrew its own B2B-branded display offering to focus entirely on contract manufacturing – a clear signal that scale and differentiation are now prerequisites even in hardware.

Outlook: An industry growing up

The consolidation trend shows no signs of slowing. Digital signage is no longer sold as a standalone technology, but increasingly as part of managed service portfolios, workplace platforms, retail infrastructure, and media networks. Capital strength, geographic coverage, and the ability to deliver predictable services at scale are becoming decisive competitive factors.

Acquirer	Target
AVI-SPL	ICAP Global (AR)
Creative Realities	Cineplex Digital Media (CA)
Daktronics	X Display Company (US)
Econocom	Avanzia (ES)
Econocom	ICT (DE)
Econocom	Image Supply Systems AV (IE)
Econocom	Smartcomm Asset Deal (UK)
Lumapps	Comeen (FR)
Maguar Capital (Private Equity)	Navori Labs (CH)
Navori Labs (Maguar)	Signagelive (UK)
Novisign	Non-disclosed Integrator Asset Deal (US)
Playipp (via Monterro)	Databeat (NO)
Poppulo	Reach Media Network (US)
Standout Capital (Private Equity)	Smartsign (SE)
Stratacache	SNED (FR)
Trison	Pioneer Group (UK)
Trison	Infrastor (DE)
Vertiseit	MDT (DE)
Vertiseit	Muse Content (DE)

Selection of M&As over the last year

CYBERSECURITY

Time to Take Ownership

As public visibility for the industry grows, so does the risk. With multiplied threats and connected ecosystems, IT security must be treated as an operational cornerstone of modern digital signage.

Florian Rotberg

For many years, cyberattacks were mostly random: viruses, simple malware, and opportunistic hacks. Even then, the cost of major incidents was severe – on average \$4.5 to \$5.5 million in direct and indirect losses.

But today's attacks bear little resemblance to those of the past. AI has become a force multiplier for them: they are fast, cheap, automated, highly sophisticated, and hyper-personalized.

"This is a different world," says Pere Ferrer, former Director General of Police for the Government of Catalonia and today Security & Cybersecurity Advisor of ISE. "Threats have multiplied, and the speed of change has accelerated dramatically. The AV industry is moving into increasingly sensitive domains, significantly expanding the attack surface and multiplying potential entry points for attackers."

Digital signage and ProAV are now woven into control rooms, factory floors, transport hubs, and public-sector service environments. That shift brings new responsibility.

"The convergence of AV and IT/OT – combined with increasing physical security requirements – is reshaping our risk landscape," says Ferrer. This challenge goes far beyond protecting digital assets. "We must build organizational resilience. If you're not able to provide operational continuity, critical data may be leaked and essential services may be compromised."

Hybrid attacks more common

A recent attack on a multi-user airport operations platform illustrates what is coming. The target was part of a critical infrastructure environment – but not its main system. Attackers instead exploited a secondary, business-critical application. It was still enough to disrupt operations and expose systemic weaknesses. Hybrid attacks, mixing physical and cyber elements, further complicate defense efforts.

Western societies, and the digital signage industry in particular, must recognize that they are operating in a structurally unstable global environment. Cybersecurity awareness must be elevated across the entire value chain.

Businesses must become resilient – not only against cyberthreats, but also against vulnerabilities regarding suppliers, partners, and technologies. "Threats are multiplying," Ferrer emphasizes. "It takes a handful of coordinated solutions to defend against them."

An active approach

Cybersecurity, therefore, cannot be an optional add-on or a last-minute compliance badge. It must be designed into every layer of digital infrastructure from the beginning.

The digital signage sector, partially deeply embedded in enterprise IT environments, must operate

as a full participant in this new security reality – and must actively take ownership. “Technology is often weak – we ourselves must be the solution,” says Ferrer.

For digital signage organizations, this means:

- Compliance from the start, e.g., with ISO 27001
- Continuous testing of platforms, services, and infrastructure.
- Regular, realistic training for employees to identify weak points
- Constantly updated scenarios, because attacks evolve faster than annual audits

On-premises systems in particular suffer from weak accountability. Integrators and ISVs often install the solution and leave maintenance to the customer. But this hands-off approach is no longer

viable. Security demands expertise, urgency, and clear ownership. Blaming the customer after an incident won’t hold up – reputational risks will inevitably point back to the vendor.

The solution? On-premises setups must come with comprehensive service packages, ideally structured as managed services contracts. Anything less leaves too much room for error.

Closing the gaps

Take one example: a major digital signage software update requiring a 700 megabyte patch for each display player before server updates could be applied. In networks with thousands of screens, that’s unmanageable. Time, bandwidth, and administrative strain mean many servers simply won’t be updated – leaving vulnerabilities wide open.

To its credit: the vendor offers a modern and very





Security must be integral part of every software application. (Generic Image)

competitive secure cloud-based CMS with continuous updates. But customers cling to on-prem licenses, drawn by appealing pricing. Until the industry embraces managed services and makes cybersecurity manageable, these gaps will persist.

Digital signage must accept that a higher threat level is the new normal. Robust technology, secure architectures, and an aware organization are no longer differentiators – they are minimum requirements.

Update the Updates!

The IT world is accelerating – and digital signage is being pulled along with it, whether the industry is ready or not. In cybersecurity, the mantra has long been clear: updates can never come fast enough.

But what feels natural in consumer IT often collides head-on with the realities of B2B. Digital signage platforms are not simple browser endpoints; they are considered “complex and very unique” ecosystems.

It is therefore no surprise that many B2B operators default to long, conservative update cycles. Yet, this caution comes at a price. In digital signage, extremely long intervals – sometimes one to two years for SoC platform updates – have become the norm.

But digital signage cannot remain an island with multi-year refresh intervals while the rest of IT moves in monthly or bi-weekly rhythms. The update cycle must accelerate.

This doesn't mean blind adoption of consumer patterns. B2B will always require stability, staged deployments and verification pipelines. But extreme caution can no longer be the default. The industry must evolve toward structured, regular, IT-aligned update processes.

The industry's most trusted network — *built for everyone* with a stake in signage.



The Digital Signage Federation is the independent, member-led association connecting end users, integrators, vendors, and influencers across the Americas. We bring the entire industry together to learn, connect, and grow — through education, recognition, and unmatched access.



270+

MEMBERS
& GROWING

34+

CERTIFICATION
COURSES

15K+

MONTHLY
IMPRESSIONS

100%

INDEPENDENT
& MEMBER-LED

WHAT MEMBERSHIP DELIVERS

Showcase

Mix & Mingles, regional events, and the Pixel Awards put your work in front of the industry.

Access

Trade shows, the Speakers Bureau, member directory, and direct lines to decision-makers.

Educate

34+ certification courses, DSEG, and industry experts to sharpen your team's expertise.

Recognize

Amplify your message and earn project, company, and member spotlights across our channels.

GLOBAL SOFTWARE RANKING

Platforms and Power Shifts

The global digital signage software market is entering a new phase – as the global ranking of licenses shows. Scale, ecosystem control, and platform depth now matter more than sheer license counts.

Florian Rotberg

The invidis global software ranking reflects a market shaped by consolidation, verticalisation, AI disruption, and – increasingly – the strategic ambitions of large technology corporations.

At the top of the ranking sits a new leader: Samsung. With VXT CMS and VXT RM, the Korean manufacturer has moved decisively beyond hardware into platform ownership. Rather than positioning VXT as a closed ecosystem, Samsung is recalibrating its strategy to attract ISVs and integrators with their own software stacks. By combining deep Tizen integration, robust remote management, and certified security, Samsung offers software vendors access to its global installed base – a powerful proposition for IT-integrators and new digital signage systems integrators in an otherwise fragmented landscape.

Stratacache remains one of the most complex players to assess. After more than forty years of Scala and additional platforms such as PRN, RDM, and X20 Media, total license sales likely number in the millions. However, active licenses are significantly lower. The 2025 ranking does not yet fully reflect the liquidation of Real Digital Media and Barco-acquired X20 Media platform in spring 2026. Strategically, Stratacache has shifted from CMS toward data, engagement, and retail media – a move that complicates traditional software metrics.

One of the most significant shifts in this year's ranking is Navori's rise into the global top three,

following the acquisition of Signagelive. Unlike Samsung and Stratacache, Navori operates strictly channel-only. This positioning makes it the world's largest pure software vendor without direct end-customer sales – an attractive model for integrators. With active licenses approaching the one-million mark, Navori has quietly become a cornerstone of the global partner ecosystem.

Uniquet reflects another dominant trend: verticalisation. Over recent years, the company has consolidated its diverse portfolio into cloudbased, vertical-specific platforms spanning digital signage, IPTV, and personal devices.

Markets such as hospitality, healthcare, stadiums, and senior living require much more than CMS functionality. Uniquet bundles signage with operations, communications, and engagement tools – a reminder that in many verticals, "digital signage" is only one layer of a broader solution.

One of the fastest-growing segments globally is corporate enterprise, where Employee Experience Platforms and Workplace Experience Platforms converge. The most prominent player is Poppulo, followed closely by Appspace, Korbyt, and Lumapps, which strengthened its position through the acquisition of French digital signage ISV Comeen. These platforms gained momentum during the pandemic by tightly integrating with unified communication tools such as Microsoft Teams, Zoom, and Google Meet, monetizing screens idle between meetings.



Global Ranking Digital Signage CMS 2026

invidis.com

1M+

1M+
LICENSES

1. Samsung
(Magicinfo, VXT)
2. Stratacache
(Scala etc.)

500K+

500K+
LICENSES

3. Navori Labs
4. Uniguest
5. Poppulo (incl. Reach)
6. LG CMS
Cloud Solutions

200K+

200K+
LICENSES

7. Broadsign
8. Vertiseit (Grassfish,
Dise, Visual Art)
9. CRI (Reflectview, Clarity)
10. Yodeck
11. Brightsign
12. Appspace
13. Optisigns
14. NDS (PADS4)

100K+

100K+
LICENSES

15. Telelogos
16. Xibo
17. Spectrio
18. Screencloud
19. Easescreen
20. Visix
21. Korbyt

<100K

LESS THAN
100K LICENSES

Cenareo
Deneva
Intuiface
Korbyt
Novisign
Nowsignage
Nsign
Raydiant
Revel Signage
Smartsign
Wallboard

(Selection, in alphabetical order)



INTEGRATOR-
EXCLUSIVE CMS

Coates
Iagona
M-Cube
Mood Media
Sia Interactive
Trison
Zetadisplay

(Selection, in alphabetical order)

Note: The invidis Software Ranking 2026 refers exclusively to active licenses. Even if the calculation is significantly more complex and may deviate from the previously published figures, this is a realistic reflection of market developments.



Photo: invidis

Movement in the engine room: Software tech stacks will change due to AI.

Competition in this space is intensifying. Larger platforms are diversifying, while depth is increasingly challenged by breadth. Poppulo's acquisition of Reach is a notable strategic pivot, adding long-tail and channel-focused capabilities to an enterprise-centric offering. Based in Denver, Poppulo has signaled that further acquisitions are likely.

In DooH, Broadsign reached a milestone with the acquisition of Place Exchange – its largest transaction to date. While revenues increased substantially, the deal did not materially change Broadsign's installed license base. Instead, it strengthened the platform's position across planning, transaction, and programmatic execution, underlining Broadsign's evolution from CMS vendor to infrastructure provider for global DooH ecosystems.

Directly behind Broadsign sits Vertiseit, Europe's most acquisitive digital signage software group. The Swedish company is often the first bidder when software vendors come up for sale. Its stated ambition is clear: reaching SEK 1 billion – these are \$103 million – ARR by 2032. The strategy is built around continuous acquisitions – typically two to three per year – combined with two business pillars: integration and channel. If current growth continues, Vertiseit is set to surpass 500,000 active licenses in the next two to three years.

In North America, Creative Realities (CRI) mirrors Vertiseit in visibility and ambition. The acquisition of Cineplex Digital Media significantly ex-

panded CRI's integration footprint and provided scale to roll out proprietary platforms such as Reflectview and Clarity. Fellow US specialist Spectrio also stands out, having unified more than fifteen acquisitions into a single AI-driven platform, distributed with focus on channel partners.

Two European players punching above their geographic weight are Yodeck and Screencloud. Built on modern cloud-native tech stacks, both have found strong traction in North America, reflecting endcustomer demand for simplicity, SaaS economics, and rapid onboarding.

Despite these leaders, the digital signage software market remains crowded. A "good enough" CMS is relatively easy to build – but day-to-day reality quickly separates wheat from chaff. Integration with backend systems, open APIs, IT-security certifications, and scalable cloud operations are now mandatory. Legacy platforms on outdated tech stacks increasingly struggle to win new customers, even though high switching costs allow them to survive for years within existing installations.

AI and the next software shift

AI is now reshaping software requirements. A modern tech stack, compatibility with leading OS platforms, open APIs – and soon MCP interfaces for AI integration – are no longer differentiators, but prerequisites. Attractive user interfaces remain essential, yet AI-driven tools dramatically lower the barrier for UI customization, shifting competitive advantage back to platform architecture and scalability.



Digital signage software needs more women – an image change would help.

WOMEN IN SOFTWARE

Coding Was Never Cool – Until It Was

The stereotype of the lone male coder persists. But AI, vibe coding, and a new generation of developers are changing the job's image – and could make women coders the future pillars of digital signage software.

Antonia Hamberger

When thinking about a career as a software developer, women are often deterred by the image forming in their minds: the stereotypical male loner typing away all day without speaking to a single soul. But when you meet the occasional female developer, that image is quickly crushed. Seeing how passionately they build solutions; you cannot help but see them as role models.

When young women arrive at the point in their lives where they have to choose a career, they often opt for marketing or sales roles to start climbing up the corporate ladder, not about product development. Engineering teams have been heavily male dominated ever since computers existed. In the digital signage industry and many other fields, they still are today.



Behind a typical digital signage CMS platform, the share of women usually sits between 6 and 18 percent. A remarkable exception is the Sweden-based CMS company Dise, where the software team consists of 30 percent women – and the three core engineers are all female. These figures stem from a small-scale invidis survey of software providers in Europe and the United States.

Diverse teams = better solutions

Across the broader tech sector, most statistics show that women make up around 22 to 25 percent of software engineers – and about 35 percent of tech roles overall.

James Hart, Global Head of Marketing at SignageOS, sees a lot of untapped potential here. Getting more women into technical roles like coding is not just about diversity, he says – it is about innovation and scale. Hart's experience in the tech world – including leadership roles at Blackberry, Jabra, and AVG – has shown him that “the most robust solutions come from teams that reflect the diverse global markets they serve.”

Hart considers the academic “pipeline” for women entering developer and engineering roles in

Europe to be the biggest bottleneck: Graduation classes in computer science and other related fields are about 70 to 91 percent made up of men in the EU.

Carolyn Voelkening, Chief Delivery Officer at Appspace, agrees that diversity has a direct impact on product quality and long-term growth. “In product and engineering, small decisions compound. Who we hire influences how we design, prioritize, and test. When women are part of that process, we see broader thinking and fewer blind spots.”

Action must follow the mindset change

The willingness to hire female developers and product managers is certainly there. Some digital signage companies, such as the Cologne-based firm Dimedis, even say they give preference to women over male applicants when qualifications are equal.

Quotas for women remain a controversial topic for many. But they are only one of several measures companies can take to attract more women. They also stem from the realization that fostering



a workplace culture that accommodates women's needs has long been neglected, as James Keen, EVP Marketing at Uniquet, flags:

"Encouraging women into software engineering and coding is a long-term challenge. Historically, we have not done enough as an industry to solve the problem, and we see the effects today in our staffing levels." Awareness of a problem, he says, is only step one; identifying positive action is a responsibility we all share.

From quotas to Swiftie days

Beyond quotas, companies are introducing a range of initiatives. Appspace, for example, has an internal group called Athena – standing for Advocate, Transform, Humility, Empower, Nurture, and Authenticity. The group aims to create a supportive and empowering space for women across the organization.

Smaller companies are taking their own approaches. Dise, for instance, has hosted a "Swiftie day" in the office to celebrate the release of Taylor Swift's latest album. Of course, not every developer has to become a Swiftie – but it's a good example of how more diverse teams can shape company culture, fostering collaboration, connection, and a stronger sense of belonging.

The role of software developers is also changing dramatically. A growing share of the development cycle now relies on AI-assisted development and "vibe coding" – that is, generating code through prompts. This requires a different skillset than traditional, manual programming.

According to James Hart of SignageOS, tech roles are increasingly centered on high-level multi-tasking and cross-functional coordination – areas where women have historically excelled. SignageOS therefore sees strong potential in placing such transformation initiatives in the hands of female team members and offers training in AI-driven management and advanced motion graphics development.

It may sound a bit superficial, but vibe coding and AI-assisted development suddenly make the profession feel much cooler. Today, every university graduate wants to be as AI-savvy as possible – to understand the technology well enough not to be replaced by it. If software firms help young people achieve those qualifications, it could help spark more interest in software careers among women.

For the digital signage industry, this can only be a positive movement: it needs more young talent. And this shift in perception could give rise to a new generation of ambitious female developers.

The young woman's perspective on coding

German software firm Dimedis has three women in its development team – all exerting great enthusiasm for the job. Here's what Maren Seufert, Process Coach & Product Owner at Dimedis, has to say:

"What excites me about development is diving into complex problems and actively shaping solutions. By asking the right questions, challenging assumptions in a structured way, and bringing in different perspectives, we build a shared understanding that leads to solutions with real impact. The tension between fuzzy ideas and precise execution constantly brings new challenges – and that's what keeps it exciting."



Maren Seufert, Process Coach & Product Owner at Dimedis

PETER CRITCHLEY

“Don't Sell Screens, Solve Problems”

The art of contextualising and the potential of managed services: Peter Critchley, Trison's UK CEO, talks about the magic of digital signage and what has changed in the industry in the last 30 years – and what hasn't.

Florian Rotberg

Peter Critchley is a veteran of the European digital signage industry and is regarded as one of the sector's most respected figures. He has played a pivotal role in advancing large-scale signage deployments, experiential design, and the industry's professionalization, especially in the UK, where he worked for many years as Co-Founder and CEO of the Beaver Group. When European

leader Trison acquired Beaver in 2019, he continued to shape the UK digital signage landscape as UK CEO of Trison. His latest achievement was the integration of the UK-based Pioneer Group, which Trison acquired in late 2025.

As a result, Critchley was honoured as the Outstanding Individual of the Year by the Digital Signage Awards in 2026. invidis sat down with him to discuss the developments that have shaped the digital signage world over the last few decades and what makes the industry so unique.

Florian Rotberg: Peter, how long have you been in the industry?

Peter Critchley: I've been in this industry for 31 years. In 1995, I left school and went straight into my first job as a support engineer at Scala UK. The subsidiary was run by Barry Thurston who was previously Technical Director at Commodore UK. When Scala closed the UK business in 1998, we started what became known as Beaver Group, which is now Trison UK.

Tell us a little bit about those days. What was digital signage when you started?

It was an exciting time – innovative, creative, groundbreaking – and it provided something people had genuinely never seen before; Computers playing content that you could create and manage in real time yourself, generating your own 'computer TV channel' – what a brilliant specta-



More than 30 years in the digital signage industry: Peter Critchley, UK CEO of Trison

cle that was! It truly changed the way content was delivered in physical spaces forever.

What were the first important verticals?

For us, corporate, government and cable TV is where we saw the most demand. A lot of our early customers were government agencies that wanted to communicate to the public in spaces as well as in their offices. Cable TV was also a big deal, with a very fragmented market, with a need for 'community channels', which we serviced across the country.

How would you win them over for digital signage?

Winning over an organisation for digital signage in the late 90's meant turning up and showing them something they'd genuinely never seen before, and we quite literally had to carry that 'something' in ourselves.

We'd arrive at client demos lugging a 42-inch Philips CRT with an embedded PC – I think Scala called it the PD100. What I can swear to is the weight of the thing – essentially a Philips telly with a PC built into it, it weighed an absolute ton. You'd manhandle it into the boot of the car, haul it out at the other end, and wrestle it through the door before anyone had even offered you a cup of tea. But the real impact came when we switched it on. Seeing animated content and instantly updated information – via serial cable – changed the conversation entirely. Centralised message management, even using dial-up modem, meant no more outdated notices or neglected whiteboards. The benefits were clear as soon as people saw the system. The real challenge wasn't convincing clients, it was moving the kit around!

How has the industry changed in the past 30 years?

In terms of technology, beyond recognition. We've gone from hauling CRT displays into meeting rooms to cloud-managed platforms, 4K content, super-fast connectivity, fine-pitch LED walls, transparent screens, and real-time data integration and support. The infrastructure is unrecognisable. But the conversation? That's barely moved. The real value in digital signage has al-



The first office of Beaver, which became later Trison UK

ways been contextual – the right message, to the right person, at the right moment. That phrase might be a cliché, but it's where the return on investment lives, and it's what separates a 'screen' from a digital moment in time that performs its task imperceptibly, and adds value. It's not a widely nor practically understood concept, even today. Thirty years on, the technology has transformed. The mindset, arguably, still hasn't caught up.

Are you saying that digital signage is still finding itself?

What excites me about this industry is that the opportunities are as wide open as they've ever been. Anyone in this space, with the right approach, can still deliver enormous value, but only if you think like your client thinks.

Could you give us an example?

This industry still installs digital menu boards which use static images or videos, as they consider the screen to be the operational driver and content to be generally a replication of print. An effective digital menu is totally dynamic: Dayparted content reacts to stock levels, and adjusts its relevance over time, promotions react to weather and all of this is linked to centralised E-POS data. That's where true value is. The mistake is leading with technology, talking about deploying 1,000 screens or selling 1,000 licences. That's the wrong conversation. Focus on solving the genuine business problem, demonstrate clear value, and the scale takes care of itself. Clients don't need convincing to expand something that's working.





Barry Thurston and
Peter Critchley in 2003

Photo: Private/Peter Critchley

But how do you get the message across?

Back in the mid-90s and through the 2000s, I was an Evangelist. I wasn't selling – I was spreading the good word, promising a vision of what was possible and encouraging people to believe we would deliver that vision. And many did believe, which I'll always be grateful for. But evangelism only gets you so far. At some point, you have to move from inspiration to evidence.

So, how did you move?

The shift happened in the early 2000's, when we stopped leading with technology and started leading with outcomes. Instead of showing someone a screen, we would listen, and show them their problem being solved. Clients don't care about display specifications; they care about their campaigns updating instantly across every location or prices updating centrally. They care about the staff hours saved, the printing costs eliminated and verified consistency across multiple sites. I realised that demonstrating value would change everything. It was clear that focusing our business on problem solving with the right content and the right context would change the conversation completely. Clients stopped questioning "why should we do this?" and started pressing "how quickly can we roll this out?"

Where do you see the most potential right now?

Managed services are now central to the solutions we design. It's the grown-up version of problem solving! Clients now understand that digital signage isn't something you can deploy and forget following an RFP, especially when millions of pounds of investment are at stake and their brand is on public display every hour of every day. Get

it wrong, and it impacts negatively in numerous and significant ways. Get it right, and it becomes one of the most powerful tools for engaging audiences and driving the business. Clients have come to realise that digital estates live longer than the internal teams which procure them. This is persistent infrastructure which drives footfall, influences purchasing decisions, and directly affects the P&L. Once a client sees it in those terms, the managed service conversation becomes critical to the long-term objectives and success criteria of the business.

Where are the challenges?

The industry now probably suffers from too many options, and too many components – screens, software, media players, et cetera. There are too many variations on the same theme that miss the point: That this is about solution planning, working with a partner who buys into what you're trying to achieve as a brand for the long-term and will be there by your side as you deploy it.

What about operational stability and IT security. What role do they play?

Cybersecurity is no longer a footnote in a tender document. It's front and centre. The majority of procurement processes we're involved in now have explicit security requirements baked in from the start. And that's entirely appropriate, a network of screens deployed carries the same exposure and demands the same rigour as any other part of a business. The problem is that much of the industry still doesn't fully recognise that, or really understand how to address it. Digital signage has historically been treated as a facilities or marketing concern, sitting outside the IT governance framework. But the moment you connect a screen to a corporate network, and increasingly to live data feeds, payment systems, or customer-facing interfaces, you're in IT security territory whether you like it or not.

Why is this so hard to adapt?

Industry fragmentation is the core problem. Screen vendors, LED manufacturers, media player suppliers, software platforms, and ecosystem providers like Google and Microsoft are all operating in their own lanes, speaking their own lan-

guages. A screen vendor will talk about locked-down hardware. A kiosk manufacturer will point to their operating platform. A software provider may outline their security architecture. But not enough people are talking about the whole system – and in a networked deployment, the whole system is what matters. A vulnerability anywhere is a vulnerability everywhere. Very few companies have the appetite to understand the full stack and take genuine end-to-end responsibility for it. The industry evolved through specialisation, and nobody was ever incentivised to own the bigger picture. I have always believed we have to put our hand up and say, “we’re accountable for all of it” – that’s true managed service.

You mentioned big companies like Google or Microsoft. Do you think they will become the dominant industry players?

It’s not as big as AI, so digital signage is probably never going to be their priority! This has always been an enterprise solution space, and I think

that’s a particular set of skills, forged in the fire of experience. Customers want a single responsible partner, who is invested in their success for the long term. That truly matters, and it’s what drives me. I think Google, Microsoft and other very large eco-system providers will remain critical to successful deployments, but they will also always rely on the specialists.

So what is the secret sauce for a successful sale?

The secret sauce? You have to be able to deliver it all, with unparalleled excellence. Stop selling screens, start solving problems.

Let’s get more details: What do you need to do?

You have to be able to consult with knowledge. You have to be able to design with experience. You have to be able to implement with expertise. You have to be able to manage it with assurance. And then you need to be able to iterate for change in the future. Get all of that right, and you’re cooking!



Peter Critchley on the Digital Signage Awards Night 2026, together with the Trison team and the borrowed trophy from Dave Haynes



Peter, what do you like most about the industry?

I really love the people who are in it – I love going to ISE in Barcelona, I love going to DSS in Munich. I love spending time listening to the various journeys that people are on. And the great thing about this industry is that so many people stay in it. It's a fascinating space to work because it's ever-changing and attracts innovative people. I feel very privileged to be part of it, to work with incredibly talented people at Trison, and to still be as excited as I was when I first walked into Scala UK's offices.

And on the business side?

It is the reward at the end of a project deployment, when you see people experiencing what you designed. In physical spaces, our project deployments are like a digital architecture. You have all these components like screen hardware, software, analytics, content, and sensors, and then you add our amazing team, and they create something that means so much more. Watching people play with carefully designed interactive surfaces and have fun is truly magical. It's really great because we tap into a core part of human nature that

gets forgotten on a mobile phone or a laptop – to have physical experiences. It reminds people that their being matters in a physical space, even in a digital world.

Do you have an example for this?

Some time ago, we created an interactive experience for Foot Locker. It was an algorithm-based multiple choice basketball quiz. It had an LED interactive floor and a curved LED screen in front of you. When you completed the quiz, you had the chance to shoot a hoop. The way you did that was by simply stepping on a big round circle on the interactive floor. It never occurred to me that people would jump like they would when shooting a real hoop, but of course they did! I watched countless people carefully considering how they're going to jump, and I loved the way that they projected all this intelligence of their process onto this interactive floor – that it would know how they were jumping, that it would decide if they jumped the right way, that they'd got the trajectory of their arm the right way. It was amazing to observe, and I was really struck by it.

Why exactly?

It reminded me that the use of digital spaces is one of the most fascinating parts of what we do, and whether that's changing something because someone's in the space – whether that's lighting, or the motion of them passing, or whether it's the fact that it's afternoon and changing the content to say 'good afternoon.' This is something high-end hotels worked out a long time ago: they change the lift or entrance rug so it says 'good afternoon' or 'good evening', which adds meaning and context to your experience in a simple but entirely engaging way. We try to create these accessible moments in everything we do.

So it's all about contextualising things?

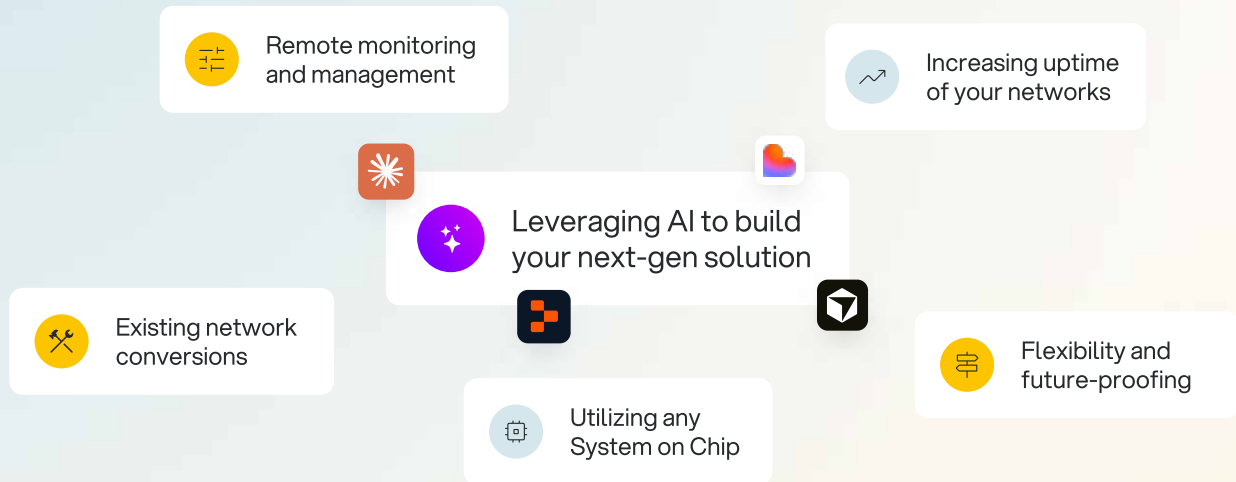
Yes, and context is such a basic human moment. I love to contextualise experiences to the place and the people. That could be through interactivity, content, or space design, but making it generate something that could only happen in that space digitally, in that moment, is really something magical, and I hope I continue to be a part of it for many more years to come!



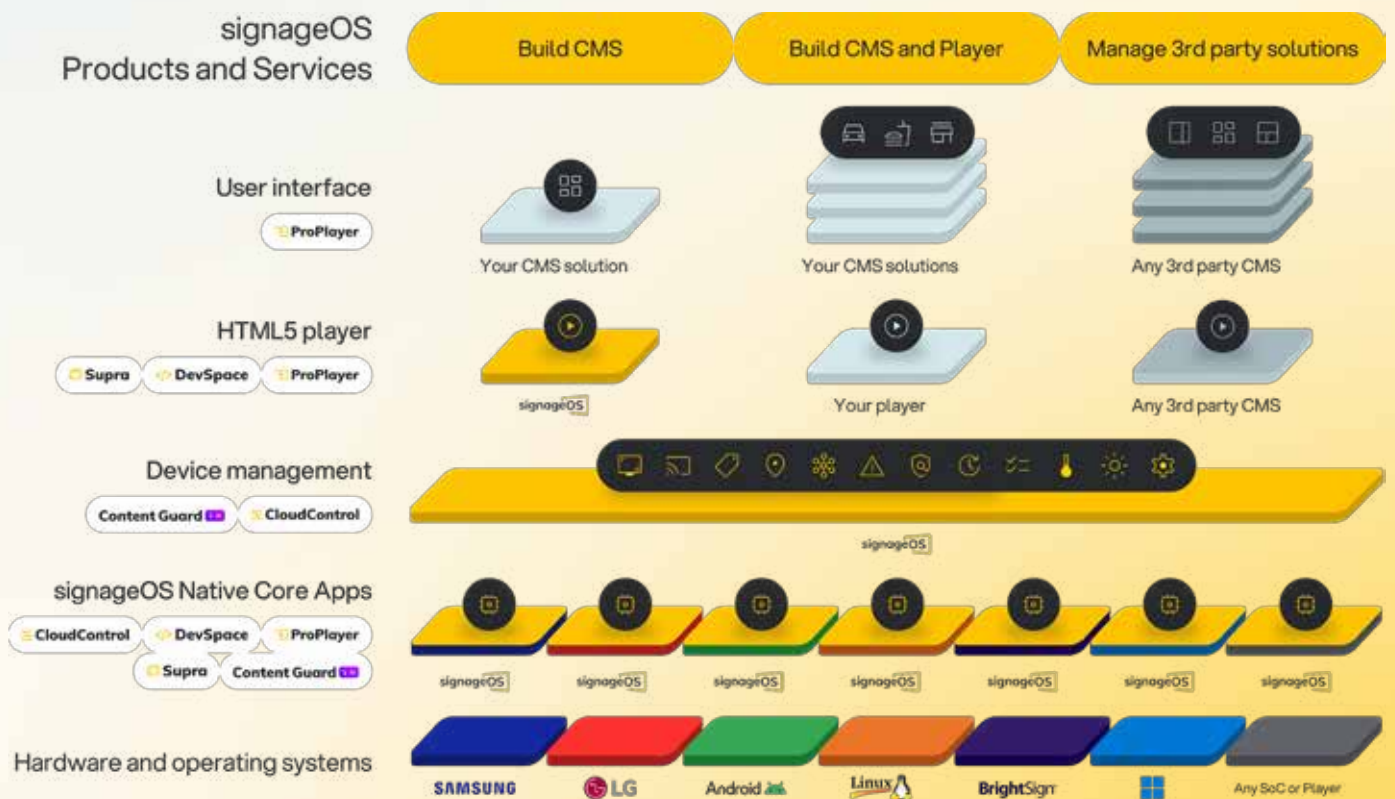
A prime example for the fascination of digital spaces: The Foot Locker experience

Flexible infrastructure and the best digital signage platform for:

signageOS



Your next-gen digital signage stack



Book a demo now!

You come in with questions and leave with a plan.



Get a 30-day free trial

Try it with your own screens, your own setup, your own team.

signageos.io

sales@signageos.io

RDM & MANAGED SERVICES

A New Era for Managed Signage

Remote device management is a key service for modern digital signage integrators – and a part of a holistic managed signage approach, which will be dominated by IT service providers.

Balthasar Mayer & Florian Rotberg

Already a central topic for the industry last year, the relevance of full-service approaches regarding remote device management (RDM) remains undiminished in 2026. As digital signage becomes business critical. Expectations rise accordingly – every minute of downtime costs time, money, and reputation.

Stan Richter, CEO of RDM software specialist SignageOS put it best at DSS ISE: “What was acceptable two years ago is unacceptable today”. RDM is now a non-optional asset even for middle-sized digital signage networks.

Few integrators have embraced this as fully as Netherlands-based First Impression. The international player touts an uptime of 99 percent for its digital signage solutions.

For this, First Impression relies on its own Network Operations Center (NOC), which continuously and proactively monitors all installed systems. This involves monitoring temperature, CPU load, and other metrics, and replacing the screen in a timely manner if necessary. The company uses also AI tools that reliably detect potential issues in customers' digital signage networks at an early stage. Overall, First Impression manages more than 40,000 devices from its operations center.

For services like this, RDM has to be more than a status flag in the CMS software. Sophisticated RDM capabilities include the abilities to remotely view, control and change the display setup, while

also being able to find the cause for a malfunction and to deliver data for deeper analytics.

IT companies stepping in

The central role of RDM is part of a bigger shift: Managed services are replacing traditional roll-out structures, especially on a global level.

While spanning a breadth of complex functions, it is important to note that RDM is just a tool that needs to be integrated in workflows and processes. While many things can be done remotely, and with AI even without human intervention, managed services need onsite capabilities as well.

So it is no surprise that major IT service providers of the likes as Econocom, CDW, ATEA, and Computacenter are entering the ProAV space. With billions in revenue and mature managed service infrastructures, they're well-equipped to offer end-to-end workplace and digital signage solutions. Their presence further raises the bar for traditional AV integrators.

The days of relying on local integrators for global roll-outs and services are over. What's needed now is a global service catalogue – covering everything from AV lifecycle management to remote monitoring and on-site support – with maximum IT security baked in.

Enterprise customers now expect intelligent automation, predictive maintenance, and sim-

plified user experiences – all delivered through AI-enhanced platforms. The investment required to meet these expectations is massive, and only globally positioned MSPs can deliver at scale.

"We need to reach profitability where AV and signage actively increase value creation", says Borja Janariz, International Sales Director at ProAV Giant Econocom, which wants to conquer the European digital signage world with the scale approach (see also page 90).

The bigger shift

In general, the ProAV industry is undergoing a fundamental shift – from selling solutions to delivering ongoing experiences. Whether it's digital signage or enterprise collaboration, customers want managed services that are scalable, secure, and smart. This shift is reshaping the competitive

landscape. The future belongs to those who can combine scale, intelligence, and service excellence – not just in boardrooms, but across every screen and every space.

This doesn't mean that pure-play digital signage integrators cannot compete for bigger roll-outs. But they need the expertise to satisfy the rising demands of the customers. Managed services will be essential for integrators going forward; particularly for large-scale deployments, but also as a cornerstone of delivering consistently high-quality solutions.

However, managed signage does not happen by itself. Companies must invest in specialist talent and allocate sufficient resources. A half-hearted managed services approach will no longer be viable. Integrators need to step up their game – like First Impression.

OUR SYSTEM INTEGRATORS ARE THE BEST

WWW.CONCEPT.BIZ

THANKS!

Giada



TRUST
THE
MARKET
LEADER

GIADA Digital Signage Player
Windows, Android, ChromeOS

FUTURELED



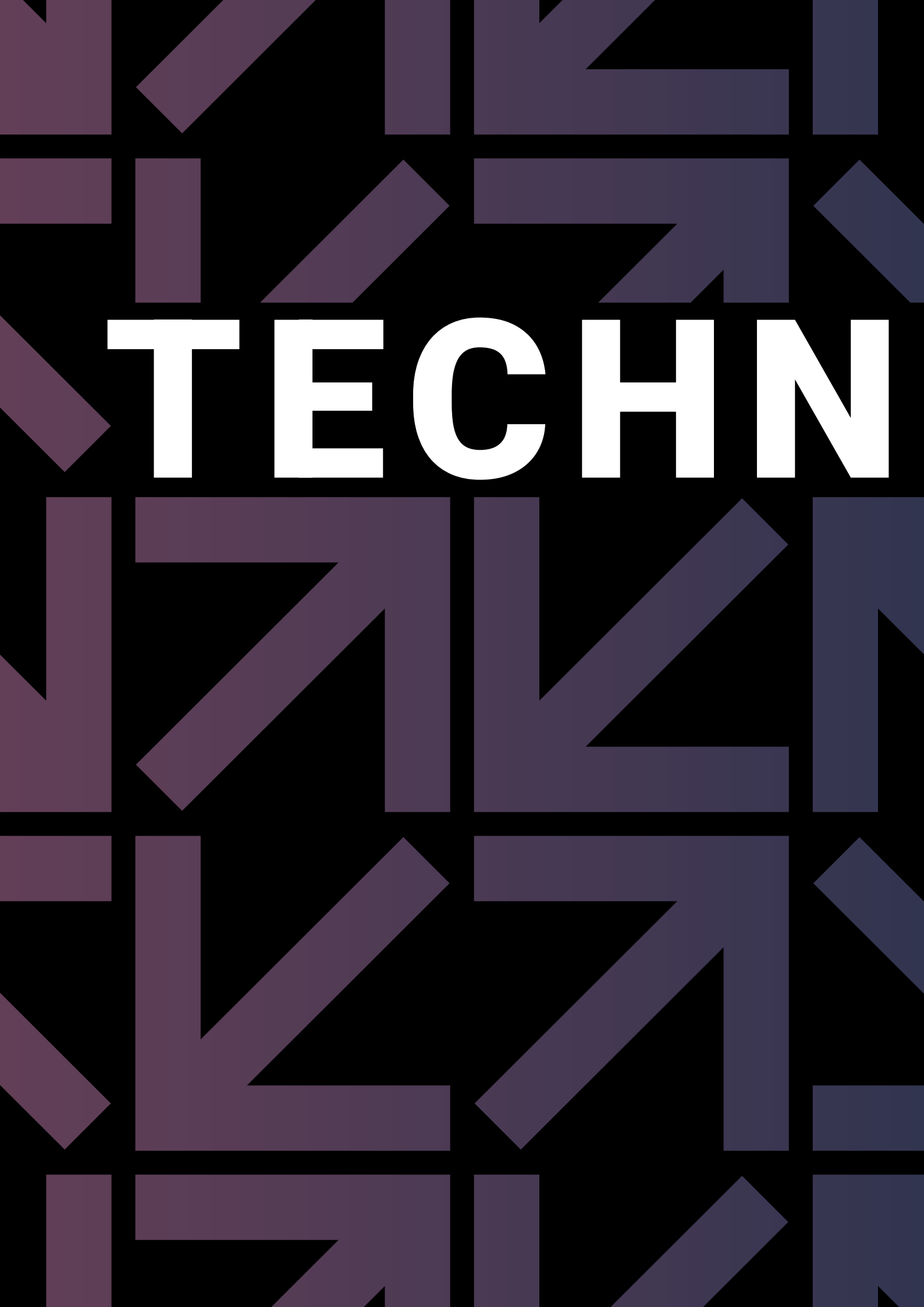
FutureLED
Proven Video Walls

FUTURESIGN • Qbic



FutureSIGN
Room Signage

- The widest selection of digital signage players and PCs: from entry-level to high-performance
- Innovative LED wall technologies: Behind-glass mounting – Curved surfaces – Double-sided
- Room signage and wayfinding systems: Featuring Wi-Fi & Bluetooth, elnk, ePaper Color & more
- **NEW:** Outdoor signage PCs, SMARC-motherboards, and POS displays

The background of the image is a black field filled with a repeating pattern of abstract, geometric shapes. These shapes are primarily L-shaped and rectangular, rendered in various shades of purple and blue, ranging from a deep, dark purple to a lighter, dusty blue. The shapes are arranged in a way that creates a sense of depth and movement, with some shapes appearing to overlap others. The overall effect is a modern, tech-inspired aesthetic.

TECHN



OLOGY



LED & MICROLED

Faster, Better, Cheaper

New technologies are pushing LED and MicroLED displays into the next phase: COB, COG, and flip-chip promise improved image quality and lower costs. At the same time, standardized solutions enable faster deployment and setup.

Balthasar Mayer

Smaller pixel pitches, better image quality? In some respects, one could say Direct-View-LED is already a mature technology. But the major changes are not happening on the front surface where the light is emitted. Instead, the real transformation is taking place in LED panel production itself – and major shifts are expected in the coming years.

“There will be a shift away from packaged LED, IMD and NIB toward unpackaged COB and COG. We are facing a massive transformation,” said Ted Romanowitz, Head of Professional Displays at market research firm Futuresource Consulting, at DSS ISE 2026. This transition would make high-quality LED more suitable for mass production and standardization – thereby significantly reducing costs. A first indication of this trend came from TCL in mid-2026, when it sharply re-

duced prices for its MicroLED products in China. While this move served strategic market purposes, it is likely to further accelerate the push toward cheaper mass production.

At the same time, flip-chip LED technology is gaining ground. According to Futuresource, 2025 marked the first year in which more flip-chip LEDs were sold than traditional LED technologies. Flip-chip is more efficient, produces less heat, and delivers superior image quality – especially in black levels and resolution. In the long term, flip-chip combined with COB (chip-on-board) is expected to become the dominant format in indoor DoOH applications.

More broadly, MicroLED based on COB – such as Samsung The Wall – or COG is becoming increasingly important, according to Futuresource. By

2029, these technologies are expected to account for 57 percent of the fine-pixel LED market, overtaking the currently dominant SMD technology.

In the MicroLED COG (chip-on-glass) segment, LG showcased what the future could look like at ISE. The company presented a new chip-on-glass Active MicroLED from its Magnit series. In the 136-inch display, the TFT-based LEDs are individually controlled, enabling flicker-free performance. Combined with a variable refresh rate of 1,444 Hz, the result is an exceptionally smooth image. The thin glass-panel structure also enables very sharp images. According to LG, the ultra-precise LED transfer process further ensures long-term stability.

Beyond ProAV

MicroLED is also becoming an increasingly standard part of product portfolios across manufacturers. That these high-end solutions extend beyond traditional visual applications is demonstrated by Daktronics. After acquiring X Display, the company has begun developing its own MicroLED production line in the United States. At ISE 2026, Daktronics presented a concept for a future MicroLED product: a COG display with 0.18-millimeter pixel pitch, 5.1 inches, and LED chips measuring just 13 by 20 micrometers.

This opens up new strategic opportunities. For digital signage, such resolution would be excessive, but other industries offer strong potential – particularly automotive and defense.

All-in-one solutions on the rise

In parallel, preconfigured all-in-one LED systems have been experiencing strong growth for some time. With an average annual growth rate of 42 percent, this segment is expected to reach \$1.5 billion by 2029. The main advantage is fast, simple installation – even for less experienced digital signage integrators.

Manufacturers are also introducing tools to simplify deployment. PPDS has launched a new online LED configuration tool for customers and system integrators. Users enter parameters such as wall size, brightness, pixel pitch, and mounting type, and the system automatically selects

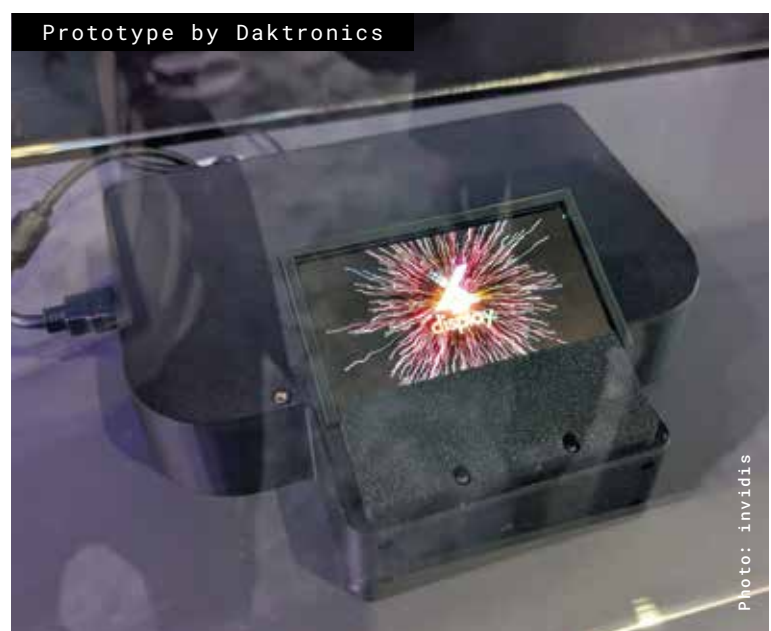
suitable products, processors, cabling, and control systems. It then generates a complete technical report and bill of materials.

Rollable MicroLED

There are also attention-grabbing innovations pointing toward entirely new applications. One of the most striking display technologies at Touch Taiwan this year was the rollable MicroLED display from AUO. The 17.3-inch panel features an extremely tight bending radius, allowing it to be fully rolled up – breaking away from the constraints of flat or curved fixed displays.

In addition to its mechanical flexibility, the rollable MicroLED offers an ultra-thin structure, high brightness, wide color gamut, and low reflectivity. This new panel architecture is expected to enable entirely new digital signage applications and immersive user experiences – especially where space, mobility, or flexible surfaces are important. Admittedly, rollable displays have had a mixed track record in digital signage. For example, the widely discussed rollable OLED from LG never achieved mainstream adoption in the sector. Still, interest in rollable display technology remains strong – and AUO's MicroLED approach appears more technologically mature and better aligned with real-world applications.

Overall, the rise of LED technology is set to continue – and may even accelerate further as manufacturing undergoes its next major transformation.



LCD

New Premium Panels

LCD displays are a mature technology, yet their capabilities are still being pushed. MicroRGB highlights ongoing innovation in the premium segment, and the first models are now making their way into the digital signage market.

Balthasar Mayer

LCD technology continues to play a pivotal role in the digital signage market. Despite the growing share of self-emissive LED and OLED solutions, LCD remains the backbone of many professional installations thanks to its scalability, availability, and cost efficiency.

However, this does not mean innovation has slowed down. On the contrary, much of today's development focuses on refining LCD's role as a dependable workhorse: slimmer form factors, improved brightness uniformity, higher energy efficiency, and increasingly sophisticated industrial design.

At the same time, genuine technological advances are emerging. One notable example is MicroRGB technology. As is often the case in the LCD space, it originates from the consumer TV segment. Earlier this year, the first models were unveiled at CES in Las Vegas, aiming to redefine the premium display category. Manufacturers such as Samsung, LG, Sony, and Hisense have already introduced corresponding solutions into their portfolios.

Exceptional contrast

Traditional LCD displays have long relied on white or blue LEDs combined with color filters for backlighting. The MicroRGB approach replaces this system with individually controlled red, green, and blue LEDs integrated directly into the backlight. This eliminates part of the optical loss

caused by filters and enables more accurate, more saturated color reproduction. While the technology still uses an LCD panel, its visual output is increasingly approaching OLED-like characteristics.

In addition, manufacturers combine MicroRGB with fine-grained local dimming. This allows small, precisely defined zones of the display to be controlled independently – meaning black areas can appear truly black as the corresponding LEDs are switched off.

Current MicroRGB panels feature 1,000 or more dimming zones, comparable to premium TVs. This significantly enhances black levels, overall color depth, contrast performance, and HDR capabilities.

Early signage applications

One of the first companies to bring this technology into the digital signage space is Samsung. At ISE, the manufacturer showcased a professional 130-inch MicroRGB display. Samsung's implementation uses a very dense arrangement of MicroRGB LEDs that can be individually controlled – unlike conventional LED backlights, where LEDs are typically managed in groups. This results in a total of 5,670 independently controlled zones.

The outcome is a substantially richer color depth and striking black levels, with peak brightness reaching up to 1,000 nits.



A showstopper at ISE: Samsung's 130-inch MicroRGB display

To further enhance image quality, Samsung developed its Micro RGB AI Engine. This system analyzes each frame in real time and automatically adjusts color and brightness. The first 110-inch model also includes a Micro RGB Color Booster Pro, which detects washed-out color areas and enhances their saturation and vibrancy. The display is designed to cover the full BT.2020 color gamut.

Energy efficiency through MiniRGB

Hisense is taking a slightly different approach in the digital signage segment. At ISE 2026, the company presented an 85-inch 4K high-brightness display based on MiniRGB technology. The target applications are primarily window-facing and semi-outdoor environments. The display reaches a peak brightness of 4,000 nits, with Hisense claiming that MiniRGB enables this performance while using up to 55 percent less energy than conventional LED backlights.

Further developments may already be on the horizon. According to the company, Hisense has invested several billion dollars in recent years to advance MiniRGB technology.

Room for diversification?

Taken together, these developments show that LCD technology is far from reaching its limits. For premium brands, precise control of color, con-

trast, and brightness has become one of the key avenues for differentiation from standard low-cost LCD products.

Whether MicroRGB displays will ultimately gain widespread adoption in the digital signage market will largely depend on price. In this segment, scale is critical – and with it, cost. OLED technology has demonstrated the visual benefits of superior color and contrast reproduction, but the B2B market has so far shown only limited willingness to pay a significant premium for it.

Continuous evolution

LCD continues to serve primarily as a scalable, cost-optimized workhorse technology. However, a gradual evolution is clearly underway, reflected in a range of emerging features, including:

- Pantone certification (BenQ)
- AI capabilities (e.g., PPDS, *see page 57*)
- Anti-glare displays (Sony)
- New 3D effects (Samsung, *see page 48*)

E-PAPER DISPLAYS

Moving Into the Ecosystem

New technological advances and deeper integration are reinforcing the potential of e-paper displays as a distinct signage category – especially when they are embedded within a holistic end-to-end concept.

Balthasar Mayer

Everyone is familiar with the advantages of e-paper displays by now: they are lightweight, easy to install in flexible configurations, readable even in direct sunlight, and consume remarkably little power.

Since the energy price shock triggered by the invasion of Ukraine, energy-efficient solutions have moved strongly into focus. More recently, the energy crisis sparked by the Iran conflict could open up additional opportunities for e-paper displays.

The major breakthrough in digital signage and digital-out-of-home is still ahead, but technological development continues steadily, and real-

world use cases are multiplying – particularly in retail and smart city applications.

While the number of vendors offering finished e-paper displays continues to expand, there's a clear monopoly in panel fabrication. With a market share of over 90 percent, E Ink is still the industry's de facto standard. Companies such as PPDS, Dynascan, Sharp, and Samsung all rely on E Ink's various panel technologies.

Spectra 6 and Marquee

For digital signage applications, the key technology is Spectra 6. This is E Ink's flagship solution



Technology comparison: e-paper displays (left) will not replace LCDs but will need to carve out their own use cases.

Photo: invidis



A Marquee prototype at ISE 2026

in terms of color capability, delivering more than 60,000 colors and powering most e-paper displays used in signage today. Its main limitation: it's designed for indoor use.

For outdoor applications, E Ink has added a newer technology to its portfolio over the past year: Marquee. Compared to Kaleido 3 – E Ink's primary color outdoor solution – Marquee offers a broader color gamut. Like Spectra 6, it uses colored pigment particles – cyan, magenta, yellow, and white – to construct the full range of visible colors.

With these technologies, E Ink starkly dominates the e-paper display market – and aims to strengthen its position further. The company has announced plans to significantly expand production capacity for large-format panels, including through a joint venture with AUO.

Ongoing developments

One of the most persistent criticisms of color e-paper displays has always been color reproduction. Even with Spectra 6, native support for 60,000 colors can be insufficient for traditional advertising, where vibrancy and precise brand colors matter. The visual “pop” is often missing.

However, progress is being made. Samsung, for example, has developed its own Color Imaging Algorithm for e-paper displays. According to the company, this algorithm is based on the way the human visual system perceives color – not pixel by pixel, but as blended tones across areas. By optimizing images this way, Samsung claims it can achieve the visual impression of around 2.5 million colors.

Another issue is the slow image refresh, often accompanied by a brief flicker during transitions. This is not necessarily a disadvantage, since e-paper displays are not designed for constant image changes. Still, improvements are under-

way here as well. E Ink itself, for instance, has introduced a Ripple upgrade intended to create smoother transitions between images on Spectra 6 panels. There are also early experiments with short-form video on e-paper.

Software integration

Digital signage software providers have also recognized the growing importance of e-paper. Many software updates now include compatibility with a wide range of display manufacturers, allowing e-paper screens to be controlled and managed within existing signage ecosystems.

At the same time, new solutions are emerging from another direction. ESL specialists such as Vusiongroup (formerly SES-Imagotag) and Solum are extending their expertise – from managing millions of connected electronic shelf labels – to larger display formats.

Solum, a former Samsung subsidiary, integrated e-paper signage into its store management platform, embedding it within the broader retail ecosystem alongside ESLs, cameras, and sensors. Rather than treating these technologies as standalone solutions, Solum aims to unify them under a fully digitized point-of-sale concept – including campaign management, retail media, and device administration.

An added benefit: content delivery takes place within systems specifically designed for e-paper, which can enable more efficient data transmission.

Price remains the key barrier

These kinds of integrated ecosystems could help position e-paper signage as a long-term replacement for printed POS materials – if one major hurdle can be addressed: cost.

E Ink's plans to expand production capacity may help ease pricing pressure, but in the long run, more panel manufacturers would need to enter the market to create genuine competition. Until then, smart city projects may lead the way, as public-sector buyers increasingly prioritize energy efficiency – sometimes justifying higher upfront investment.

3D EFFECTS

Little Space, Lots of Depth

Samsung's Spatial Display introduces a new approach to 3D visualization on screens. Here's how the technology works – and what it reveals about the broader possibilities of presenting content in three dimensions.

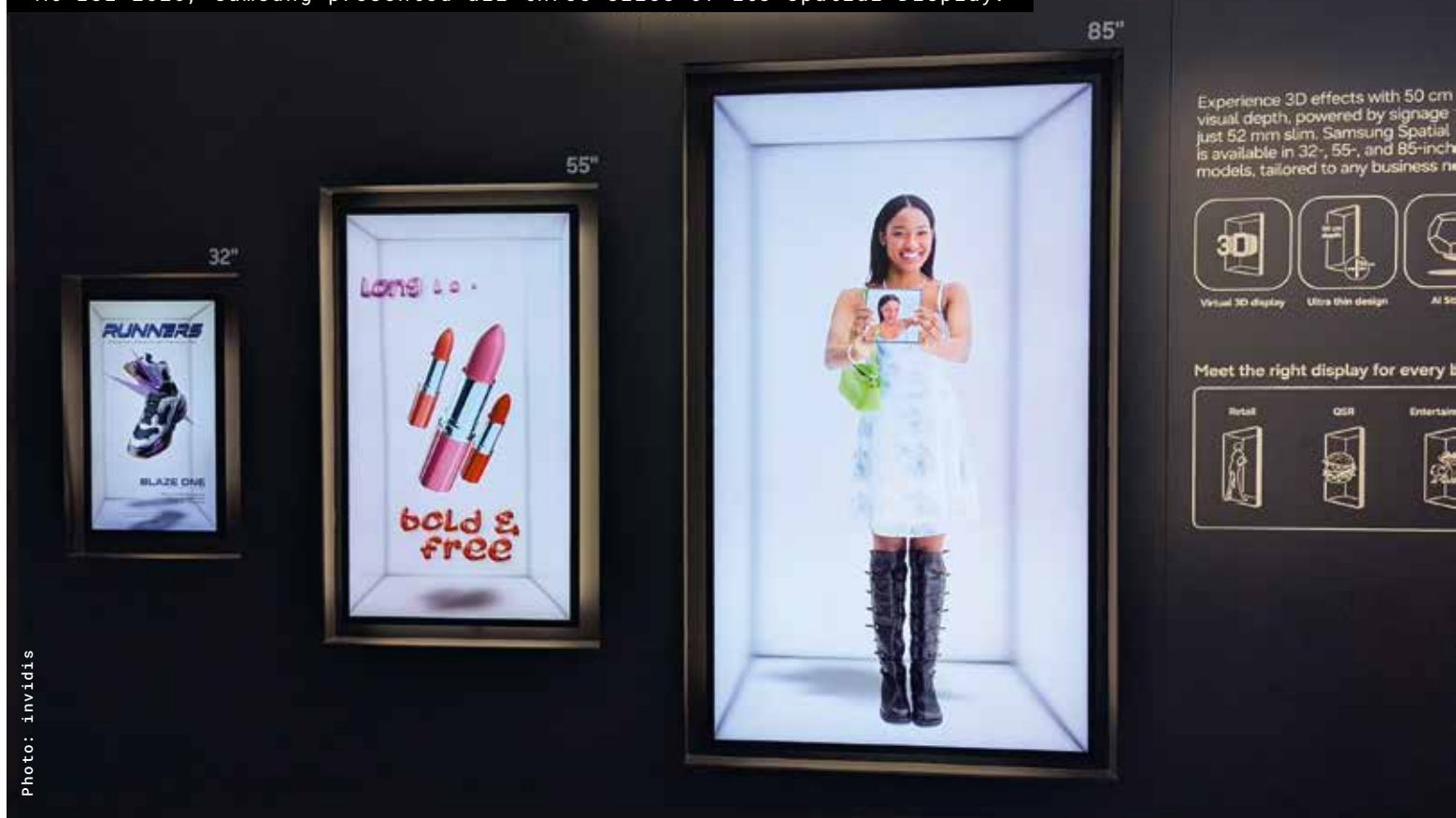
Balthasar Mayer

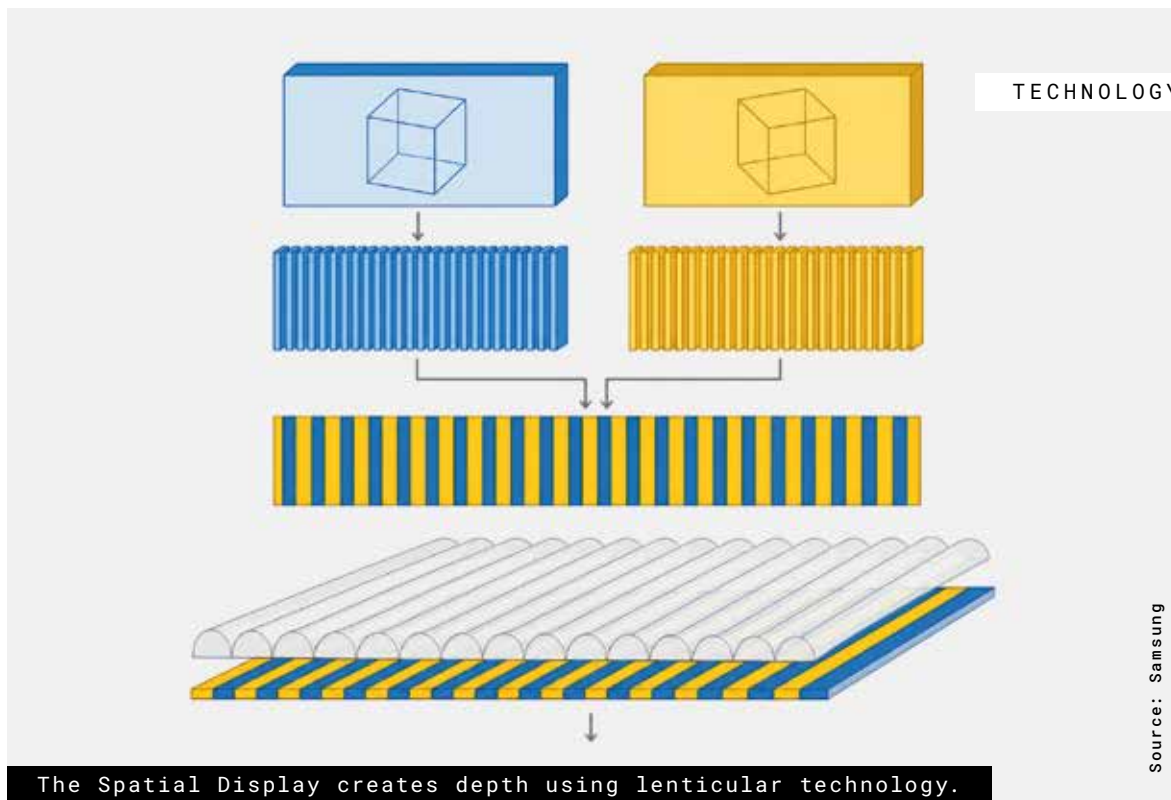
For years, displays that create naked-eye 3D effects have remained popular whenever the goal is to attract heightened attention. These solutions are often marketed with terms such as “3D display” or “hologram.” Strictly speaking, however, these labels are misleading, since the screens neither generate true three-dimensional structures nor meet the formal definition of a hologram.

A true hologram would require a 3D image that can be viewed from all sides.

Despite this discrepancy, 3D-effect displays continue to hold their place in the market – evidently because they fulfill their primary purpose: capturing attention. In particular, combining these displays with interactive avatars is seen as highly

At ISE 2026, Samsung presented all three sizes of its Spatial Display.





promising. Even so, large-scale real-world applications are still relatively rare.

The lenticular effect

Now, a major player has entered the field with a new technology. With its Spatial Display, Samsung is introducing a comparatively pragmatic approach to 3D visualization.

The underlying principle has actually existed for years in the print industry: lenticular film. Samsung's Spatial Display uses a 3-4 millimeter-thin

3D panel based on binocular disparity. Different lenses present slightly shifted versions of the image to each eye from different angles, with the visuals displayed in extremely narrow strips across the panel. The result is a convincing sense of depth. According to Samsung, the foreground remains sharp and two-dimensional, while the diffused background creates a perceived optical depth of around 500 millimeters.

In reality, however, the physical depth of the display is far smaller. The Spatial Display has an installation depth of 52 millimeters and weighs

3D Interaction

Interacting with 3D content through traditional 2D interfaces such as touchscreens or a mouse has always been something of a compromise. The Heidelberg-based company Ameria has been working on touchless gesture control for years and is increasingly combining this technology with spatial displays. Its first major integration was launched together with Sony and the company's Spatial Display technology. Users can select, enlarge, and rotate 3D objects freely in space using simple hand movements. Beyond retail applications, Ameria also sees strong potential in the medical field. Ultrasound images and similar visualizations, for example, can be examined from multiple angles – even while using disinfected hands.



around 42 kilograms. This allows the screen to be integrated elegantly into environments such as high-end retail spaces.

Samsung also identifies gyms and educational settings as potential application areas. The Spatial Display first launched in an 85-inch version. A smaller 32-inch model is now available, while a mid-sized 55-inch version is expected soon.

Content production is handled through Samsung's VXT cloud platform. An integrated AI Studio automatically processes and adapts content, eliminating the need for specially created 3D material and reducing both production costs and development time.

Comparing spatial technologies

Samsung is not positioning its Spatial Display in isolation. Instead, it complements existing 3D-effect technologies from companies such as Sony and Proto.

Sony's Spatial Reality Displays rely on a highly precise and technically sophisticated approach. Eye tracking combined with a limited sweet spot creates an impressive sense of depth – but only for a single viewer at a time. In addition, these displays are designed less for spectacle and more for practical applications, such as architecture.

Proto, by contrast, follows a completely different concept. Its large, box-like displays use transparent LCD panels and sophisticated lighting systems to create the illusion of life-sized people. The installations are visually striking, but they also require considerable space.

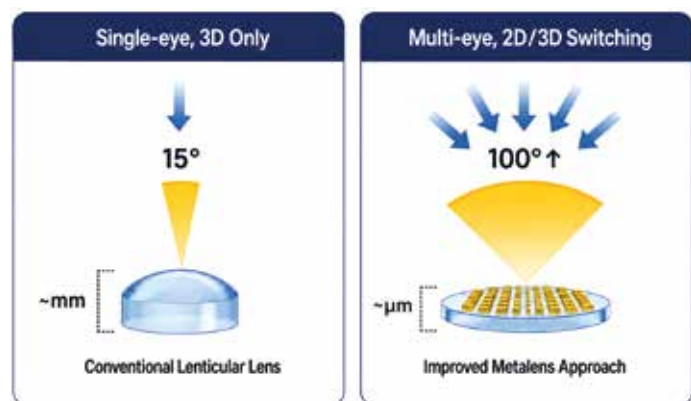
Compared with these approaches, Samsung's solution appears deliberately more restrained. The 3D effect is more subtle, but the display itself is much slimmer and easier to integrate. As a result, the Spatial Display could carve out its own place within the broader ecosystem of 3D technologies. Whether this form of spatial signage will succeed in the long term remains to be seen.

One important point, however, should not be overlooked: not every 3D effect requires specialized displays. Forced-perspective installations – often, though not exclusively, used on large corner-mounted screens – rely entirely on anamorphically distorted content and a carefully defined viewing angle.

These displays are frequently marketed as "3D screens," even though the effect is created solely by the content itself. Ultimately, this underlines a broader truth: successful 3D presentation depends above all on the quality of the content, regardless of the technology behind it.

Next-Level Lenticular Technology

While the Spatial Display is still in the process of being rolled out, Samsung has already presented, together with Postech, a study for a next-generation 3D-effect display. Instead of using a physical lens, this approach relies on a so-called Metalens. It is significantly thinner, can electronically switch into 3D mode, and – thanks to its micro-structured design – enables a viewing angle of up to 100 degrees for the 3D effect. By comparison, the current Spatial Display offers only around 15 degrees. Samsung emphasizes that the technology is already technically feasible and that commercialization is highly likely.



*1μm (micrometer) = 1/1,000,000 of a meter (m)

Lenticular lens and Metalens in comparison

Source: Samsung

TRANSPARENT SCREENS

A Slow Bloom

Research suggests that transparent displays may never become a mass-market staple, but they are steadily carving out a place of their own – quietly evolving into a meaningful display category.

Antonia Hamberger



Transparent shop window LED screen

At tech trade shows, transparent displays are a popular way to add a striking layer of visual depth to product presentations. Outside the show floor, however, the technology has yet to find a strong commercial market capable of deploying it at scale.

That said, while transparent displays are unlikely to become a mass-market product in the near term, market research from Omdia suggests steady growth ahead. Revenue is projected to reach around \$100.2 million by 2032, representing a compound annual growth rate of 9.3 percent between 2025 and 2032.

While this growth is not expected to translate into massive unit volumes, both total revenue and total installed area of transparent displays are set to increase significantly.

Much of this expansion is likely to come from large-format digital signage installations, as ongoing improvements in light transmission, transparency, and scalable panel sizes make transparent displays increasingly practical for public environments.

Over the past decade, display manufacturers have refined a range of transparent display technologies, including TFT LCD, PMOLED, AMOLED, LED, and MicroLED. Each offers distinct advantages in terms of panel size, pixel density, and transparency. Early generations, however, came with clear limitations: PMOLED panels were typically smaller than 5 centimeters, while TFT LCDs delivered less than 20 percent transparency.

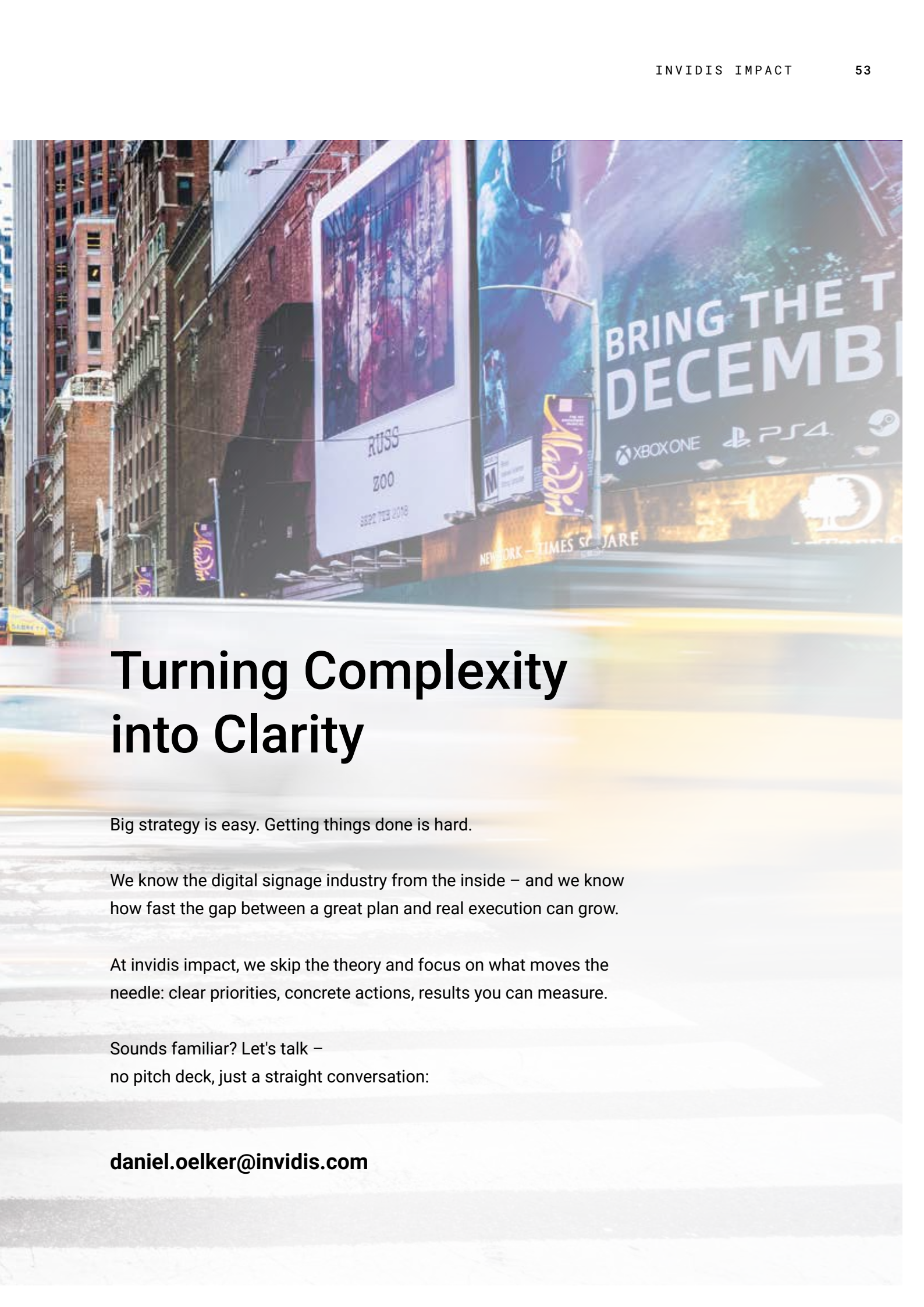
More recent advances have largely addressed these constraints. AMOLED panels now exceed 70 inches, while LED and MicroLED solutions – including Samsung's transparent MicroLED shown at ISE 2024 – can achieve transparency levels above 70 percent. Omdia expects these improvements to support gradual adoption as the technology becomes better aligned with specific application requirements.

At the same time, as display sizes increase, cost per square meter is becoming a critical factor. While AMOLED and MicroLED panels offer high pixel densities suitable for transparent applications, they remain expensive. As a result, LED film and mesh-based solutions are gaining traction, enabling larger display surfaces at lower cost, albeit with reduced pixel density. This approach is expected to account for a significant share of market growth – potentially not only enabling one-off installations but roll-outs at scale.



invidis impact provides experienced
and hands-on support for:

- Sales & Marketing
- Software & Operations
- Sustainability & Communications



Turning Complexity into Clarity

Big strategy is easy. Getting things done is hard.

We know the digital signage industry from the inside – and we know how fast the gap between a great plan and real execution can grow.

At invidis impact, we skip the theory and focus on what moves the needle: clear priorities, concrete actions, results you can measure.

Sounds familiar? Let's talk –
no pitch deck, just a straight conversation:

daniel.oelker@invidis.com

DIGITAL SIGNAGE SOFTWARE

AI Powers the NextGen CMS

ISE 2026 highlighted the first AI-enabled digital signage CMS workflows that offer tangible benefits. From guided content creation to assistants that connect screens with broader enterprise systems, AI is moving from experimental to practical.

Antonia Hamberger

2026 is shaping up to be the year the AI revolution truly reaches the digital signage software industry. What once felt like a scatter of experimental features – AI tools that looked impressive but rarely delivered real value – has evolved into something far more substantial.

Earlier attempts to integrate AI into content management workflows offered little in the way of meaningful efficiency gains. Today, that picture has changed dramatically. Driven by the rapid advancement of large language models (LLMs), and especially by the rise of agentic AI – platforms

At ISE 2026, the AI revolution became visible.





Intuiface at ISE 2026

Photo: invidis

capable of “communicating” with one another via Model Context Protocols (MCPs) – digital signage CMS solutions are beginning to resemble chat-bot-driven ecosystems.

This new generation of CMS platforms does more than automate tasks; it transforms digital signage into a strategic data engine, directly influencing decision-making at the enterprise level.

At ISE 2026, several software providers showcased time-saving tools that are not only genuinely useful but also intuitive to operate, alongside AI-generated content that surpasses anything seen before. A clear sign that digital signage has fully entered the AI era.

Users need help with prompting

Software company Intuiface, for example, unveiled its latest Experience Generator – an AI-powered content creation engine designed specifically for interactive digital signage. Unlike generic content generators, it produces assets that integrate seamlessly into Intuiface’s XML-based architecture. The system leverages sensors, voice interaction, computer vision, and sophisticated orchestration rules, including conditional trigger-and-action logic.

What sets these AI workflows apart is guided prompting. Most users still struggle to craft effective

prompts. To address this, Intuiface has developed mechanisms that refine and optimize user input – essentially turning even inexperienced users into capable prompters.

Assistants are replacing tools

Korbyt is taking a different approach. Its workspace experience platform now relies on a suite of AI assistants that can seamlessly interact with other enterprise systems. Concierge AI, for instance, integrates with Outlook, allowing users to book rooms, desks, and workspaces via voice commands. Command AI proactively monitors devices, while Create AI and Curate AI support content creation and distribution – once again using guided prompting.

Poppulo is following a similar path, having developed an agentic AI suite for digital signage and other employee communication channels. The Denver, Colorado-based company, which counts 40 of the 100 largest U.S. corporations among its clients, has introduced AI-powered features designed to help communications teams work faster and more efficiently.

Poppulo Analyze delivers personalized insights and recommendations, while Poppulo Create enables communications departments to produce on-brand content quickly and at scale. The portfolio is rounded out by AI-powered email transla-



tion and a personal assistant that provides instant access to campaign metrics, performance data, and strategic guidance.

By integrating these agents into a unified platform, Poppulo aims to help teams make faster, data-driven decisions across both employee channels and digital signage networks.

From data points to action

The platform pushing the envelope the most right now is Appspace. Going beyond standalone AI assistants, it enables users to create their own assistants – no coding required – through a true “assistant builder.” This allows organizations to turn data from a wide range of touchpoints into concrete, actionable insights.

With around 1.5 billion data points processed each year, Appspace can now visualize and analyze this information through simple conversational commands. Preconfigured assistants like the Analytics Assistant let users ask questions such as,

“Which meeting room is the most popular?” – and receive more than just answers. The system identifies the underlying drivers behind patterns and recommends specific actions, such as increasing utilization of underused spaces.

Appspace’s new data visualization engine is also setting a benchmark. Instead of relying on static reports, it personalizes insights and generates tailored dashboards for individual users.

As Thomas Philippart de Foy, Appspace’s Chief Innovation Officer, puts it: “Our assistants can understand what content was played on a screen and who was in the building to see it. That connection between digital content and physical presence is where real workplace intelligence starts.”

Through Model Context Protocols (MCPs), these assistants integrate seamlessly with other enterprise systems – whether that means creating tickets in Servicenow or interacting directly with building management technology.

What this means for digital signage:

- Content creation is becoming more sophisticated: AI is now embedded into workflows tailored specifically to digital signage.
- MCPs are the real differentiator: They transform isolated AI tools into fully integrated workflow engines.
- Digital signage software is becoming part of a larger AI ecosystem: The real value emerges when insights gathered from CMS platforms inform other enterprise systems, and vice versa, creating a feedback loop that optimizes content delivery.
- AI enables continuous optimization: Rigid, pre-defined tools are being replaced by systems that learn, personalize, and adapt over time.

In the wake of ISE 2026, one thing is clear: the AI revolution has fully arrived in digital signage software. This is no longer about novelty but about actionable intelligence, seamlessly integrated workflows, and content that intelligently adapts to both audience and environment.



Photo: Korbyt

AI HARDWARE

Screens That Think

Digital signage has long evolved beyond passive screens. But adding AI to interactive signage elevates the game. With a new generation of “AI-ready” devices, a treasure trove of new experiences is being unlocked.

Antonia Hamberger

“AI-ready” has quickly become a defining term in the latest generation of display hardware. In essence, these devices are built to process AI applications directly on-device, eliminating the need for constant cloud interaction.

For digital signage, this could be a scenario where you hold an item in front of a screen in a store, an integrated camera recognizes it, and the screen automatically plays content related to that item. Essentially, this enables a pick-and-lift application without the need to tag items with sensors or install them under shelves.

Triggering content via camera data is something that only makes sense when the data is processed locally. Pushing video footage to the cloud and waiting for a response would strain customers’ patience. Even five seconds of waiting time takes us mentally back to our very first experiences with browsing the internet – and we do not want to go back there.

Another issue is data protection. Sending unprocessed video footage to the cloud and potentially storing parts of it is, in many markets, either not GDPR-compliant or highly unwelcome by consumers.

This means the processing power must be built into the hardware – either into the screen itself or into the media player. Most manufacturers address this by adding Neural Processing Units (NPUs) alongside the usual Central Processing Unit (CPU) and Graphics Processing Unit (GPU).

The difference between these chips does not lie in raw processing power – neither is inherently

more powerful than the others – but in how they process information. NPUs are designed for parallel processing, more similar in that regard to how the human brain works. CPUs, on the other hand, are built for sequential processing.

The architecture of NPUs allows them to process and filter large amounts of data simultaneously more efficiently. Because raw processing power is not the decisive factor, adding NPUs does not significantly increase energy consumption – and it is still far more efficient than relying on cloud-based processing.

On-edge AI applications are a relatively new domain in digital signage. Early experiments were often unimpressive due to slow response times that undermined the experience, like voice AI interactions or on-the-spot image generation. Regardless of overall processing power, these applications placed additional strain on CPUs and GPUs that were already handling other workloads.

Now, several manufacturers have added media players or SoC displays with built-in NPUs to their portfolios. So far, however, only a few customers are actively using them. This new generation of “AI-ready” digital signage hardware is enabling a new type of experience – one that many suppliers and integrators are not yet familiar with. And customers cannot develop new experiential scenarios if they are unaware of what is possible.

The question now is no longer how to make hardware ready for AI, but how to create applications that fully leverage its capabilities.

CONTENT

Breaking Free

Playlist across all systems and displays: SignageOS' streaming-based solution Supra promises to break the fragmentation in digital signage, simplify content creation, and extend hardware life.

Florian Rotberg

For more than two decades, the digital signage industry has accepted a certain inevitability: fragmentation is part of the game. Different SoCs, different OS versions, different CMS platforms – all stitched together by integrators with patience, workarounds, and a deep understanding of hardware limitations. Innovation in content was always constrained by one simple fact: what you can play depends on what the device can handle. With Supra, SignageOS is attempting to break that rule.

Instead of relying on the SoC's native browser or a local media player, Supra streams content – fully encrypted – from an edge server directly to any endpoint, regardless of operating system, SoC chipset, or CMS. Unlike IPTV-style approaches, the system supports bidirectional communication, preserving interactive capabilities.

Unified fleets

The magic lies in SignageOS' proprietary, patent-pending protocol, which can even stream Android apps to platforms that could never natively run them. For the first time, a CMS can deploy complex, app-based experiences across an entire fleet without worrying about local OS or browser limitations.

End-to-end encryption ensures secure communication between the edge server and the display. Because playlist is decoupled from local Chromium versions, long-standing issues such as outdated browser engines or limited codec support effectively disappear. Even resolution constraints can be bypassed: Supra can stream UHD content to devices whose native SoC supports only FullHD.

The system is also engineered to address everyday operational challenges, from color discrepancies across different display lines to proof-of-play requirements that must stand up to the scrutiny of retail media advertisers.

But the biggest bottleneck in digital signage adoption has never been screens or players. It has been the lack of people capable of creating content. True interactive experiences require knowledge of a specific CMS, of the limitations of a specific SoC, and of the behavior of a specific browser version. Supra removes that barrier.

If any web app can run on any screen, suddenly every digital agency becomes a potential signage agency. The industry has long talked about lowering the entry barrier for content. Supra may finally deliver it.

Longer hardware life

The second – and perhaps even more consequential – impact lies in hardware longevity. The industry's green signage ambitions are often at odds with its hardware reality. While a display can easily run for 10 or 15 years, the player or SoC controlling it typically becomes outdated long before. When the browser engine stops receiving updates or can't handle new content standards, operators have little choice but to rip and replace.

SignageOS claims Supra can extend hardware life cycles to as long as 15 years, with only a single refresh required. If accurate, this would be a major leap forward for ESG-conscious operators and for cost-sensitive networks.



Setup for large-scale projection mapping

PROJECTION

Moving Upmarket

Immersive environments, projection mapping, and simulators: these are the core segments where projection can fully play to its strengths.

Balthasar Mayer

The projector business within the ProAV ecosystem continues to grapple with a persistent narrative of decline. It is true that projection keeps losing share to display technologies in areas such as corporate environments and education. Yet at the same time, the technology is not only stabilizing but even growing in its core segments.

These include, above all, immersive experiences – both permanent installations and event-based productions. Large-scale “mega projections” use projection mapping and large arrays of high-performance projectors to create striking, highly immersive environments.

Another key field is simulation environments, ranging from training systems for security personnel to golf simulators. In these applications, projection remains the technology with by far the most compelling cost-to-performance ratio.

Mevix doubles down on projection

This trend is visible not only among manufacturers that have consistently focused on projection

for years – such as Epson or Christie – but also among companies currently undergoing transformation.

One example is Panasonic. After a deal with the Japanese financial group Orix fell through in July 2025, the company nonetheless stayed the course, implementing its original plan and launching the new ProAV brand Mevix. With this move, Panasonic aims to advance its display portfolio while simultaneously strengthening its position in the projector market – particularly in the growth areas mentioned above.

At the same time, projector technology is evolving in line with broader ProAV industry demands. Manufacturers are working on faster setup processes, improved connectivity, and greater use of AI-based workflow support. The range of available lenses is expanding to accommodate more diverse requirements. High-end short-throw projectors are also increasing installation flexibility, making it possible to equip smaller spaces and to conceal projectors more effectively in immersive installations.

The background features a repeating pattern of purple geometric shapes, including squares, rectangles, and triangles, some of which are rotated at 45-degree angles, creating a dynamic and modern visual texture.

**NEXT
GEN
SIGNAG**

The background is a solid black field filled with a complex, repeating pattern of geometric shapes. These shapes are primarily composed of thick, dark purple lines and blocks, some of which are arranged to form larger, more intricate structures. The pattern is dense and covers the entire area except for the text.

E

BUSINESS TRANSFORMATION

Forces of Disruption

The start of a debate about the future: Next-Gen Signage marks the end of business as usual, as Artificial Intelligence, geopolitical risk and IT-scale competition reshape digital signage fundamentals.

Florian Rotberg & Stefan Schieker

There is rarely a single moment when an industry changes direction. More often, change happens gradually, disguised as incremental progress. New features, faster processors, better screens. Digital signage has lived comfortably in this logic for more than two decades.

What we are experiencing now is different.

NextGen Signage is not another technology wave, not a roadmap, and certainly not a product category. It is the beginning of a discussion – and a necessary one. The industry is entering a rupture phase. Business as usual is no longer an option, and for some established business models, this rupture will lead to a crash.

Three developments are overlapping and will leave no stone unturned: Artificial Intelligence, geopolitics, and market maturation.

Artificial Intelligence: x10 Is the New Baseline

AI is often discussed as an efficiency tool. That framing is misleading. Artificial intelligence does not just make existing processes faster; it enables

tasks to be done differently – often by an order of magnitude.

In digital signage, AI can already:

- process creative and operational tasks 10x to 100x faster than manual workflows;
- enable mass customization of user interfaces within hours instead of months;
- fundamentally disrupt software interaction through natural language interaction.

The most profound shift is happening below the surface: Agentic AI. Systems no longer wait for human input at every step. Agents exchange data, evaluate context, and trigger actions autonomously.

For digital signage, this means that content creation, scheduling, optimization, monitoring, and even troubleshooting can increasingly happen without human micro-management. The role of humans shifts from execution to intent, governance, and accountability.

The implications for software design, workflows, and business models are massive.

Geopolitics: From Background Noise to Strategic Risk

For years, geopolitics was a distant concern for most signage projects. Screens were installed, players were sourced, and software ran in the cloud – largely without political considerations. That era is over.

Cybersecurity has become a central challenge. Public screens are highly visible, often poorly protected, and symbolically powerful. They are prime targets for hackers, activists, and state-sponsored attacks. A compromised digital signage network is no longer a technical issue, it is a reputational and operational risk.

At the same time, global supply chains are under pressure from multiple angles (*see page 8*): Hardware availability, pricing stability, and long-term serviceability can no longer be taken for granted.

Finally, we are seeing a politically driven division of technology stacks. Western and Chinese ecosystems are increasingly decoupled. This affects hardware sourcing, operating systems, cloud services, AI models, and long-term platform strategies. Digital signage is no longer geopolitically neutral.

A Mature Market: When Big IT Enters the Stage

After 25 years, digital signage is no longer a niche. The market has reached a scale that attracts multi-billion-dollar IT players.

This has several consequences:

- The market is now large enough to matter for global integrators and platforms.
- Traditional digital signage margins are higher than in classic IT – but they will come under pressure as IT players enter with scale and standardization.
- Global players increasingly replace national and regional champions.

Maturity brings professionalism, but also commoditization. Customers expect interoperability, enterprise-grade security, and predictable total cost of ownership.

In contrast to the past, customers are not willing to pay for service providers “to take complexity out of a system” – they expect digital signage to work and scale.

Digital signage is becoming more of a mainstream IT-infrastructure than a solution provided only by a few experts.

Disruption Meets Long-Term Trends

The rupture is amplified by long-term trends that have been shaping the industry for years:

- Sustainability as a hard requirement, not just a marketing slogan
- Technology shift from LCD to LED
- Changing user habits, driven by mobile, voice, and conversational interfaces
- Cybersecurity as a baseline expectation
- Managed services replacing project-based thinking
- Shifts in the value chain, with hardware vendors becoming service providers and competing with channel partners

These trends alone would already require adaptation. Combined with AI and geopolitics, they force a fundamental rethink. This is where NextGen Signage begins.

This Yearbook special is deliberately not comprehensive like our former ones. The dynamics are too strong, the overlap of forces too complex, and the speed of change too high for a closed invidious NextGen framework.

Instead, it aims to structure the discussion and highlight where fundamental rethinking is required.

INDUSTRY DEVELOPMENT



The Phases of Transformation

From Re-Imagine to Re-Set, with orchestration at the center: Why NextGen Signage demands a complete overhaul of traditional operations and roles in the digital signage world.

Florian Rotberg & Stefan Schieker

For the digital signage industry and its end customers, NextGen Signage will bring fundamental changes that will shape the market for years to come. At the same time, it will scale and industrialize how software, services, and hardware are provided and operated. The shift is not just “new technology,” but a new operating logic: more automation, more orchestration, more security discipline, and a stronger move from projects to outcomes.

invidis consulting structures NextGen Signage into five overlapping phases:

- Re-Imagine
- Re-Think
- Re-Invent
- Re-Calibrate
- Re-Set

These phases are not a linear maturity model or a step-by-step checklist. They describe different dimensions of transformation that will often happen in parallel – depending on vertical, geography, risk exposure, and platform maturity.

1 Re-Imagine: Communication Beyond the Screen

Re-Imagine is the conceptual phase – and the most underestimated. It starts with a simple question: What does communication look like in the future? Digital signage has historically been one-to-many, screen-centric, and largely one-directional. Even interactive signage has often been engineered around touch interfaces and predefined user journeys, where users adapt to software logic rather than the other way around. That model is now breaking.

Artificial intelligence changes interaction paradigms. Instead of navigating menus, users increasingly express intent in natural language: “Create a campaign for this store cluster,” or “Adjust content to local weather and inventory,” or “Explain why this screen is underperforming.” The interface becomes conversational rather than dashboard-driven, and that redefines who can operate signage systems – and how fast they can do it.

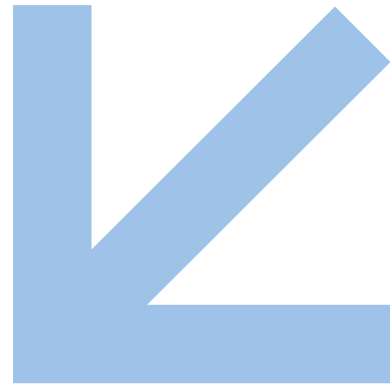
The screen remains important,
but only as one surface in a broader
communication fabric

In parallel, communication becomes contextual. Messaging is no longer a static asset pushed to a

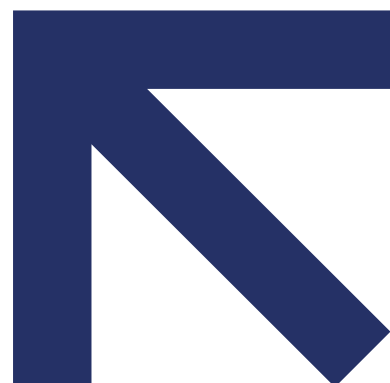
generic endpoint; it adapts to location, time, audience, environment, and data from connected systems. Content shifts from being a “file” to becoming a dynamic expression of intent within defined guardrails.

Re-Imagine also acknowledges a multi-device reality. The screen remains important, but it is only one canvas or surface in a broader communication fabric that spans mobile, desktop, kiosks, wearables, and emerging technology endpoints. In this environment, digital signage is less a standalone channel and more a visible node within a connected experience ecosystem.

Perhaps the most underestimated shift is that content and data are no longer only aimed at humans. Increasingly, systems communicate with systems. Screens send signals to AI agents, operational platforms, and analytics engines. Signage becomes machine-readable as well as human-visible – and this will change how we design experiences, measure impact, and manage responsibility.



Five Phases of NextGen Signage



Artificial intelligence changes interaction paradigms.

2 Re-Think:

What Stays – And What Changes

Re-Imagine opens the horizon; Re-Think brings us back to what is durable. One thing remains clear: screen-based communication stays essential. Large visuals still attract attention, they cannot be “closed,” and they still work when smartphones are locked and attention is fragmented. Digital signage remains mission-critical in contexts such as DooH, instore retail media networks, airport FIDS displays, employee dashboards, and retail experiences.

The screen is not disappearing – quite the opposite is true. The future will bring a broader variety of screen formats and technologies, from LCD and LED to e-paper and projection. Screens will be more deeply integrated into architecture and furniture, and in many environments, the sheer number of screens will increase as digital surfaces become a standard part of spaces.

Content and data are no longer only aimed at humans.

What changes fundamentally is the system logic behind the screen. AI accelerates the shift from touch-based and rules-based interaction to natural language and intent-driven operations. This makes systems more interactive and more responsive – but the bigger shift is that it drives orchestration.

Digital signage can no longer be treated as a silo channel. It becomes one element in a broader communication mix, connected to enterprise platforms, data sources, and experience layers. The classical leader-follower model is no longer fixed. Roles become dynamic and depend on use case, involved systems, and triggering events. A digital signage CMS can still be central – but it no longer “owns the center” by default.

More often, enterprise experience platforms or programmatic platforms will control what is

played out, where, and when, and the signage systems focuses on its core function – playing out content and managing complex digital signage hardware. And while the industry has been postulating the death of the playlist for years, AI may well become the coffin nail.

With orchestration, the classical Leader – Follower model is no longer fixed.

This forces a rethink of workflows and operating models. The classic process-oriented approach – brief, create, approve, schedule – is insufficient when content becomes contextual and dynamic. NextGen Signage requires a combination of goal-oriented thinking (target groups and outcomes) and process-oriented governance (approvals, compliance, accountability). The system must translate intent into execution reliably and at speed.

It also forces a rethink of data, hardware, and software. Data becomes context, not just a feed. Hardware is used longer, while more functionality is delivered as subscription software and services that can be upgraded remotely over time. Software becomes modular rather than monolithic. Customers increasingly combine best-of-breed modules from different vendors instead of buying full suites, reducing feature overlap and improving fit with enterprise platform strategies. In many large organizations, a central Digital Asset Management (DAM) platform is already standard, just like a single CRM or product database. Digital signage is therefore becoming part of a broader platform landscape – not a siloed one-trick-pony.

A signage CMS no longer owns the center by default.

Finally, Re-Think requires a new balance between human intelligence and AI. Humans define intent, boundaries, rules, and accountability. AI executes, optimizes, scales, and personalizes. This division of roles must be designed deliberately – it cannot be left to chance. For many digital signage users, this is a major challenge because the traditional model of “feeding the beast” with manually produced content cannot scale in a world where every screen might play out individualized, AI-generated content tailored to location, time, and context.

Internal employee and workplace digital signage applications often have an advantage here: They typically have access to more contextual data about spaces, audiences, and operational conditions. The more reliable information is available about the environment around the screen, the better messages can be tailored – and the more valuable the screen becomes as a contextual communication tool.

prioritize access over ownership, uptime over delivery, and outcomes over components. This shifts demand from one-off projects toward managed services that guarantee performance, availability, and continuous improvement.

The supply chain will split into a virtual and a physical domain.

At the same time, the value chain splits more clearly into two domains. One domain is virtual: software, content operations, AI, analytics, orchestration. The other is physical: hardware, installation, and on-site service. These domains scale differently, carry different margin structures, and require different organizational capabilities. Next-Gen business models will increasingly be built around this separation – and around the ability to industrialize both worlds without compromising reliability.

3 Re-Invent:

Business Models Under Pressure

When system architectures and customer expectations change, business models follow. The traditional separation between selling, installing, and operating signage is eroding – especially in enterprise environments. Customers increasingly

The Concept of Orchestration

Orchestration is a term commonly used in software development. It describes the automated configuration, management, and coordination of computer systems, applications, and services.

In the context of NextGen Signage we apply the same principles to digital signage.

Modern CMS platforms are no longer monolithic, hierarchical systems, but they are modular with different (micro)services and connectors (APIs) to external systems. These components are already orchestrated within the DS CMS today.

However, in a Nextgen Signage context the digital signage CMS can but does not have to play the central orchestrator role. The CMS itself can become an element of a larger system, e.g., a DXP platform or a retail media tech stack. In these environments, the DS CMS fulfills a clear role, e.g., content distribution or playout within a screen network, just like a violin plays a certain part of the score in an orchestra.

Conceptually, orchestration is not limited to CMS. It can also apply to

- Content and content adaptation
- Device management
- Platforms and hardware
- Data
- Roll-out and projects
- Commercial and business models



4 Re-Calibrate:

Ecosystems, Skills, and Risk

Re-Calibrate is about adapting ecosystems – both internally and across partners. Hardware vendors, independent software developers and integrators are reassessing what they must own, and what they should source from third parties. The classic question becomes unavoidable: where does differentiation really lie?

Cybersecurity becomes a central recalibration topic. As signage becomes more connected, more orchestrated, and increasingly AI-enabled, the risk landscape expands. Threats emerge that the industry has rarely confronted at scale before. Security therefore shifts from checklists and compliance certifications to resilience: the ability to prevent incidents, detect them early, respond quickly, and recover with minimal damage.

In NextGen Signage, reskilling is not optional. Talent is the real bottleneck.

Supply chain and market strategy are also being recalibrated. Supply chains must be diversified and planned with geopolitical disruption in mind. Playing fields will change by vertical and geography – and not every market will remain equally attractive. Some segments will reward scale and platform integration, while others will reward specialization, security credibility, and service excellence.



5 Re-Set:

New Priorities for a New Era

Re-Set is the internal phase – and often the hardest. It requires digital signage businesses to reset organizational setups, processes, workflows, and skill profiles. In NextGen Signage, reskilling is not optional. Talent is the real bottleneck. AI literacy, cybersecurity competence, orchestration know-how, and service operations maturity become core capabilities.

This is not only a vendor challenge. End customers will also need to evolve their internal responsibilities: who owns governance, who owns data quality, who approves AI-generated variants, who is accountable for outcomes, and who can intervene when automation fails.

Cybersecurity becomes a central recalibration topic.

NextGen Signage is not about optimizing the past. It is about designing the next operating system for screen-based communication, with a lot of questions to be answered:

- How will AI change the user experiences and interfaces?
- How to differentiate in a maturing market?
- Which new roles and business models will emerge with Nextgen Signage?
- How to navigate between multi-billion-dollar giants and fast-paced startups?
- How to protect the current business while building a Nextgen Signage company?

And this discussion has only just begun. But the rupture is real, and a crash of established approaches is likely – but so is the opportunity. Those who cling to business as usual will struggle to survive it. But those who re-imagine, re-think, re-invent, re-calibrate, and finally re-set will shape the next decade of digital signage.

ARE YOU
SEARCHING FOR A
PARTNER FOR YOUR
DIGITAL SIGNAGE
PROJECTS?

THE INVIDIS COMPANY DIRECTORY (AMERICAS)

In our Company Directory,
you'll find the right contacts.

On page 126+ in this yearbook.

Look it up now! —>



invidis.com

BEST PRACTICE

From Screens to Systems

NextGen Signage will shape the future of the industry. Pioneers are already offering early glimpses of what the new world of digital signage might look like – from Econocom to SignageOS.

Florian Rotberg & Stefan Schieker

From managed services at scale to streaming-based architectures, NextGen Signage shows how fast the industry is redefining itself. Econocom and Samsung are democratizing Digital Signage as a Service, while SignageOS challenges the longstanding principle of local playback. At the same time, new display technologies turn rollable and transparent surfaces into viable canvases, and AI-powered Digital Humans demonstrate that signage can evolve from information delivery into empathetic, conversational services. Together, these examples underline a clear shift: digital signage is no longer about screens – it's about services, intelligence, and context.

Econocom and Samsung: Managed Services for Everyone

Digital Signage as a Service has long been reserved for large enterprise integrators. Most market players were limited to financing hardware through third-party leasing partners, leaving the traditional Capex model largely untouched. Yet the future of digital signage mirrors IT and telecommunications: shifting investment from Capex to Opex, bundling roll-out, operations, and roll-in – and recognizing that hardware often outlives the initial customer contract.

Econocom, together with Samsung, is among the first to industrialize this approach. Their “Full as a Service” offering delivers a complete lifecycle

model for digital signage – and crucially, not just for Econocom's own projects. Designed as a white-label solution, the platform is available to integrators of all sizes, with Econocom Finance acting as lessor and managed services backbone.

The service catalogue ranges from financing, asset management, and buyback options to lifecycle services such as warranty handling, swap services, pickup, and certified data wiping. Beyond this baseline, integrators can add fully managed software and operations – including CMS platforms security services, and NOC support.

For the first time, a standardized, whitelabel managed signage service is on the table. With a Europe-wide rollout planned, Econocom and Samsung signal a decisive move away from classic Capex models toward scalable Digital Signage as a Service.

SignageOS Supra: Breaking the Rules of Digital Signage

At ISE 2026, SignageOS challenged one of the industry's most deeply rooted assumptions: that digital signage content must be rendered locally. Known as the middleware connecting CMS platforms with fragmented SoC hardware, the Prague-based company unveiled Supra – a streaming-based platform designed for today's brownfield reality.

For decades, the line was clear: IPTV streams, digital signage renders locally. But real-world networks tell a different story. Mixed generations of SoCs, operating systems, browsers, codecs, and resolutions have turned many fleets into complex patchworks – driving cost and operational friction.

Supra replaces local rendering with encrypted, edge-based streaming. Content is streamed securely from an edge server to any endpoint, independent of OS, chipset, or Chromium version, while maintaining bidirectional communication. Unlike classic IPTV, this enables interactivity for retail media, QSR, kiosks, and services.

Using a proprietary, patent-pending protocol, Supra can even stream Android applications to platforms that cannot run them natively. Legacy browser engines, codec limitations, and resolution mismatches disappear – UHD content can be delivered to FullHD SoCs, and color consistency becomes predictable again.

Supra runs on standard Linux server infrastructure and fits squarely into SignageOS's core mission. "We want to take the pain out of brownfield networks," says CEO Stan Richter. By abstracting hardware constraints, SignageOS shifts innovation back to experiences rather than device limitations.

Rollable, Bendable, Transparent: When Every Surface Becomes a Canvas

A visit to Touch Taiwan 2026 offered a glimpse of the display technologies shaping future signage portfolios. AUO and Innolux demonstrated once again why component manufacturers remain the innovation engine of the display industry. Glass suppliers and materials specialists like Merck highlighted the continued importance of liquid crystals, even as new technologies emerge.

What stands out is not one single breakthrough, but convergence. CoG MicroLED promises transparency, modularity, and brightness for architectural and signage use cases. Nakedeye 3D continues to mature, offering new attention mechanics

for retail. Energy-efficient LTPS displays with dynamic refresh rates combine premium image quality with ultralow power consumption. E-paper expanded into curved and flexible formats.

The message is clear: the future of digital signage is not flat. Rollable, bendable, and transparent displays are moving from concept to reality – with component manufacturers increasingly stepping into solution roles, reshaping the competitive landscape.

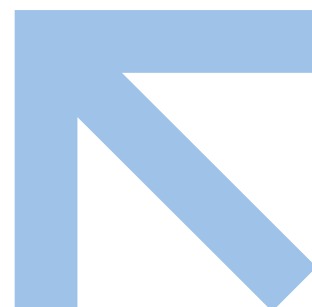
Digital Humans Redefine Customer Service in Public Transport

Singapore's SBS Transit is redefining what digital signage can be. Following a pilot, AI-powered Digital Human Aiva is being rolled out across 50 metro stations, transforming signage into a conversational, human-like service layer.

Aiva delivers realtime route guidance, transfer support, and locationbased assistance through natural dialogue. Unlike classic kiosks, the interaction feels personal and engaging. During pilots, stations recorded an average of 50 interactions per day, exceeding expectations across all age groups.

Running on a domain-specific language model trained for public transport, Aiva integrates directly into browser-based signage platforms. Multilingual support for Mandarin, Malay, and Tamil is being added, enabled by upgraded edge computing. Inclusive design is addressed through Silvia, a sign-language Digital Human supporting hearing-impaired passengers.

With Aiva, digital signage evolves from an information layer into an empathetic interface – bringing a human dimension back into automated public services.



MARKET MAP



T

MARKETS OVERVIEW

Regions and Champions

This time in a special edition: With rankings for North America and LATAM, invidis provides a clear picture of the digital signage market on the American continent.

Balthasar Mayer

For many years, invidis has reported on the global digital signage industry with the aim of increasing market transparency in a highly fragmented and rapidly evolving sector. This applies in particular to the Americas, where clear comparisons between market participants are often difficult. Digital signage revenues are rarely reported as standalone figures, as they are embedded within broader IT, AV, or service business units. As a result, reliable rankings remain scarce.

To address this challenge, invidis compiles structured market overviews as part of its Yearbook, combining company disclosures with independent research. These rankings offer a consistent and neutral framework to assess vendor positioning, market dynamics, and competitive landscapes. Over time, they have become an important reference point for end customers, integrators, and investors, particularly when supporting tender processes and strategic supplier selection.

The North American digital signage landscape is dominated by large multi-IT and ProAV integrators. Projects tend to be highly scalable and often involve complex IT integrations, making the region especially attractive for global players and expansion-driven companies. At the same time, the geographic scale of the market creates operational challenges: establishing a nationwide presence typically requires multiple branches and strong service capabilities.

Software providers are also an integral part of the rankings and market analyses. Across the Amer-

icas, software selection has become one of the most critical decisions in digital signage projects, second only to the choice of integrator. As signage networks become more deeply embedded in IT architectures and connected to enterprise applications, CMS vendors and platform providers are taking on a more central role.

This shift is reflected in the Global CMS Software Ranking published by invidis (see page 26). Indicators from there provide insight into platform scale, market relevance, and long-term viability. Particularly in North America, consolidation among software providers is a visible trend, with leading companies expanding through acquisitions and platform strategies.

With the launch of the dedicated Americas Edition of the invidis Yearbook, the focus on this region is now significantly expanding. For the first time, North and Latin America are covered in a standalone publication, offering rankings and analysis tailored to the specific dynamics of the region. The new edition follows the established structure of the Yearbook rankings and provides a comprehensive, independent overview of a market that is gaining increasing global relevance.

The rankings are complemented by interviews with leading companies from the Americas and beyond. Together, they provide a multi-dimensional view of the industry – combining quantitative benchmarks with qualitative insights into strategy, technology, and market development.

WANT TO KNOW MORE ABOUT THE EUROPEAN MARKET?

CHECK OUT OUR YEARBOOK INTERNATIONAL EDITION!

With rankings for Europe and the
DACH region and market maps
for the different European markets.



Download here:



invidis.com

RANKING NORTH AMERICA

Tariffs and Tech Tailwinds

The US economy stays resilient in 2026 with solid growth. Digital signage cannot mirror that to full extent and sees up to 2 percent growth amid tariffs, cautious spending, and market shifts.

Florian Rotberg

The North American economy continues to demonstrate resilience despite an increasingly complex macroeconomic backdrop. For 2026, US GDP growth is projected at a solid 2.1 percent to 2.3 percent – a respectable performance given persistent headwinds such as energy supply shocks, elevated inflation, and constrained consumer spending. However, beneath the surface of macro stability lies a structural imbalance: much of the growth impulse is being carried by aggressive capital expenditure in AI infrastructure, a trend that offers only limited upside for the digital signage industry. As a result, the sector is expected to expand by a modest 1 to 2 percent in 2026.

The dominant narrative shaping the US economy is the ongoing AI and technology investment boom. Enterprises are pouring capital into data centers, energy infrastructure, and advanced software ecosystems to support AI-driven transformation. Yet, this surge is largely decoupled from the digital signage ecosystem. While signage vendors benefit indirectly from general business confidence and IT spending cycles, they are not primary beneficiaries of hyperscale infrastructure investments. Instead, capital allocation remains concentrated on backend systems rather than customer-facing communication platforms such as digital signage.

Tariffs cast a long shadow

For the digital signage industry, 2025 was defined by turbulence. The second quarter saw significant

disruption following the introduction of punitive tariffs, which triggered widespread uncertainty across supply chains. Importers and manufacturers initially absorbed much of the increased costs in an effort to maintain pricing stability, compressing margins across the ecosystem.

Although the tariff regime has since stabilized, the lack of long-term planning visibility continues to weigh on investment decisions. Businesses remain cautious, particularly when it comes to large-scale hardware rollouts that depend on predictable cost structures.

Canada, whose digital signage market is closely integrated with that of the United States, was affected more indirectly. The primary impact came through supply chain adjustments and pricing dynamics rather than direct policy measures.

The Stratacache disruption

If tariffs defined 2025, then 2026 is shaping up to be equally transformative – this time due to structural changes within the industry itself. The financial difficulties of Stratacache are sending ripples across the market. As one of the top four players in North America, the company's restructuring has significant implications.

Parts of the Scala/PRN Group are being sold to competitors, while other business units are being wound down entirely. The acquisition of Scala by Vertiseit in an asset deal marks a key milestone,

but it also opens the door to broader market realignment.

This situation is likely to trigger a wave of client migrations, as existing Stratacache customers re-

assess their vendor relationships. Competitors are actively courting these accounts, creating a rare opportunity for market share redistribution. However, it remains too early to identify clear winners in this reshuffle.



North America 2026: Top 30 DS Companies

COMPANY	DS REVENUE 25 (USD)	TOTAL COMPANY REVENUE 25 (USD)
AVI-SPL	100m+	1bn+
Ricoh	100m+	10bn+
Diversified	100m+	500m+
Stratacache	100m+	500m+
Coates	100m+	500m+
Forté	100m+	500m+
Mood Media	100m+	100m+
Broadsign	100m+	100m+
Creative Realities	100m+	100m+
Brightsign	100m+	100m+
Uniguest	50m+	100m+
Poppulo	50m+	100m+
Spectrio	50m+	50m+
Appspace	50m+	100m+
Sagenet	20m+	100m+
Solotech	20m+	100m+
Korbyt	20m+	20m+
Bluefin	20m+	20m+
Navori Group	20m+	20m+
Screencloud	20m+	20m+
Videri	<20m	<20m
Yodeck	<20m	<20m
SignageOS	<20m	<20m
Mvix	<20m	<20m
Visix	<20m	<20m
Snap Install	<20m	20m+
Skykit	<20m	<20m
22 Miles	<20m	<20m
Wallboard	<20m	<20m
Coffman Media	<20m	<20m

Note: All figures are based on reports from companies or on estimates by an advisory board.
Source: invidis consulting GmbH, company information

LATAM RANKINGS

Growth and New Structures

Underpenetrated market and increasing demand: As competition intensifies, Latin America continues to position itself as one of the most dynamic digital signage regions in the world.

Florian Rotberg

According to World Bank estimates, LATAM GDP is expected to grow by approximately 2.3 per cent in 2026. Private consumption and continued strength in commodity markets support economic activity. The broader macro picture, however, varies significantly across key markets:

- Brazil, the region's largest economy, is entering a phase of stabilization with slightly slowing growth dynamics.
- Mexico is recovering from a period of sluggish expansion, but remains structurally dependent on global trade flows and USMCA dynamics.
- Mexico is also the largest digital signage market in LATAM and stands out for its strong presence of international players, driven by close economic integration with the US.
- Andean markets such as Chile and Peru are benefiting from strong commodity exports, driving economic resilience.
- Argentina stands out as a potential upside surprise, with reform-driven fiscal consolidation improving market confidence.

This uneven economic landscape directly impacts digital signage adoption patterns, with investment cycles closely linked to sector-specific drivers such as retail expansion, infrastructure modernization, and media network rollouts.

From an industry perspective, LATAM remains one of the last major regions with significant greenfield potential. Large parts of the market are still underserved – this creates attractive entry points for both local specialists and international players.

Competition is intensifying across the value chain:

- Regional integrators continue to expand their footprint, often leveraging strong local relationships and market understanding.
- North American and European specialists are increasingly targeting enterprise and premium retail projects.
- Chinese vendors play a dominant role on the hardware side

The competitive landscape is becoming more structured, although still far from transparent. With support from leading regional players such as Enmedio and SIA Interactive, Invidis has been expanding its market tracking and improving visibility across individual countries.

Among the most relevant players are:

Integrators:

- Enmedio and SIA Interactive rank among the leading LATAM-wide specialists.

- International integrators such as AVI-SPL (ICAP), Diversified, Forté, and Trison maintain a strong presence.

CMS providers:

- Regional platforms include Onsign, Eletromidia/4yousee (both Brazil-based), and SIA Interactive.
- At the same time, LATAM integrators continue to rely heavily on international CMS solutions

such as Broadsign and Navori, as well as Spanish ISVs like Nsign and Deneva.

In addition, non-traditional integrators are gaining relevance. Companies such as Ricoh and Norway-based Visma, with roots in enterprise software consolidation, have built strong positions in the Andean region. While less active in retail-driven deployments, they are highly successful in enterprise communication and workplace experience projects.



About the ranking:

This overview shows the most important and/or largest players of digital signage in selected LATAM markets. The ranking is based on insights by Enmedio and SIA Interactive. It does not claim to be exhaustive.

CREATIVE REALITIES

“Go Big or Go Home”

Creative Realities' acquisition of CDM in 2025 was a statement move. The deal valued at roughly US\$ 50 million nearly doubled its revenue and created a combined US\$ 100 million company – a bold but deliberate strategy carrying the signature of CEO Rick Mills.

Antonia Hamberger

With Cineplex Digital Media (CDM) the Kentucky-based digital signage firm Creative Realities didn't just add a Canadian subsidiary – it effectively doubled its revenue and headcount overnight. But according to Rick Mills, the transaction was less about boldness than inevitability, the result of a carefully paced acquisition strategy that has been unfolding for years. “This was about five years in the making,” Mills said. “We've had conversations on and off for a number of those years.”

Those early discussions initially revolved around a potential merger. Creative Realities is publicly traded, as was Cineplex, which owns CDM as a subsidiary. On paper, a merger made sense. But the pandemic changed the equation: “Post-Covid, the movie theater industry had some real challenges,” Mills said. “Ultimately, a merger didn't make sense anymore.”

Instead, Cineplex opted to put CDM up for sale, and Creative Realities was in a position to move. The acquisition brought with it a sizable installed base, deep expertise in retail media networks, and a dominant footprint in Canadian shopping malls.

Scale as a survival strategy

The CDM acquisition reflects a core belief Mills has held for years: that scale is no longer optional in the digital signage and enterprise AV space. “This industry is go big or go home,” he said blunt-

ly. “It's all about scale.” That reality informs both what Creative Realities buys and what it deliberately avoids.

“We don't even allow our people to talk to end users unless they have at least 500 locations,” Mills said. “We're built to service companies with thousands of locations.” That immediately rules out many smaller digital signage firms that rely on large numbers of SMB customers – no matter how healthy those businesses might look on paper.

CMS rationalization first

While the acquisition dramatically expanded Creative Realities' footprint, Mills made it clear that 2026 is not about chasing the next deal at all costs. “The first priority is completing the integration,” he said. One of the biggest tasks ahead is CMS rationalization. CDM customers currently operate across roughly five different content management systems. Creative Realities plans to consolidate that landscape onto its own platforms. “That will help drive cost out of the business,” Mills said. Once the consolidation work is well underway, the company intends to accelerate additional acquisitions – though the pipeline is already active.

Aiming for a \$600 million company

Creative Realities has maintained what Mills calls a “buy-side program” for several years, and it follows a simple logic. “If it takes the same amount

of time, energy, and transaction fees to buy a \$5 million business as a \$20 million one, I'd rather buy the \$20 million," Mills said.

This philosophy underpins his capital deployment strategy. To date, Mills estimates he has invested roughly \$56 million to build a company generating around \$115 million in revenue and approximately \$20 million in Ebitda. Over the next few years, he expects to deploy another \$50 million, acquiring roughly \$50 million in additional revenue while growing another \$50 million organically. Run the math forward, Mills said, and the strategy becomes clear: a \$200 million revenue business with \$50 million in profitability and an enterprise value that could approach \$600 million. "For our shareholders, that's an eight-times return," he said.

Geographical expansion

Despite its growth, Creative Realities still has gaps it wants to fill – particularly geographically. "We'd like a physical West Coast presence in the U.S.," Mills said. Internationally, the company already operates in Canada and Latin America, and Mills remains open to further expansion where scale and enterprise alignment make sense.

The vertical focus, however, remains the same. Creative Realities is not pursuing corporate communications or healthcare, despite growing interest in those environments in the digital signage industry. Instead, the company is doubling down on areas where it already has depth: QSR, convenience stores, large-scale retail, and, most notably, retail media networks.

Retail media as an acquisition lens

Retail media has become one of Creative Realities' strongest differentiators. "We own our entire tech stack from A to Z," Mills said. "There aren't many companies that can say that." Through CDM, Creative Realities now operates the reportedly largest retail media network in Canada, spanning 95 malls and generating \$32 million in ad revenue, with projections of \$40 million in 2026.

Creative Realities doesn't just manage the retail media screens but is also involved in ad sales. "We understand all aspects of that ecosystem,"



Mills said. That's where he sees a lot of companies failing in the discipline. "They think hanging screens is the issue." In reality, he argues, successful retail media networks require three elements: a clearly defined customer journey, a strategy for influencing behavior, and a proven ability to sell advertising inventory. "You have to have all three of those elements carefully thought through to really launch a retail media network," he said.

2026 is already bound to be a decisive year for in-store retail media. After many pilot projects in the past years, the industry now has to prove it can both deliver large-scale rollouts and successfully establish the medium alongside other digital advertising channels. If RMNs can prove they are more than just a hype and if Rick Mill's acquisition math holds, Creative Realities could position itself as one of the top market players in North America.

TRISON

New Contracts Set the Stage

Major multi-country wins, strategic acquisitions, and new global hubs: 2025 may have slowed Trison's growth compared with 2024, but it was a decisive year in the company's push to become a truly global player.

Florian Rotberg



Photo: Trison

Alberto Caceres, CEO of Trison

For Europe's digital signage industry, 2025 unfolded differently than many expected. The first half of the year was overshadowed by uncertainty and delays caused by newly introduced Trump tariffs, which slowed down international deployments across several key markets.

The more global the customer footprint, the greater the disruption – and as Europe's most internationally positioned digital signage integrator, Trison was among the companies most exposed to these geopolitical headwinds.

Postponed rollouts

Trison's organic growth in 2025 remained in the single digits – a noticeable decline from the strong year prior, when the company crossed the €100 million revenue threshold (about \$115 million) for the first time.

The modest growth was not a result of weak demand but rather the consequence of postponed roll-outs where multinational brands delayed deployments until tariff-related uncertainties eased.

Five major contracts

Behind the subdued topline growth, however, Trison secured one of its strongest business development years to date. The integrator won five major multi-country contracts spanning retail, automotive, and enterprise. Two of these large-scale projects are based in North America, and one is structured as a full end-to-end managed services engagement – a notable achievement for a European-headquartered player operating in a highly competitive North American market.

For CEO Alberto Caceres, these successes validate the company's strategy of integrating the numerous acquisitions of recent years into a unified global organization. He notes that Trison's cross-border operational model is now fully embedded and is delivering measurable competitive advantage.



Two of the most recent Trison acquisitions in Europe:
British integrator Pioneer (left) and German company Infrastor

Because the new projects begin contributing revenue only in 2026, the coming year is expected to mark Trison's return to double-digit growth, significantly outpacing the broader market.

Integrating acquisitions

While 2025 brought temporary challenges, it was simultaneously a year of substantial strategic expansion. Trison strengthened its footprint in some key geographies through acquisitions: Zero-In in the United States early in the year, and Pioneer in the United Kingdom at the year's end.

The Pioneer Group, a British integrator with core verticals like hospitality, QSR, stadiums, corporate, and retail, has since been integrated into Trison UK under the leadership of Peter Critchley, while Zero-In provides Trison with a complete integration and services capability in North America for the first time – an important step in the company's ambition to operate as a truly global integrator. Caceres describes both teams as highly capable additions.

One of the most recent acquisitions was in Germany: Here, Trison took over the integrator Infrastor. The company specializes in delivering complex global rollouts for German enterprise brands and has built a strong track record in flagship store implementation and services for one of the world's largest sportswear manufacturers.

Strong APAC performance

Beyond acquisitions, Trison also expanded its direct global presence with new entities in Benelux

and India. The Indian organization is designed not merely as a rollout hub but as a full-fledged market operation. The team has already secured initial local customers and is set to play an increasingly strategic role in the company's international delivery network.

Market dynamics were uneven across regions. Trison, like many global integrators, faced investment slowdowns in select geographies, notably the Middle East and Mainland China, where several large Western brands held back on new deployments.

The broader APAC region performed strongly, with Japan and Korea emerging as bright spots.

Competitive environment

Looking ahead, Caceres is highly optimistic. He expects 2026 to be an "excellent year" for the company, characterized by robust double-digit growth. The pipeline is strong across retail, automotive, and enterprise, with additional momentum coming from the DooH, stadium, and QSR sectors. The United States – the world's largest digital signage market – will be a particular focus.

Trison now faces a complex competitive environment that includes hyper-local integrators, national specialists like Trison itself, and billion-dollar IT service conglomerates where signage is only one of many offerings. Nevertheless, Caceres believes that Trison's global execution capability, unified operating model, and expanded US presence give the company a clear advantage and a credible "right to win."

SPECTRIO

Beyond Software

Content, training, and support: With new managed signage offerings, Spectrio increased the ecosystem value for its customers.

Antonia Hamberger & Balthasar Mayer



After a massive consolidation – 14 acquisitions were streamlined into one robust platform – Spectrio is moving fast to level up its portfolio for the future demands of its customers.

The Tampa, Florida-based digital signage provider introduced three new service offerings to its Intelligent Engagement Suite: Spectrio Studio, Spectrio Academy, and Spectrio Care. With these services, the company is extending its offering beyond software and integration to include content creation, training, and technical support.

According to Tamara Bebb, CEO of Spectrio, these three areas are the biggest stumbling blocks for companies when it comes to digital signage and often prevent them from making the most of their networks. The new service framework is designed to help them keep their messaging impactful and consistent across locations.

The company positions these three pillars as part of a broader, holistic ecosystem that also includes audio, analytics, and other in-store experience technologies, which make up its Intelligent Engagement Suite.

“Our mission is to move beyond simple digital displays and focus on empowering human engagement at every point of contact,” says Bebb. “Businesses today expect more from their technology; they need content that stays current, teams that are experts in the tools, and systems they can rely on.”

Spectrio Academy focuses on user enablement. Instead of traditional onboarding, the program offers ongoing training designed to help internal teams make full use of the platform’s capabilities. The aim is to support more complex and dynamic campaign execution over time.

With Spectrio Care, the company introduces a support model centered on system monitoring and preventative maintenance. The service is intended to reduce downtime and ensure consistent operation of digital signage networks.

Spectrio Studio plays a central role in the firm’s strategy, consolidating its in-house creative services into a structured offering. The service follows a “Content as a Service” (CaaS) model, providing customers with ongoing production of brand-aligned content tailored to specific environments.

With these new managed services offerings, Spectrio supports long-term program performance after deployment – and sets the tone for a modern digital signage ecosystem.

DISE

Global Growth

Sebastian Kryh, CEO of Dise, sees his company well positioned for further expansion – particularly in the United States, where Dise has now established a presence.

Florian Rotberg

From Swedish newcomer to European powerhouse in just seven years: Vertiseit has assembled an impressive portfolio through targeted acquisitions, including Dise, Grassfish, Visual Art, MDT and, most recently, Muse Content. With more than 300,000 active licenses deployed, Vertiseit's ambitions are clear: global leadership in the retail experience platform market.

Within this strategy, Dise has emerged as Vertiseit's channel spearhead – especially in Europe –, working closely with integration partners such as First Impression, Pixel Inspiration and Dobit.

For Sebastian Kryh, CEO of Dise, it is important to emphasize that growth has not diluted the company's strategic focus: "From a Dise perspective, we are sticking to our channel strategy," Kryh explains. Dise remains positioned as the partner centric platform within the Vertiseit group.

The strategy appears to be working. Dise continues to sign new integration partners across regions and verticals, while making a strategic move in 2025: crossing the Atlantic. With a new office in Atlanta and parts of Dise's top leadership relocating to the US, the company has taken a step toward global relevance.

The North American market is complex, highly competitive and dominated by well established players. But for any company aiming at international leadership, it is also unavoidable.

Looking back at 2025, Kryh describes solid momentum and double digit growth. "The year started a bit slower, with tariffs delaying some projects," he says. "But we saw strong catch up effects in Q3 and Q4."



Photo: DISE

Sebastian Kryh, CEO of Dise

Toward better retail experiences

As the digital signage market matures, only a handful of platforms are scaling toward true international dominance. Dise – together with Vertiseit – is moving fast, but into an environment where agility and strong partner ecosystems will determine future leaders.

Dise may not be the next Scala – at least not yet. But the trajectory is clearly defined.

For Kryh, this path leads through a holistic approach of digital signage projects: "We want to be the part of the complete concept. And we're seeing more of those conversations where digital is coming in at an earlier stage." Together with Dise's partners, the CEO wants to push a more engaging, more personalized experience in the physical retail space.

M-CUBE

Touching Hearts and Moving Wallets

Gianluca Pasquali took over as CEO of M-Cube in April 2025. How he has reshaped one of Europe's leading digital signage integrators, why the firm is betting on its proprietary platform, and how global rollouts will define the next phase.

Florian Rotberg



Gianluca Pasquali,
CEO of M-Cube

Photo: M-Cube

2025 was nothing less than a transition year for M-Cube: When Gianluca Pasquali stepped into the CEO role, he brought the perspective of a seasoned telecom executive but was entirely new to the digital signage industry.

The former Vodafone Italy director and BCG management consultant is a specialist in digital transformation and operational excellence. This outsider perspective – combined with the deep industry knowledge of Manlio Romanelli, M-Cube's founder and current President, who personally selected Pasquali to lead the company – proved

invaluable as he began the process of rightsizing the organization.

\$80 million in 2025

Subsidiaries that had long operated with considerable independence were fully integrated into a unified structure. Management layers were reviewed, duplicated roles were removed, and non-performing positions were replaced with investments in sales and commercial functions.

Despite these sweeping changes, the group closed the year with high single-digit revenue growth, slightly above general market development, and achieved total sales of approximately €70 million (about \$80 million) with what Gianluca Pasquali describes as a "good level of profitability."

Deal with Italy's largest grocer

Italy remained M-Cube's strongest market in 2025, followed by France and Germany, while the UK and Asia-Pacific saw slower development, particularly due to market dynamics in China. Luxury retail continues to anchor M-Cube's business, but the company also made significant progress in retail media networks. In Italy, M-Cube became the exclusive RMN partner for Selex, the country's largest grocery retailer, and additional RMN clients in the UK such as Coop were secured.

For Gianluca Pasquali, this shift reflects a broader market evolution. "We talked for years about in-

store retail media,” he notes. “Now we finally see it happening. But we don’t just want to touch the heart of retailers through digital experiences – we also want to move their wallet. That is where retail media networks come into play.”

Looking ahead to 2026, M-Cube plans to build on its strengths as an end-to-end integrator with deep expertise in content creation and its ability to execute highly scalable international projects. This capability is particularly relevant wherever global brands require industrialized rollouts on tight timelines. Retail media networks are a prime example: retailers need rapid deployment to reach the critical mass necessary for monetization. Below that threshold, RMNs simply do not generate value.

A single software platform

A central pillar of the company’s strategy is its proprietary software platform. Since taking over, Gianluca Pasquali has re-evaluated the role of in-house software within the group. The outcome was a clear commitment to a single, fully owned, scalable, cloud-based platform. “We focus on one platform – DXP One,” he emphasizes. “In 2025, we made the decision to invest. In 2026, we’ll execute it.” This strategy not only streamlines operations but aligns the company’s software roadmap with the needs of global clients requiring speed, standardization, and transparency.

Ecosystem partnerships remain essential for success – especially in retail media networks, where consultancies, hardware vendors, and media agencies all play critical roles. Only a resilient partner environment enables pan-European or global rollouts at the scale and speed required by today’s brands. M-Cube positions itself as both integrator and orchestrator within this wider ecosystem.

The appeal of digital signage

After several months in the digital signage industry, Gianluca Pasquali describes the experience as energizing. Unlike in the telco industry, where much of the work revolves around defending shrinking market share, digital signage is an industry characterized by growth, innovation, and increasing relevance for retailers and brands.

What motivates him most is the combination of emotional and commercial impact. Digital signage creates memorable in-store experiences that “touch the heart,” as he puts it, while retail media networks directly influence retailers’ revenue streams and profitability.

At the same time, he acknowledges the challenges the industry faces, particularly the rise of IT integrators and growing margin pressure. Yet, he remains confident that M-Cube’s blend of creativity, platform ownership, and rollout excellence positions the company well for the next phase of expansion.

Flagship Project: Galleria Bombi

One of the most spectacular projects of M-Cube last year was the digital transformation of the tunnel Galleria Bombi in Gorizia, Italy.

The LED surface, which completely covers the walls of the tunnel, spans an area of 925 square meters. With a pixel pitch of 2.5 millimeters, it contains 148 million pixels. The self-supporting structure weighs 37 tonnes and is secured with 6.000 bolts and 44.400 screws.

Eleven kilometers of network cables were laid, two kilometers of power cables, as well as 300-metre-long electrical and ventilation ducts.

The LED tunnel was a flagship project within the European Capital of Culture program – merging art and technology with the historical heritage of the city.



The Galleria Bombi

DIVERSIFIED

Experiences at Scale

“The more complex the project, the better a fit Diversified is” – as managed service demand grows across Europe, Diversified’s Will Hegan sees the US AV giant in a perfect position to attack large-scale enterprise projects.

Antonia Hamberger



The European market is increasingly warming to managed AV services – but many regions, Germany in particular, are still lagging behind. The concept of providing complete AV equipment or digital signage networks for a monthly full-service fee remains relatively uncommon, particularly outside conference room environments.

Yet, allowing companies to keep hardware investments – whether for offices or retail stores – off their balance sheets can make digital upgrades far more attractive. This is where global integration houses like AVI-SPL, Econocom, and Diversified hold an edge over smaller, more specialized players.

Managed services have their roots in the IT and AV worlds, environments in which these major tech providers have long established themselves. Extending this approach to digital signage is a natural progression, given that digital signage has become an integral part of virtually every commercial environment.

New Brand: Diversified Digital

Diversified, a dominant player in the US market, has seen growing demand from global enterprises for both experiential and scalable digital signage concepts. This led to the launch of a dedicated digital signage practice, Diversified Digital.

Even large-scale roll-outs, however, require local presence and expertise. That’s why Diversified is doubling down on its localized strategy, adding a German office to its UK presence. “You need local representation to succeed in the market,” Hegan emphasizes.

Diversified’s Europe expansion began in 2018 with the acquisition of UK-based Digitavia. Since then, the company has served the EMEA market from London and later from Amsterdam.

Expansion into India

Today, EMEA is Diversified’s fastest-growing region, posting nearly 20 percent growth, driven largely by the corporate and enterprise segments. Large, complex enterprise projects are where Diversified excels. “The more complex the project gets, the better a fit Diversified is,” Hegan says. The company’s broad skill set – including IT and networking expertise – helps in that regard.

In 2025, Diversified laid the groundwork for its global initiatives by expanding its presence, including an office in India. The next challenge: demonstrating to clients that they can deliver specialized, complex digital signage solutions – at scale.

UMDASCH THE STORE MAKERS

Connecting Stores

Umdasch is strengthening its position as a full-service provider in store design. A key pillar of this strategy is its management platform, Umdasch XP.

Balthasar Mayer

2025 was a highly intense year for Umdasch The Store Makers. "Altogether, we redesigned and expanded more than 10,000 stores last year," says Bernd Albl, Managing Director Digital Solutions at Umdasch. Despite rapid growth and the parallel execution of major projects, the company also managed to secure additional new business. Albl is especially proud of one achievement: the rollout of more than 6,500 digital signage touchpoints in less than three months.

For a modern store maker like Umdasch, services go far beyond furniture and screens. Work begins with concept development and planning – including general contracting – and extends into a full 360-degree approach, where Umdasch takes responsibility for the entire project lifecycle. In line with this model, the company has also been offering 10/7 customer support since early 2026.

A key element of this 360-degree approach is Umdasch's proprietary software platform, Umdasch XP, which was expanded into a comprehensive retail management system just over a year ago.

This middleware is designed to simplify and centralize the monitoring of digital touchpoints at the point of sale. These include not only digital signage, but also electronic shelf labels (ESLs), content management systems (CMS), and IoT-enabled fixtures – such as Umdasch's liquid dispenser.

A major focus is seamless integration with software solutions like the Dealer App for managing digital signage content, as well as other tools for content control.

Alongside a detailed rollout dashboard, the platform provides an overview of digital signage



network status and content reporting. To support this, Umdasch offers interfaces to various digital signage software systems, including partners such as Grassfish and Navori.

The latest version of Umdasch XP also includes analytics and reporting features, along with straightforward SLA management. This enables marketing campaigns to be planned, managed, and optimized based on solid data.

"Digitalization has moved far beyond experimentation – today, every second counts. Systems need to run reliably at all times because each second represents real business value. Service-level agreements, spare parts management, and response times have become business-critical," says Albl.

Looking ahead, Umdasch is optimistic about 2026. "We see major opportunities, especially in AI-driven support and in expanding our field service capabilities," Albl adds.

ECONOCOM

A Bold Target

€500 million in ProAV revenue by 2028 is the goal. Already the biggest AV integrator, Econocom is positioning itself to grow also into one of the big players in the European digital signage market.

Florian Rotberg

Econocom is setting its sights on rapid ProAV expansion, unveiling plans to grow its revenue in the segment to €500 million (about \$575) by 2028 – up from €300 million in 2024. The announcement followed a flurry of takeovers that have positioned the technology company as Europe's largest ProAV integrator.

Originally founded 50 years ago by Jean-Louis Bouchard as an IT leasing firm, Econocom has evolved into a major managed services and financing provider, serving hundreds of corporate clients across Europe.

The company's ProAV journey began a decade ago with acquisitions in Spain, followed by expansion into the Benelux region in 2017. In 2023, a strategic review by BCG recommended a deeper focus on ProAV – not as a traditional AV distributor or box mover, but as a full-service solution and managed service provider.

The recent acquisitions – including ICT in Germany, ISS in Ireland, and Avencia in Spain – have significantly expanded Econocom's European footprint. "We're serious about ProAV," says CEO Angel Benguigui. "Our 750 ProAV employees generated more than €300 million in revenue in 2024, but we're not stopping there."

Visibility remains a challenge. Outside of Spain, France, and Benelux, Econocom is still working on developing a ProAV brand recognition with end-customers. To address this, the company is retiring the "Gather with Econocom" brand in favor of a unified Econocom identity. Co-branded entities will also transition to the Econocom name, reinforcing a consistent presence across Europe.

Managed services as the future

Econocom is betting big on managed services as the future of ProAV. The group's Amsterdam Schiphol Airport project serves as a blueprint for this model, where Econocom provides full lifecycle services – from installation to operations and maintenance. "Clients want turnkey solutions. We have the tools, skills, and experience to deliver," says Senior Executive Israel Garcia.

Behind the scenes, Econocom is standardizing service catalogues and processes across all entities and regions, ensuring consistency and scalability. The current industry shift from hardware-centric solutions to service-driven offerings marks a significant evolution in the ProAV landscape. A paradigm shift Econocom intends to champion.

Growth through further M&A

Scale is a decisive factor in the service-driven ProAV and digital signage sector – and Econocom is fully aware of it. To meet its ambitious growth targets, the company is pursuing a dual strategy of organic expansion and strategic acquisitions. "Organic growth alone won't be enough to achieve our targets," acknowledges CEO Angel Benguigui. "That's why we're actively expanding our footprint through acquisitions of AV companies across Europe."

With more than 60 percent of its revenue now generated outside France, Econocom is positioning itself as a truly European company – flexible, agile, and focused. The goal: \$4.6 billion in total revenue by 2028, with ProAV contributing 12.5 percent.

ZETADISPLAY

Clear Focus

Zetadisplay has entered 2026 with a new CEO, renewed clarity and a sharpened strategic focus: becoming a fully fledged end-to-end digital signage solutions provider.

Florian Rotberg

"2025 has been a year of change for the company, especially with change in leadership," says Daniel Nergård, who joined Zetadisplay in September last year. He is the third CEO in less than three years. His predecessor, Anders Olin, reshaped the multinational group – centralizing operations, relocating the HQ to downtown Malmö, aligning processes across subsidiaries, and introducing a global service catalogue.

The effect of the past years' work is helping Zetadisplay to operate in a more harmonized way. This, combined with a strong commercial focus toward the end of last year, is reflected in Zetadisplay's recently published 2025 figures: revenue grew by 8.5 percent to \$71 million, outperforming the market.

Solid base

For Nergård, the direction is now unmistakable: "I took over an organization with a good structure and a solid go-to-market strategy, now we will increase our speed and energy further. Our pipeline for 2026 looks very promising."

Zetadisplay, with more than 240 employees across Europe, is laser-focused on its positioning as a full-service integrator with an in-house CMS platform called Engage Suite. "We take ownership of all aspects – and a market-leading software stack is necessary for that, particularly as we scale advanced use cases such as in-store retail media," Nergård emphasizes.

The integrator will continue to prioritize large, international enterprise clients, where expectations for end-to-end responsibility are clearest. The company's track record supports this approach:



Zetadisplay has rolled out global digital signage concepts for long-time enterprise customers like the famous Swedish furniture retailer.

Build, buy, expand

While organic growth remains the priority, Zetadisplay continues to scan the market for acquisition opportunities. Germany is a very interesting strategic target. After replacing local management and rebuilding a scalable organisation in late 2025, Nergård sees room for inorganic expansion to accelerate market penetration.

The broader ambition remains unchanged: Expanding Zetadisplay's European footprint by combining local expertise with a scalable, unified platform. "Europe is on our agenda," Nergård confirms.

INTERNATIONAL

Transforming the Value Chain

Beyond Western markets, digital signage is reshaped by other players than the traditional integrator. In many regions of the world, telcos, POS platforms, and office technology vendors transform the roles in the digital signage ecosystem.

Florian Rotberg

When the global digital signage industry is discussed, the narrative is often dominated by well-known Western and Korean brands, large ProAV integrators, and enterprise-scale projects in Europe and North America. Yet beyond these mature markets, a far more diverse and dynamic ecosystem has emerged – one that follows similar technological trends but operates under very different competitive and structural conditions.

Telcos as DS powerhouses

In many regions outside Europe and North America, telecommunications providers play a central role in the digital signage market – especially among small and medium-sized enterprises (SMEs). Telcos typically maintain the strongest customer relationships in these segments, built on decades of supplying fixed-line, mobile, and internet services. Adding TV, digital signage, and even DooH solutions to their SMB portfolios is a logical next step.

Unlike traditional ProAV integrators, telcos are already highly experienced in financing models and managed services. Subscription pricing, full Opex allocation, device bundling, and long-term service contracts are standard practice. Many of these companies are former state monopolies, combining nationwide service infrastructures with strong balance sheets – giving them a structural advantage when scaling signage-as-a-service offerings.

The decline of the classic integrator

While digital signage demand is rising globally, traditional ProAV integrators often capture less of this growth than expected. One reason is the rapid increase in direct sales models. In many less developed markets in Asia, Africa and Latin America, screen manufacturers such as Samsung, TCL, and others aggressively push turnkey packages directly to customers. The same applies to CCTV vendors like Hikvision and Dahua, as well as IT hardware giants including Lenovo, Huawei, HP, and Dell.

For SMBs and increasingly for enterprise customers, these bundles reduce complexity: display, player, CMS, and sometimes services – sourced from one vendor, with one contract. Similar trends can be seen in unified communications, conference rooms, and interactive whiteboards, where a small number of global brands and many regional players dominate. Often, these are Western-sounding brands backed by Chinese manufacturers – such as CVTE with Maxhub – or local brands created by distributors and integrators.

To increase market reach, suppliers operate with multi-brand strategies, using secondary and tertiary brands and distributor partnerships to address the long tail of demand. The result: highly standardized, competitively priced signage solutions that bypass the traditional integration layer.

Hospitality and POS-driven signage

In hospitality and QSR, digital signage has become an extension of the POS ecosystem. Menu boards and order kiosks are sold as part of broader POS and hospitality management platforms. Control often sits directly within the POS interface, not a standalone CMS, and screens are bundled into monthly subscription fees.

Here, digital signage is fully absorbed into Opex-driven service models. The customer does not buy “a signage network”; they buy a functioning restaurant system. This model has proven extremely scalable and margin-stable – especially compared to project-based integration.

Office technology vendors

Another underestimated channel is the office technology sector. Vendors such as Ricoh, Toshiba, and others have quietly built sizeable digital signage businesses within corporate environments. Signage is offered as one solution among many – alongside printers, document management, and IT services.

Networks are often small, but margins are healthy, and deployments are globally widespread. For these vendors, signage is less about scale and more about cross-selling and customer retention.

The Amazon effect

At the lower end of the market, e-tailers like Amazon have become a significant force. From the Amazon Digital Signage Stick to off-the-shelf solutions, digital customer stoppers, and standard digital signage totems, signage is increasingly commoditized and purchased online.

This gray zone – where distributors, brands, and e-commerce platforms overlap – has gained substantial market share in some regions. While unsuitable for complex enterprise projects, it satisfies a growing demand for low-cost, low-friction deployments.

Printers and white labels

Digital printers have long viewed signage as a natural extension of poster printing. While suc-

cess has been mixed, some players already deploy tens of thousands of touchpoints annually in specific markets.

More broadly, traditional ProAV and signage integrators are actively repositioning themselves. Instead of relying solely on branded displays and premium CMS platforms, many integrate white-label displays from manufacturers such as AUO Display Plus, BOE, or Vestel. These are marketed under the integrator’s own brand and combined with proprietary or customized CMS solutions.

This approach offers multiple advantages: branding control, reduced comparability in tenders, and the ability to shift margins flexibly between hardware, software, and services. It reflects a broader industry move toward differentiation not through technology alone, but through ownership of the solution stack.

Managed services change everything

The most profound shift lies in the move toward managed services. In traditional projects, customers selected, purchased, and operated their own hardware. Control – and risk – remained with the end user.

Managed services invert this logic. Hardware increasingly remains the property of the MSP, while customers buy access, uptime, and outcomes. As a result, trust in the service provider becomes more important than brand loyalty to any display manufacturer. The power shifts away from Samsung & Co. toward those who manage lifecycle, performance, and risk.

Beyond brands, toward roles

Outside the Western core markets, digital signage is not necessarily defined by vendors – it is defined by roles. Telcos, IT giants, POS providers, office technology vendors, e-commerce platforms, and MSPs all shape demand in different ways. The market is not consolidating around fewer brands, but around fewer points of accountability.

As managed services become the dominant model, the question is no longer which screen is installed – but who owns the relationship, the data, and the operational responsibility.



OPERATE SYSTEMS 101



TING MS

OPERATING SYSTEMS AT A GLANCE

The OS Basics

From Windows to Android, from System-on-Chip to specialized, digital signage-related solutions: What you need to know and understand about operating systems – the basic layer of every display.

Dave Haynes

An operating system (OS) is the foundational software layer on digital signage playback devices – whether standalone media players and PCs, or “smart” displays – that translates a digital file like a rendered video into instructions the devices can then use.

In practical terms, the OS is fundamental to how visual presentations get on screens, appearing and running as intended.

No OS means no way for the devices to:

- control how the on-board smarts read the video file pushed or pulled into storage;
- connect to the internet to get content and instructions on what to do with it from the Content Management System (CMS);
- tell the connected or integrated screen hardware what to do and show visuals to viewers.

PCs have familiar operating systems, most notably Microsoft’s Windows – a commercial, licensed product that’s been evolving for decades. But PCs also run on open source (non-commercial) operating systems like Linux, and a long line of major and minor variants of Linux like Ubuntu. The most familiar and prevalent of those is Android, a Google-developed product that started out being geared to mobile devices but was, years ago, also adopted for media playback devices.

The primary attraction of Android was – very simply – no commercial software license, which meant reduced capital costs for small devices like adopted/adapted set-top boxes with sub-\$100 per-unit costs that came over by the container-load from China. At that time, PCs tended to cost at least three times more, so at scale, the capital cost savings were substantial.

In the early years of digital signage, hardware and operating system decisions broke down – very generally – as:

- PCs with commercial Windows installed for serious business applications and scaled roll-outs;
- PCs and other devices offering lower costs by using an open source Linux OS, with the CMS developed to work with that OS;
- Entry-level CMS and hardware systems often using low-cost consumer TV devices that were then targeted to cost-fixated small to medium businesses.

Even the most basic options – like HDMI media sticks or displays with integrated “system-on-chip” processors have some sort of OS. So there can be PC-free digital signage hardware solutions, but not OS-free ones.

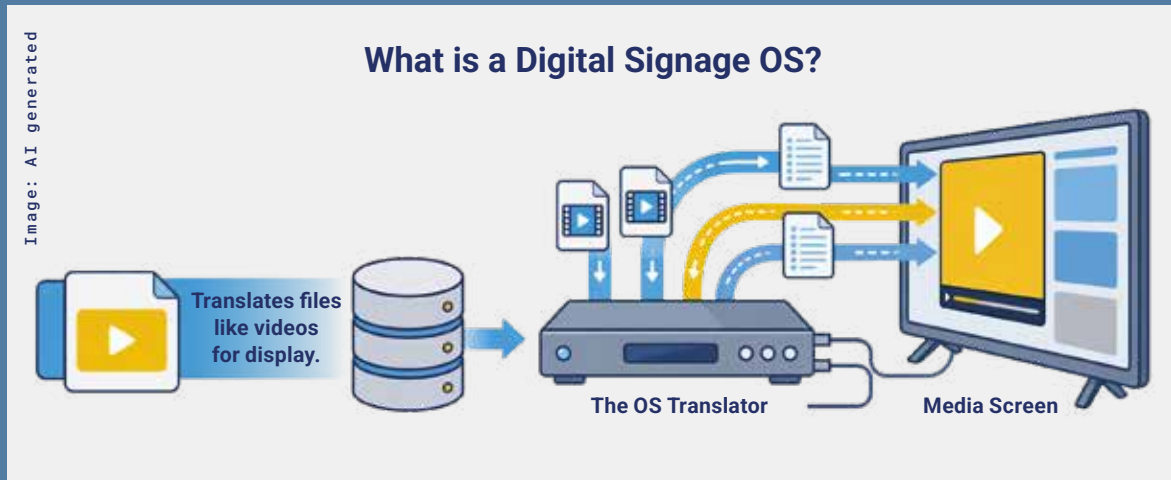
Today, there are different types of OS solutions out there, each with specific skills and use cases. So you have to understand your options.

General-purpose operating systems

Think of these as systems that were developed and have steadily evolved to run all kinds of different software applications, with digital signage and digital out of home being two among 1,000s or perhaps millions of different applications and use-cases.

Nerds will have their opinions and what-about arguments, but here’s how these general purpose OS options break down, and how they tend to get used.

- **Windows:** For power-hungry uses like complex 3D graphics, real-time data integration, or slick touch-driven interactive applications, Windows is



The OS is the crucial layer that translates digital content into instructions for devices.

the industry standard. However, it is commercially licensed – which means projects that have a lot of PC players and screens means substantial additional capital or running operating costs for the OS. Windows also requires significant maintenance (updates, reboots) and is by far the most exposed to security threats, though these days that owes as much to being the market share leader for business applications and therefore the biggest target for the hacker crowd.

- **Linux:** Developers who want or need to build a system from the ground up favor Linux. They like that it is very stable, but also cost-free when it comes to licensing. But it is a developer OS that tends to demand coding skills, versus an OS like Windows that is much more “plug-and-play.”
- **Android:** This mobile-originated OS is omnipresent. Apple’s iPhones and iOS may get the tech media attention, but Android has perhaps 70% market share globally for smartphone operating systems. Greeted with nervousness when it was first used roughly 15 years ago for digital signage applications – because of cheap hardware and performance that varied by version – Android is now widely trusted in corporate IT circles because of investments made in the enterprise framework, and in security design.
- **ChromeOS:** Google is behind Android, but it also has ChromeOS – a web-based and managed platform tuned to large fleets of networked devices. While the origins of ChromeOS have much more to do with large fleets of network-connected devices like “Chromebook” laptops used in public K-12 edu-

cation, the same benefits are realized in digital signage applications. ChromeOS is widely regarded as a “gold standard” for ease of management – a platform that’s locked down, auto-updated, and very difficult to hack. One of its key appeals is being a solution users can set and forget – meaning version releases, updates and fixes are done over the cloud, without needing human intervention. ChromeOS also has something called Flex, which can be run on devices like PCs that are aging out, extending their operating life at minimal additional cost (*see also page 102*).

SoC smart display operating systems

In the early 2010s, pro display manufacturers starting extending the technology design of smart TVs to their commercial display cousins – building system on chip (SoC) media processors inside the display enclosures, and applying Android as the operating systems.

It started with Sony, but Samsung and then LG (there is a long, historical pattern of LG fast-following its Korean rival) added smart displays, and applied the marketing muscle to mainstream their use in digital signage and ProAV circles.

Fairly quickly, both of the Korean electronics giants developed and standardized their smart display portfolios on their own proprietary operating systems. Both Samsung Tizen and then LG WebOS were built off the core elements of Linux, but are not interoperable with each other, or with Android or other types of Linux.

Most if not all other commercial display manufacturers have also since added smart displays to their product



lines. Most used Android, though the OS versions used varied widely.

The main selling proposition for smart displays was and still is that they remove the need (and hardware cost) of an external player, and reduce potential points of failure like cables and connectors. “Smart” displays do not fully remove the cost of media player hardware because, of course, the player is instead inside the display, and its cost rolled into the overall unit price.

The knock – particularly against those manufacturers with proprietary operating systems – was that CMS software companies had to develop distinct software support beyond what was already in place for more mainstreamed OS options like Windows and Android. So if a client wanted or insisted on using Tizen, for example, the software company had to allocate precious time and budget to make it work – with no guarantee other clients would want or need it.

The proprietary OS dilemma actually spawned a start-up – Prague-based SignageOS – whose initial go-to-market offer was middleware that bridged a CMS to a proprietary OS, without the CMS needing all the development time and cost.

Dedicated operating systems tied to vendors

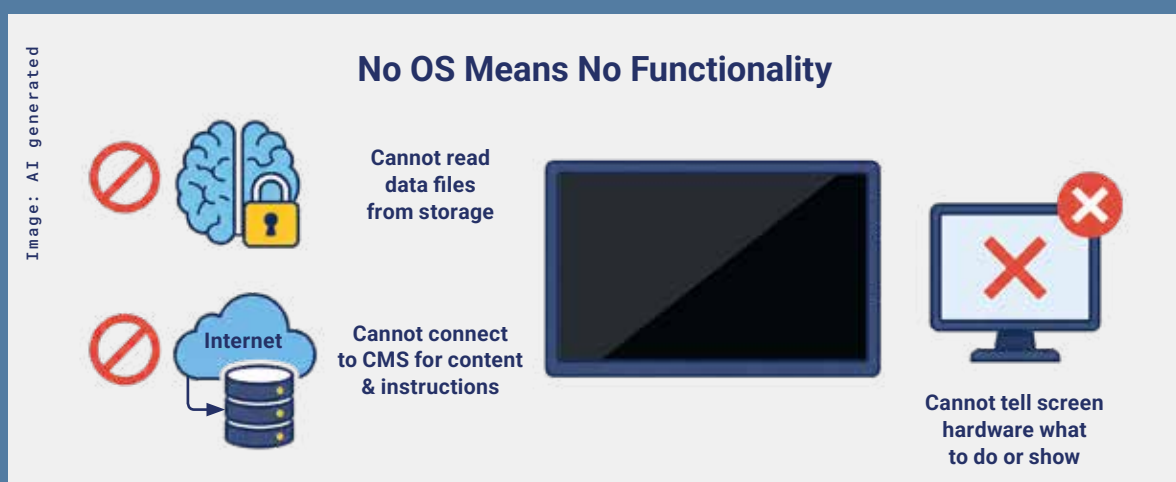
As smart displays became the production standard for most commercial screen manufacturers, other types of companies in the digital signage ecosystem introduced their own takes on operating systems dedicated to just their devices.

Brightsign is the dominant manufacturer of dedicated digital signage playout boxes, running BrightsignOS with “hardened” firmware on its wide range of little purple boxes. Because BrightsignOS was written specifically for its custom silicon, it’s hyper-efficient, stable, and touted as “un-hackable.” Silicon Valley-based Brightsign’s market share in dedicated player boxes is such that most major third-party CMS software firms have written custom “player app” that supports the OS.

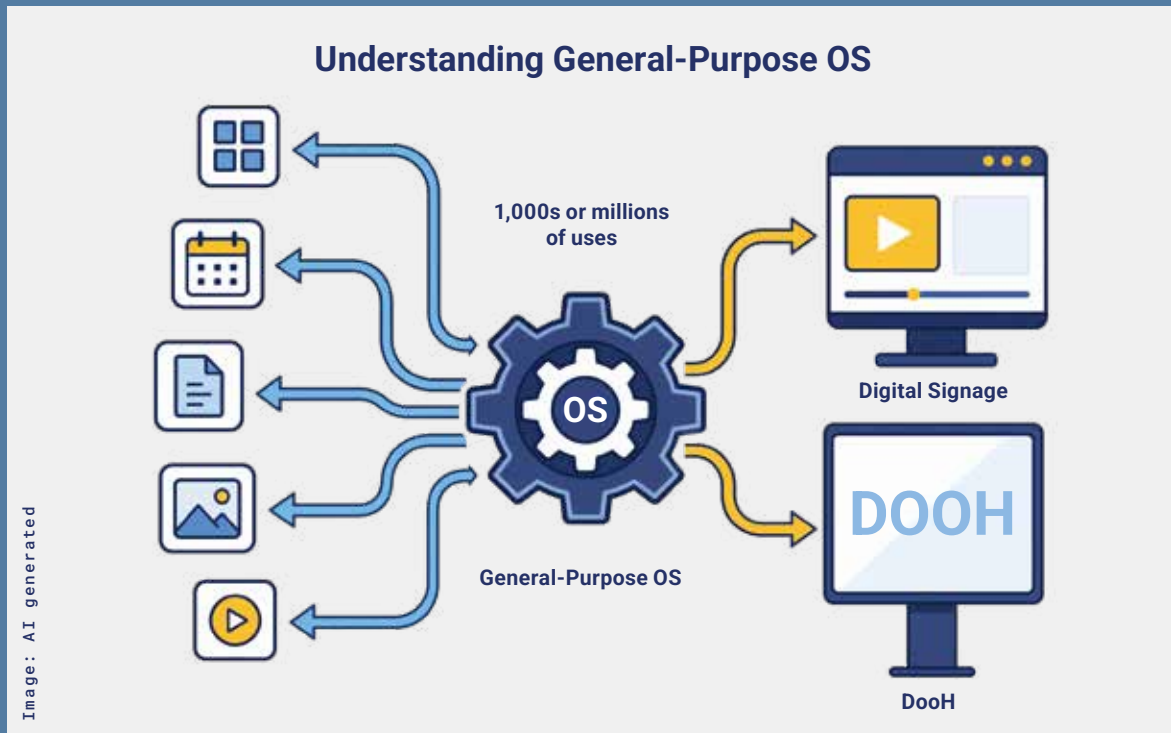
The Swiss firm Spinetix has its own Digital Signage Operating System (DSOS) that is tuned specifically to its in-house line of solid-state media players. It is a “hardened” OS, with all of the non-essential services that can junk up an operating system stripped away, making it all but immune to security vulnerabilities.

UK-based Screencloud started as a CMS software firm and initially supported a wide variety of devices and systems. As the company shifted from the small business market to larger enterprise-grade clients, it has developed its own custom Linux-based operating system – Screencloud OS, which runs specialized hardware called Station P1 Pro. The main driver for Screencloud was controlling the full solution stack, including the underlying firmware. Doing that means, for example, the risk is gone of a device that’s running Android being disabled by an unsupported firmware update pushed out by Google.

Several other companies also have proprietary operating systems, including Navori (Switzerland), Stratos Media (Australia), Screenly (UK), Yodeck (Greece) and Canada’s Broadsign and TelemetryTV.



Why an OS is essential for a digital signage display



Illustrative example for a general-purpose OS: Developed to run all kinds of applications, with digital signage being two among millions.

Tech giants like Apple and Amazon are active with devices used for digital signage – with Apple TV set-top boxes employed by numerous CMS companies, such as Kitcast (Ukraine/US) and Carousel Digital Signage (US).

Amazon, meanwhile, has long seen its Firestick HDMI devices used by digital signage CMS firms that target the entry-level marketplace. More recently, it optimized a version of the low-cost HDMI sticks for commercial digital signage, which runs on Amazon's Fire OS.

How the elements interact

Operating systems are the foundation for the two main software elements of networks – the CMS and the whatever device management capabilities are in place.

The CMS is the interface operators use to upload, characterize, store, plan and distribute content – from 4K videos to HTML5. The software – written to talk to and work with the OS – communicates with an agent or player app running on top of the OS, and responds to triggers and commands.

Remote Device Management (RDM) is the nerdy IT-oriented side of digital signage, monitoring and ideally

managing the health of the hardware.

Ideally, RDM software can do things like remotely reboot the OS, check the CPU temperature, monitor storage levels and uptime, and log what's playing and played.

The engine under the hood

For end-users and even for solutions providers, the operating system “under the hood” of a digital signage solution is largely hidden – and may only ever be evident if or when there's an issue and the only content on screens is an error message.

The choice between digital signage operating systems is rarely going to be about bits, bytes, or kernel architectures. It is much more about removing friction.

Users will want something that is reliable, locked-down, auto-updated and ultra-reliable. It also needs to support growth and scale.

But while the OS is the foundation for a solution, it is just that engine under the hood. The usability and applicability of the CMS and related components will tend to matter more to anyone without a technical title.

MDEP

Bridging the Digital Signage Gap

A framework that could redefine workplace signage, especially for large businesses: How Microsoft's MDEP brings Windows-level security to Android devices.

Dave Haynes

Anyone working in some sort of sales role for a digital signage solutions company has been through early meetings where the target customer's IT people seated across the table were looking for reasons to say No.

And that Dr. No crowd, as I experienced them over the years, had a fairly easy reason to shut pitches down if the operating system and hardware was perceived as unsuitable and unsafe for their enterprise IT environments. Like solutions built on the open source Android system, that the IT folks saw as consumer-grade and dodgy.

That's changed through the years. IT teams are much more comfortable with a matured Android OS and ecosystem, but a new approach called MDEP might even have the Dr. No people uncrossing their arms and leaning into presentations.

MDEP – what is it? MDEP is short for Microsoft Device Ecosystem Platform. The product and platform are the work of a company that has for decades been all about the Windows operating system doing something big with Android, the operating system originally developed and still steadily evolved by tech rival Google.

MDEP is a hardened, IT-compliant platform for the Android operating system. It represents a nod to a wide need at the enterprise IT level for Android devices that are built with business requirements in mind, versus the range of Android media players (like set-top boxes) that were developed with the consumer market in mind.

Those consumer-first devices bring the benefits of low upfront capital costs, but can be all over the place when it comes to things like security and firmware support

MDEP could streamline signage solutions for big companies.



Image: IADEA

and updates, remote management capabilities and hardware lifecycles.

Through the years, solutions providers like CMS software firms have struggled to source device manufacturers who would reliably stick with a hardware build, even shipment to shipment. Software and solutions companies would settle on a specific device, and then within months open a new container-load that had different components and firmware.

The advantages

So the idea of MDEP is a shift from a free, malleable Open Android (AOSP) framework, to something that's buttoned down and built for the needs and realities of large businesses that have many devices, and need to be hyper-vigilant about cyber-security risks and threats.

MDEP brings:

- Microsoft's security stack, which includes stuff like hardware-level "attestation" – meaning the "Yeah, it's me, I'm cool" security validation is not just software, but all the way down to silicon and encryption;
- Long device lifecycle management, with OS updates that line up with corporate security policies for years, not just months;
- IT convergence, which is probably the biggest reason why companies look at MDEP. It means big organizations that are already Windows shops, and are not going to move off that, can manage a digital signage network through Microsoft Intune, which is the same "Unified Endpoint Management" tool these big companies use for laptops and mobile devices.

The result is digital signage ready to be managed in the same way as other screens deployed around workplaces and office campuses. It moves digital signage from being a standalone, siloed activity and set-up, to a fully integrated node on a corporate network.

Iadea pushing the idea

MDEP explains how and why Taiwan-based Iadea has found its way back into digital signage, after the hardware manufacturer spent the last several years much more focused on the meeting room display business – or what it calls facility management.

It was meeting rooms that took Microsoft down the MDEP path, because of how the company's meetings solution – Microsoft Teams Rooms – involved hardware devices operating in the past on more than 10 different variants of Android. That forced Microsoft to steadily and repetitively test and validate each product before any update was rolled out.

So it was anything but streamlined. Two years on for MDEP, Iadea was at ISE 2026 showcasing its adoption of MDEP for its devices, and touting a variety of digital signage CMS software partners like Appspace, Navari Labs, Comeen, Poppulo, Novisign and Screencloud. Some of those vendors – Appspace in particular – are heavily focused on workplace, so they'd both want and need to be developing to this.

Iadea has a middleware layer called DSM, short for Display Solutions on MDEP. It is integrated with Microsoft and uses agentic AI for things like intelligent assistance and guidance, and to automate some workflows.

Doesn't ChromeOS do this?

So if you know this stuff, you may be thinking: this sounds a lot like the benefits touted by Google's ChromeOS people, and you'd be right.

ChromeOS (*see also page 102*) is well known and respected for its security and ability to update and manages devices over the web. The argument for MDEP is that for Microsoft-centric IT teams in big companies, MDEP is natively integrated, while ChromeOS is not. And four in five Fortune 500 companies are Microsoft shops, deeply entrenched in Windows.

Android also dominates the global market for company-owned and managed phones, but non-phone Android devices on corporate networks – for things like kiosks and signage screens – represent a much smaller number.

The start of a shift?

Android devices running ARM chips tend to offer lower hardware costs than Windows devices using Intel, so the rise of MDEP could – repeat, could – drive a shift to Android.

If the Dr. No guys who've long seen Android as risky and unstable change their perspective, MDEP could be mainstreamed in corporate IT circles.

GOOGLE CHROMEOS

The Future Is Aluminium

Google's operating system ChromeOS offers centralized management with reduced complexity. But with Aluminium, there is a new development underway that would unify ChromeOS and Android.

Florian Rotberg

Over the past few years, Google has quietly established ChromeOS as an increasingly popular operating system in the digital signage market. Positioned as a secure, cloud-based alternative to Windows and Android, ChromeOS offers precisely what many signage operators are looking for: stability, centralized management, and long-term predictability.

With the introduction of ChromeOS Flex, Google even expanded this promise to ageing hardware. Instead of replacing obsolete Windows PCs, integrators can repurpose existing devices with a modern, secure, and lightweight operating system. For digital signage networks under cost pressure, the value proposition is clear: lower hardware investments, reduced operational complexity, and subscription costs amounting to just a few dollars per device per month.

Streamlining operations

Furthermore, the reduced complexity results in lower power consumption compared with other operating

systems – an advantage that carries even more weight in times of soaring energy prices. Google itself cites an average energy saving of 19 percent compared to Windows, while industry partners have measured savings of up to 35 percent.

One of ChromeOS's biggest strengths lies in its single-version strategy. Cloud-based operating systems eliminate the need to support countless OS variants, making life easier for ISVs and system integrators alike. Compared to Android's fragmented ecosystem – with dozens, if not hundreds, of active versions in circulation – ChromeOS looks refreshingly simple. This is one reason why some integrators, including Trison, already operate large-scale digital signage networks on ChromeOS.

Android and ChromeOS converge

But change is coming. Google has announced plans to merge the Android and ChromeOS worlds into a single unified operating system, currently known under

Google at NRF 2026





Photo: invidis

Inside the Google ChromeOS Experience Center

the working title Aluminium OS. The goal: combine Android's massive ecosystem with ChromeOS's cloud-native architecture, security model, and device management capabilities.

This is no small task. Despite both platforms being Linux-based, Android and ChromeOS rely on fundamentally different technology stacks and developer ecosystems. Merging them into a cohesive platform represents one of Google's most ambitious OS projects to date.

Development, however, is already well underway. The first Aluminium OS devices are expected to reach the market by the 2026 holiday season. Initially, Google will focus exclusively on consumer devices such as notebooks, tablets, and hybrid form factors. Support for B2B use cases – including digital signage, dedicated device modes, advanced security features, and enterprise-grade management – will follow only in a second phase.

What this means for digital signage

For the digital signage industry, there is no immediate cause for concern. ChromeOS remains fully supported, both for new deployments and existing installations. Google continues to guarantee automatic updates for

up to ten years from the original platform release date for ChromeOS devices – an important factor for long-term signage projects.

In practice, ChromeOS will likely remain Google's primary cloud operating system for digital signage well into 2027, running alongside a broad landscape of Android-based solutions. Aluminium OS, at least in its early iterations, will not yet be ready for mission-critical B2B environments.

Competitive pressure is increasing

At the same time, competitors are not standing still. Microsoft, in particular, is attempting to tame the Android chaos with MDEP – a hybrid approach that combines Android hardware with Microsoft's management, security, and lifecycle tools (*see also page 100*). The aim is clear: reduce OS fragmentation while leveraging familiar enterprise infrastructure.

ChromeOS has earned its place in digital signage by solving real operational problems. With Aluminium OS on the horizon, Google is signalling its long-term intent: fewer platforms, fewer versions, and a more unified ecosystem. What is certain is that the digital signage OS landscape is about to become more interesting than ever.

The background is a solid black field filled with various geometric shapes in shades of purple and grey. These shapes include rectangles, triangles, and L-shaped blocks, some of which are oriented diagonally. The shapes are scattered across the entire frame, creating a complex, abstract pattern. The text is centered in the upper half of the image.

**DIGITAL
OUT-OF
HOME**



INTERNATIONAL MARKETS

OoH Becomes a Strategic Asset

The acquisitions of the past year have shown that publishers and investors are rediscovering DooH. At the same time, new operating models among established players and ongoing adtech consolidation are accelerating the market's development.

Balthasar Mayer & Florian Rotberg

The signals were already visible more than a year ago, when several high-profile M&A transactions took place. Those developments have since been extended, and clearer trends are emerging that show how the international digital-out-of-home market could consolidate and evolve.

At the beginning of 2025, a British subsidiary of the Bauer Media Group acquired the Nordics business of Clear Channel Outdoor Holdings. With this move, one of Europe's largest media groups entered the German market. In the following fall, Bauer followed up by acquiring Amscreen, Clear Channel's exclusive digital signage supplier in Europe. This aligns the company with the integrated operating model used by leading European DooH players, which typically rely on in-house integrators responsible for design, technology, and operations.

Bauer Media is not the only publishing group investing in digital-out-of-home. It is already well known that Axel Springer owns the scale-up Framen. In Switzerland, another publisher has entered the field: NZZ (Neue Zürcher Zeitung) increased its stake in the leading Swiss outdoor advertising company APG|SGA from 20 to 45 percent. As a result, the country's two largest out-of-home operators – APG|SGA and Goldbach Neo – are now effectively influenced by its two biggest newspaper publishers: NZZ and TX Group.

These acquisitions underline the growing strategic importance of outdoor advertising in the media

business. Established publishers are deliberately investing in scalable, high-reach, and relatively stable advertising environments. While digital platforms face increasing pressure – whether due to opaque supply chains or brand safety concerns – DooH is gaining appeal as a controllable, physical medium.

For publishers, entering DooH is not only a form of diversification, but also a return to a core principle of traditional media: reach in public space.

Investors discover OoH

In parallel, capital from the financial sector is reshaping the industry. Private equity investors and sovereign wealth funds are increasingly treating Digital-out-of-Home as a promising infrastructure asset.

The acquisition of Clear Channel – now focused entirely on the US market after divesting its European operations – by the UAE sovereign wealth fund Mubadala illustrates this trend.

At the same time, Out-of-Home investor Wildstone continues to expand its international portfolio. The company has added assets in Australia and Spain and recently signed a new agreement with the UK's Motor Fuel Group to develop additional DooH sites at petrol stations. In the UK, it also built a large upgraded digital screen in partnership with Backlite. Wildstone is likewise actively seeking new locations in Germany.



Photo: BackLite UK

Upgraded DooH screen by Wildstone and Backlite in the Greater London area

New infrastructure-focused companies – often backed by private equity – take over financing, technology upgrades, and long-term site management, while media operators focus on sales and monetization.

Transformation at Ströer

The situation is somewhat different at German outdoor advertising giant Ströer. The company is currently, so far unsuccessfully, seeking an investor for its Out-of-Home business. At the same time, founder Udo Müller has returned as sole CEO and is aiming to fundamentally transform Ströer. Media silos are being dismantled, and the in-development Ströer Ad Manager is being positioned as a central platform to unify offerings across all media channels.

In general, self-service booking is intended to become the new standard. For a traditional-structured outdoor advertiser, this represents the biggest shift since the rise of DooH.

Perhaps the most fundamental change is Ströer's shift from selling reach to selling outcomes. Companies such as Google, Meta, and Amazon have built global advertising empires on performance-based models. Ströer now aims to follow this example and hopes the broader German Out-of-Home market will do the same within a relatively short time.

To support this shift, Ströer is working with partners on a standard called the impact layer "Public Mind." This framework is designed to forecast the impact of campaigns based on KPIs, reflecting advertisers' growing preference for measurable outcomes over pure reach.

The role of adtech

The growing importance of the adtech layer in DooH – and of a full technology stack – is also evident in further consolidation. The trend began in early 2025 when T-Mobile US acquired Vistar Media, highlighting how strategically important programmatic DooH and audience data have become for telecom and media companies. In addition, the adtech platform Blis was acquired for \$175 million. Blis specializes in omnichannel targeting based primarily on geographic rather than personal data.

Broadsign completed its largest acquisition to date with the purchase of the programmatic DooH platform Place Exchange. Beyond expanding its technical capabilities, the deal established New York City alongside Montreal as a second major global hub for Broadsign – underscoring the importance of proximity to key advertising and media ecosystems. Broadsign's evolution from a CMS provider into a de facto global standard for end-to-end DooH platforms is now unmistakable.

A changing DooH landscape

Taken together, legacy players and new entrants are shaping the future DooH landscape across investors, operators, and adtech providers. Over the coming years, the market is expected to continue shifting toward more data-driven and platform-based structures. Programmatic DooH will grow further in global relevance and become a standard component of digital media plans. At the same time, competition is intensifying, with large, internationally scalable players gaining an advantage over smaller market participants.

DOOH NORTH AMERICA

Navigating the Next Growth Cycle

Record revenues, growing programmatic spend, and new measurement standards: the US and Canadian OoH markets are laying the groundwork for the medium's next phase of growth.

Antonia Hamberger

In both the US and Canada, Out-of-Home is outperforming nearly every other advertising sector. While much of the media industry is grappling with slowing growth, OoH stands out as one of the market's rare success stories – a trend mirrored across much of the world. While traditional static inventory continues to prove resilient, Digital-out-of-Home is drawing growing attention from advertisers and investors.

The power of DooH lies in its ability to deliver contextual, highly relevant messaging without relying on personal data. Now, with AI and programmatic capabilities beginning to mature, the industry is moving closer to a long-promised breakthrough: the ability to personalize creative in real time, at scale.

Yet even before this vision is fully realized, the sector is already reaching new heights. In 2025, OoH revenues hit all-time highs in both the US and Canada. The US market reached \$9.46 billion, while the total revenue in Canada climbed to \$609 million (C\$842 million). While Canada's market remains only around 6.4 percent the size of the US, its pace of digital transformation is even more pronounced: In Canada, DooH already represents 58 percent of total OoH revenue. In the US, it accounts for 36.3 percent.

The push toward automation

A major driver of DooH growth is programmatic buying. DooH screens have a much higher yield

because they are typically sold in 10–15 second slots, so their revenue growth far outpaces the rate of digitalization – and programmatic helps optimize screen occupancy even further. In the US, programmatic accounted for 24 percent of DooH spend in 2024, up sharply from 15 percent the previous year, and is projected to reach 65 percent by 2029.

Yet despite the acceleration, the market is not moving entirely away from traditional buying relationships. “The market remains a hybrid, with many buyers continuing to leverage direct relationships alongside programmatic channels,” says Anna Bager, president of the Out of Home Advertising Association of America (OAAA).

The transition is happening at equal speed in Canada, where programmatic represented 14.4 percent of DooH spending in 2025. For Lindsey Talbot, president of OAAA's Canadian counterpart COMMB, the appeal is closely tied to today's volatile market conditions. “In current economic times, budgets are a lot more volatile than we've seen in past years. Flexibility and speed to market is one of the key factors for client spending right now and they find it in DooH, especially in programmatic,” she says.

For both industry associations, measurement is a key priority. Both OAAA and COMMB are working toward a unified audience currency that can better integrate OoH into omnichannel planning and buying systems. While OoH has historically relied



DooH boat by Ballyhoo floating around Biscayne Bay north of Miami

Photo: invidis

on standardized impressions and audience estimates, programmatic trading requires more interoperable measurement frameworks that align with digital media standards.

In the US, OAAA and measurement provider Geopath are working with Ipsos on an updated audience measurement system that combines mobility data with advanced modeling techniques. In Canada, COMMB launched "Roadmap" in 2025, a platform aggregating inventory from all COMMB member operators for cross-provider campaign booking.

Lindsey Talbot sees interoperability as critical for the medium's future. Upcoming iterations of Roadmap are expected to include API integrations with AI-powered planning and buying tools used by agencies. "OoH must be included at the channel planning stage," Talbot says, warning that otherwise the medium risks being excluded entirely from media plans. At the same time, she argues that the industry must address the rising costs of measurement and attribution. In some cases, she notes, the cost of a marketing mix modeling study now exceeds the value of the media campaign itself – an imbalance the industry will need to solve if advanced measurement is to scale sustainably.

Building the next generation of OoH

Structurally, both markets are highly consolidated, while still leaving room for emerging players. The US industry continues to be dominated by Lamar Advertising and Outfront Media, although major metropolitan areas also create space for newer entrants experimenting with premium digital formats such as Wow Media, as well as smart city screens that combine DooH with Wifi and city maps, such as OBM's Ike Smart City

Kiosks, or even LED boats floating around US coasts. Canada is led primarily by Pattison Outdoor Advertising and Astral, while still maintaining a significant ecosystem of independent operators. Notably, roughly 95 percent of the domestic OoH market remains Canadian-owned.

Another area attracting growing attention is retail media. Talbot believes in-store and place-based retail screens should increasingly be viewed as part of the broader OoH ecosystem because they are fundamentally place-based DooH environments. The debate around the categorization of in-store screens, she argues, stems from the fact that there are two parts to a retail media business. Apart from selling ad space in their stores, retailers also monetize anonymized shopper data. This customer data business usually operates outside the scope of OoH. Nevertheless, more retail media companies are joining COMMB, reflecting the common interests of OoH media owners and retail media network operators.

Looking ahead, both markets see the future of OoH becoming more dynamic, data-responsive, and integrated with other media channels. In the US, Bager sees deeper integration between OoH, mobile, and social channels, alongside continued programmatic growth.

In Canada, Talbot expects OoH to remain one of the few advertising sectors with meaningful growth potential in the current economic environment. As campaign flexibility, automation, and dynamic creative capabilities continue to improve, she believes both DooH and programmatic adoption will accelerate further – reinforcing the medium's transformation from a traditional broadcast channel into a responsive, data-enabled component of modern media planning.



Programmatic unlocks access to online budgets for DooH.

Photo: VIOOH

PROGRAMMATIC DOOH

The Budget Magnet

The relevance of programmatic DooH continues to rise steadily: according to Viooh's "State of the Nation," it is expected to feature in nearly half of campaigns in the near future.

Valentin Klab

Programmatic digital-out-of-home continues its steady global ascent, as established DooH networks are progressively being connected to programmatic infrastructure, while new networks are increasingly launched with programmatic access already built in. At the same time, the expansion of in-store retail media is further accelerating growth across the broader programmatic ecosystem.

That these shifts are not only structural but also firmly embedded in industry thinking is underscored by the latest edition of the "State of

the Nation" report by SSP provider Viooh, which surveyed advertisers and agencies on the significance they now attribute to programmatic DooH.

Strongest growth in the U.S.

The 2026 responses confirm the continued upward trajectory of Programmatic DooH. Nearly one-third of surveyed companies already use programmatic in their DooH campaigns, with expectations pointing to further growth – reaching an estimated 48 percent share within the next 18 months.

This momentum is expected to be supported by significant budget increases. Survey results indicate an average investment rise of 44 percent. The strongest growth in campaign share is forecast in the US, where respondents anticipate an 18 percentage-point increase in pDooH adoption.

Budget reallocation

An overwhelming 99 percent of companies already active in P-DooH plan to maintain or increase their investment. This growth is largely being financed through the reallocation of budgets from other digital channels – including traditional DooH – rather than entirely new spend.

The rise of dedicated programmatic DooH teams is reinforcing this shift. Where such teams exist, new budgets are more frequently unlocked, reflecting the increasing organizational maturity.

Programmatic DooH is also becoming a core element of digital media planning. Across key markets, 90 percent of buyers now include it in their broader digital strategy – up sharply from just 37 percent in 2023.

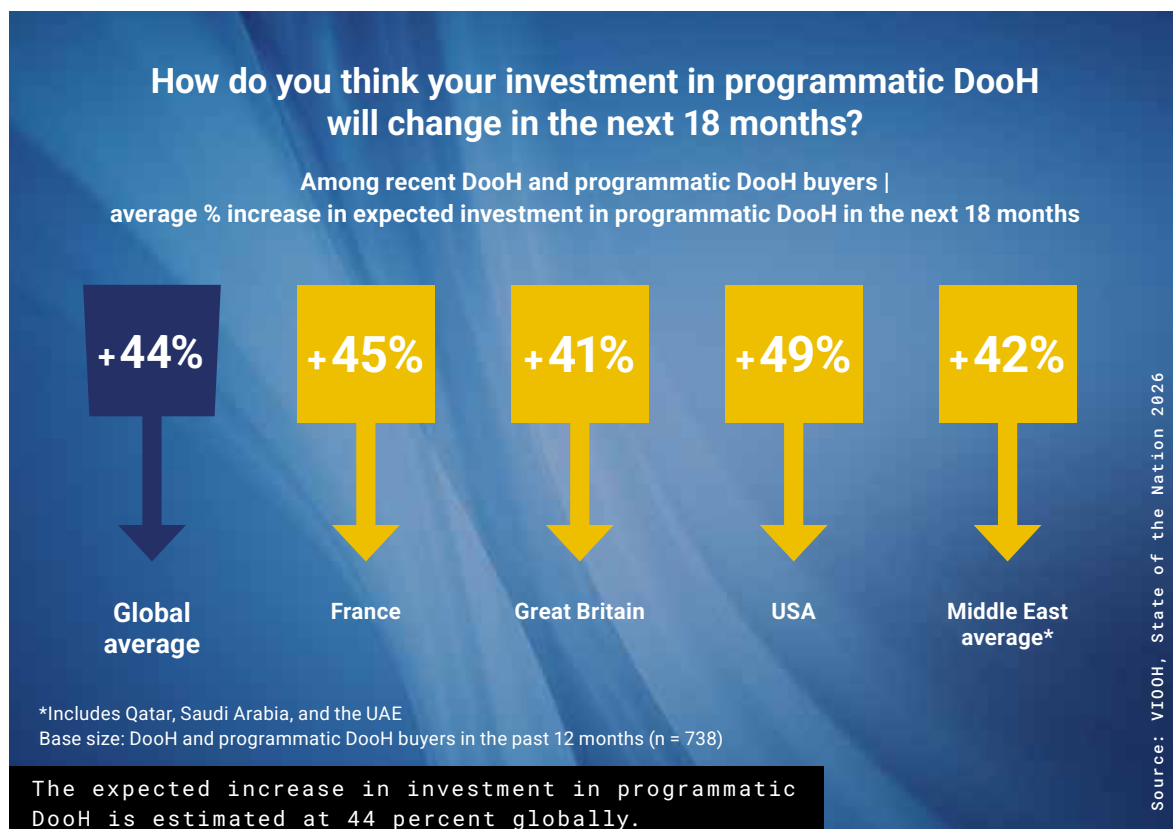
Growing confidence in ROI

Confidence in the return on investment from programmatic DooH continues to strengthen. Sixty percent of respondents expect the channel to deliver measurable results – more than for both traditional DooH and OoH.

At the same time, dynamic creative optimization (DCO) presents a paradox. Usage has declined from 13 to 8 percent, despite 66 percent of respondents stating an intention to increase adoption in the future. Companies cite a lack of training, limited budgets, and constrained creative resources as the main barriers.

Sustainability and AI

A majority of respondents (62 percent) still associate P-DooH with ecological efficiency, reinforcing its reputation as a relatively sustainable channel. However, sustainability is losing importance as a primary decision-making factor. In key markets such as the US, the UK, and France, only 15 percent of respondents now rank it among their top three criteria – down from 32 percent in 2024.



AI, by contrast, is now firmly embedded in the campaign process. Ninety percent of respondents already use AI at least at one stage, most commonly for creative generation, trend forecasting, and automated inventory selection.

Data as investment driver

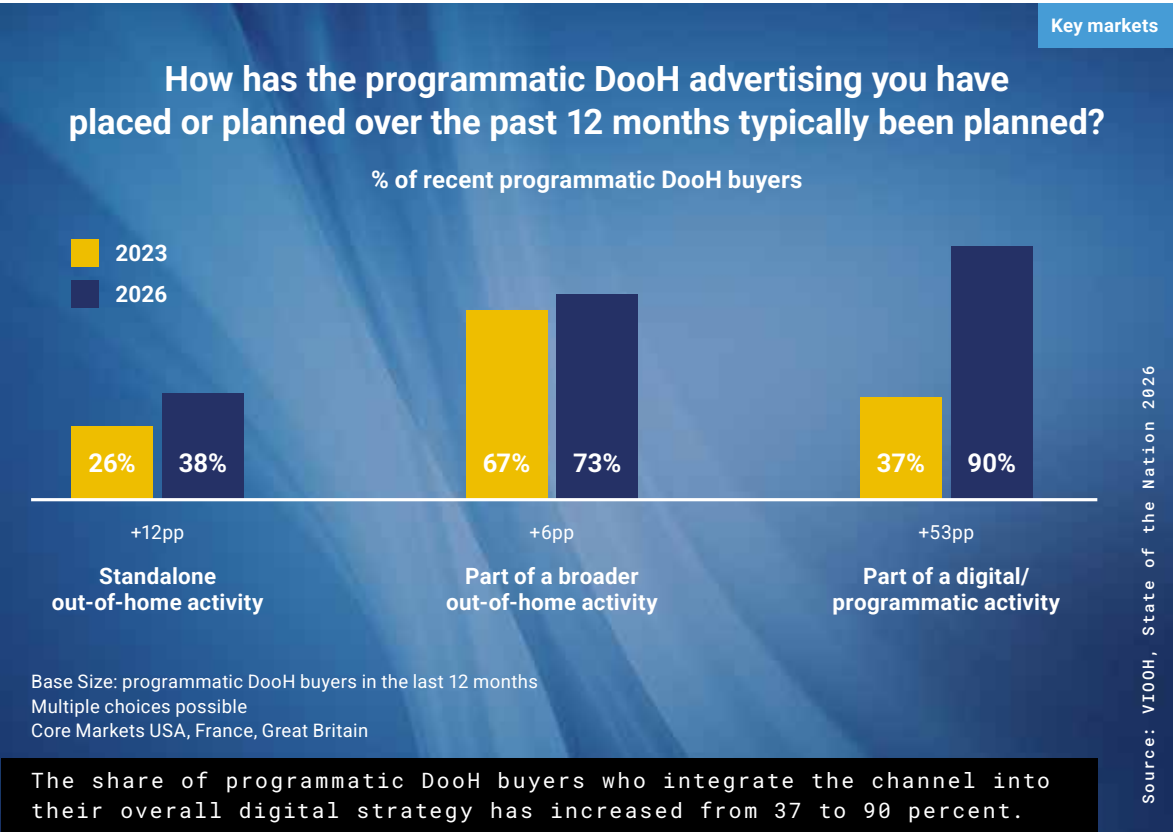
Data usage is set to increase further, with 68 percent of advertisers planning to make their campaigns more data-driven. Large advertisers in particular – those with media budgets above €150 million (about \$172 million) – are leading this shift. Among them, 41 percent identify first-party data integration as the most important lever for increasing investment in programmatic DooH.

As a result, programmatic continues to gain strategic weight within the DooH ecosystem. While traditional insertion orders are expected to remain relevant, the hybrid model combining IOs and programmatic enables access to digital budgets – unlocking new and significant growth opportunities.

State of the Nation 2026

The survey included 1,050 companies across the UK, the US, France, and – for the first time – Saudi Arabia, Qatar, and the UAE. Unlike previous editions, German companies were not included this year. According to Viooh, this reflects its assessment – after six years of tracking – that Germany is already a “global frontrunner in programmatic DooH adoption.” As a result, further growth tracking in the market is no longer considered meaningfully indicative.

The report can be downloaded here:



ADVERTISEMENT



ProAV Technology for Sensitive Areas in Buildings

Display by gekartel AG



Copyright: gekartel AG

The new VdS Guideline 6024 provides planning security.

Whether it's LED walls in airports, snack vending machines or displays in escape and rescue routes: digitalisation is permeating public buildings. Until now, the planning and installation of media technology in these areas operated in a grey area. Result: complex approval processes and legal uncertainties.

The new VdS 6024 Guideline closes this gap. For the first time, it defines clear objectives for device integrated fire protection in media technology systems. In addition to requirements for risk assessment and material selection, the focus lies primarily on automatic integrated extinguishing systems. A clear distinction is made between a fire originating from within (prevention of the fire spreading to the building) and a fire originating from outside (protection of the technology and neutralisation of the fire load).

Technological pioneers such as gekartel AG, LG Electronics and the JOB Group are already demonstrating how practical implementation can be achieved. Self-contained, device integrated self-extinguishing systems such as the E Bulb or automatic mini fire

extinguisher AMFE fully meet the VdS requirements. They detect the fire at its source, immediately release the extinguishing agent and simultaneously disconnect the system from the main supply to prevent reignition.

The new Terminal 3 at Frankfurt Airport is considered a success story. At the central marketplace, two LED surfaces from LG, covering a combined area of just over 100 square meters, were installed – featuring factory-integrated E-Bulb technology. LG is currently the only supplier offering a VdS 6024-certified LED solution that comes with necessary fire safety technology installed ex works and that can provide all the relevant device certificates.

As a pioneer and market leader in the field of VdS 6024-certified digital signage solutions, gekartel AG offers high-quality media technology, specifically designed for installation in escape and rescue routes, which features a self-extinguishing system with E-Bulb and also meets the KRITIS requirements for public administration and clinical areas.

LG installation at Frankfurt Airport



Copyright:
Media-Frankfurt
Media
Frankfurt

Deadline for new fire safety standards

The current technical note will be converted into an official VdS Guideline before the end of 2026. This will provide, for the first time, a uniform framework and a binding basis for assessment for fire safety planners, experts and authorities. This creates transparency and significantly shortens approval times. Anyone who is already planning in accordance with VdS 6024 is building for the future.



DooH grew by 7.7 percent at JC Decaux in 2025.

Photo: JCDecaux

JC DECAUX

DooH, the Savior

JC Decaux weathers the global economic turbulence of 2025, but is unable to sustain the boom of the past three years. DooH and programmatic remain top performers, however, accounting for 40 percent of total revenue.

Antonia Hamberger

After three years of steady two-digit growth, JC Decaux is feeling the brunt of the global economic disorder in its 2025 results. The largest outdoor advertising company on the planet closed the year with essentially flat growth: group revenue was up only 0.8 percent (1.8 percent organically), reaching €3.96 billion (about \$4.56 billion) in total. JC Decaux publicly interprets these numbers as proof of its business model's resilience – and continues to rely on digital-out-of-home as its rising star and number one growth driver.

Digital keeps the momentum alive

Digital turned out to be the saving grace in 2025: the DooH segment grew by 7.7 percent (10.0 percent organically) and accounted for 41.7 percent of overall revenue. In Q4, the share of digital even rose to 44.8 percent.

While these numbers are overall positive, they represent a dramatic slowdown of DooH's remarkable growth streak, with rates north of 20 percent from 2022 onwards. While the outstanding 2022 and 2023 growth rates were needed to lift

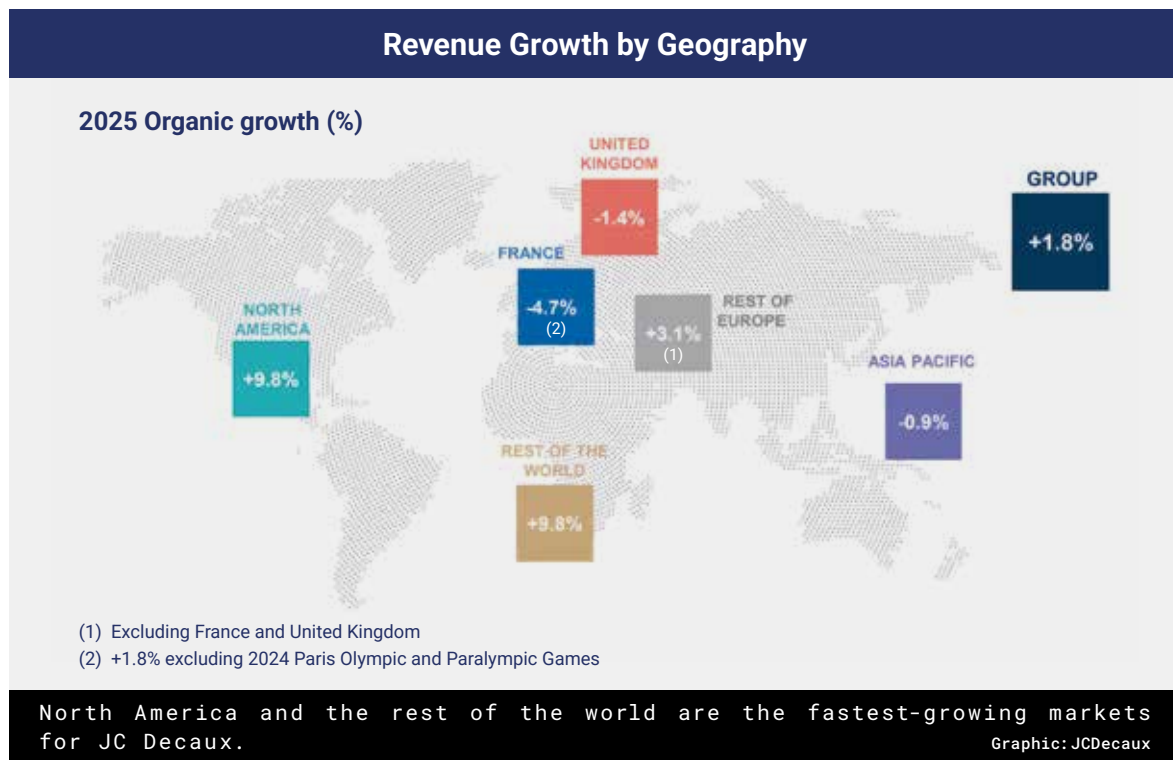
JC Decaux back up to its pre-pandemic level, 2024 was a success story of its own – one that tells the rise of data-driven digital advertising in the physical world that can increasingly rival the intelligence of online media.

The growth of programmatic revenues through JC Decaux's very own Viooh Supply-Side Platform dropped from +45.6 percent in 2024 to +19.2 percent in 2025. Overall, they reached €180.5 million (about \$208 million), accounting for around 10.9 percent of digital revenue.

All numbers, however, gain a few percentage points when major sporting events like the 2024 Paris Olympics and the Uefa Euro are excluded, which helped strengthen the 2024 results.

The two largest markets falter

In terms of regions, North America and the Rest of the World – comprised of LATAM, Africa, and MENA – were the key growth drivers, both growing by 9.8 percent. France decreased by 4.7 percent, impacted by the high comparison base. The



UK also declined in the low single digits, while the Rest of Europe – JC Decaux’s largest market – grew by 3.1 percent. The company’s second-largest market, APAC, decreased by 0.9 percent.

Billboard declines further

In terms of activities, street furniture continues to be by far the largest OoH segment for JC Decaux and grew by 0.7 percent to €2.01 billion or \$2.32 billion (+1.9 percent organically).

Transport grew by 2.2 percent to €1.42 or \$1.64 billion (+3.3 percent organically), reflecting solid growth in airports and public transport systems despite a mid-single-digit decrease in China.

Billboard continued its slight downward streak from 2024 and decreased by 2.4 percent to €533.2 or \$614.4 million (-2.3 percent organically), affected by a double-digit decline in France – again due to a high comparison base.

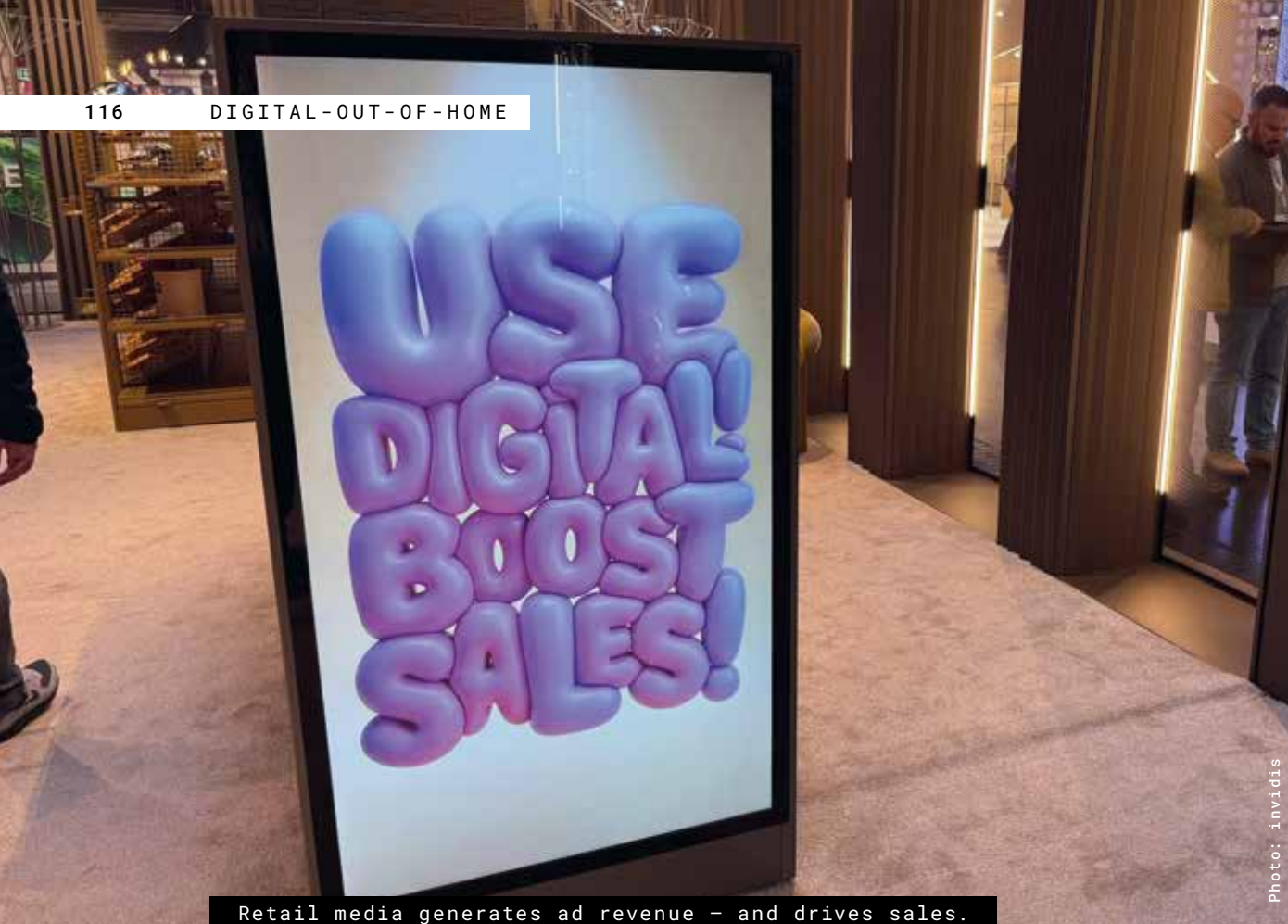
Measured confidence for 2026

Commenting on the 2025 results, Jean-François Decaux, Chairman of the Executive Board and Co-CEO of JC Decaux, said: “JC Decaux delivered a strong performance in 2025 despite a highly uncertain economic environment including rising tariffs and increasing geopolitical uncertainties.”

For the first months of 2026, Decaux reports solid business momentum “with no material impact observed to date from the recent Middle East conflict.” For Q1, he expected 5 percent organic revenue growth.

The world’s largest programmatic network

JC Decaux’s programmatic network currently comprises 30,000 screens across more than 35 markets. Since early 2026, all of these screens can be booked together as one unified network for the first time. Previously, global campaigns of this kind were only possible in airport environments; now, with a single booking via the Viooh platform, street furniture, roadside DooH, and retail screens can be activated across multiple markets. In parallel, JC Decaux has expanded its “360 Footprint” measurement tool to Germany, Italy, and Brazil. First launched in France in 2021, the system quantifies the environmental, social, and economic impact of OoH campaigns. It evaluates CO2 emissions, water consumption, locally supported full-time jobs, and broader economic value creation.



Retail media generates ad revenue – and drives sales.

DEEP DIVE

The Big Retail Media Questions

In-store retail media is booming – yet there's no ready-made rulebook for retailers looking to enter the business. Instead, there are multiple strategies for building and monetizing a network can follow multiple strategies.

Antonia Hamberger

Retail media is one of the most dynamic areas in today's advertising industry – and at the same time one of the most difficult to clearly define. Few sectors are growing faster, and even fewer are as strategically complex. This is precisely where the challenge lies: retail media is not a neatly defined medium, but rather an evolving interplay of technology, data, and commercialization. Anyone engaging with it quickly encounters a series of fundamental questions. Four of them stand out in particular.

DooH or not?

Perhaps the most basic question is this: is in-store retail media actually digital-out-of-home – or not?

There are strong arguments for classifying it as DooH, above all the technical and structural similarities. In-store retail media uses digital screens in physical environments, centrally controlled via content management systems. In this sense,

it follows the same fundamental logic as traditional DooH networks. The boundaries blur even further when advertisers plan and serve campaigns through the same programmatic platforms.

At the same time, however, retail media differs from DooH in one crucial aspect: its targeting and measurement logic. While DooH is primarily optimized for reach and impressions, retail media is centered on transactions. In-store displays can be directly linked to sales data, making return on ad spend (ROAS) measurable. This shifts retail media clearly towards performance marketing. In this respect, it is closer to online retail media than to traditional Out-of-home

Retail media therefore sits in a hybrid space: technologically close to DooH, but strategically closer to performance marketing and e-commerce. It is precisely this duality that makes the medium so attractive – and so difficult to categorize. For this reason, in-store retail media should not simply replicate either channel but instead develop its own advertising formats. True industry standards are still emerging, which means each retailer must work with experts to determine which formats are most effective and commercially viable.

Rent or buy?

Just as complex as the question of definition is the path to building a retail media network. The central question is: build in-house, outsource, or operate jointly?

For retailers who already have screens in place, the key issue is monetization: how can advertising revenue be generated from existing infrastructure? Depending on the size of the retailer, either self-marketing or third-party commercialization may be the right approach.

Those with sufficient financial and organizational resources can build their own advertising platform and retain full control. This model promises maximum value creation, but requires significant investment in technology, data integration, and sales capabilities. It is typically only viable for very large players with Walmart-like scale, combining extensive store networks with strong e-commerce operations and loyalty ecosystems.

Many retailers therefore choose to work with a commercialization partner who handles both direct sales and programmatic advertising via a supply-side platform (SSP). In some cases, these partners already operate multi-retailer networks to which additional inventory can be connected. This is especially attractive for smaller retailers whose individual footprint does not provide sufficient scale.

There is also a second outsourcing model: direct integration with selected SSPs that aggregate multiple networks and sell inventory programmatically. Dedicated content management systems such as Broadsign provide standardized APIs for this purpose, while specialized modules – for example LDSK – handle integration within existing CMS environments.

The trade-off for outsourcing is a degree of lost control, a share of revenue, and reliance on external infrastructure. In return, retailers gain access to a mature and proven technological ecosystem.

For retailers without existing infrastructure, the challenge is even greater. Here, the task is not only monetization, but the construction of an entire ecosystem: hardware, software, integration, and operations. Broadly speaking, there are three approaches:

- Independent buildup with integrators, software providers, and commercialization partners
- Full-service models with external implementation, sometimes including monetization
- Shared-revenue models, where partners invest in infrastructure, manage commercialization, and share both risk and upside

Depending on the model, the retailer's role shifts along a spectrum – from infrastructure operator to pure media space provider. Shared-revenue models reduce entry barriers and financial risk but also mean giving up control and a portion of advertising revenue.

Ultimately, the decision is strategic: does the retailer want to evolve into a media company in the mould of Amazon or Walmart – or remain primarily a retailer with an additional revenue stream?



Open or closed network?

Equally important is the question of advertisers: who is actually allowed to buy space on the network?

An open model enables so-called non-endemic advertising, where inventory is available to third-party brands whose products are not sold in-store. The benefits are clear: higher utilization, additional budgets, and greater scalability.

In this setup, retail media resembles traditional DooH structures, including programmatic buying and a strong focus on reach. However, one key differentiator remains: retailers' first-party data. Sales data, loyalty programs, and e-commerce behavior are highly valuable in programmatic environments, enabling more precise targeting and more effective campaign delivery.

On the other side is the closed, endemic model. Here, the network is reserved exclusively for

brands present in the retail environment. At its core, this is the digital evolution of traditional trade marketing, with a clear objective: driving sales at the point of purchase.

Digital displays replace or complement classic advertising formats such as posters and flyers, and are deployed precisely where purchase decisions are made – at shelves, on promotional displays, or in checkout areas.

In this model, retail media becomes a highly performance-driven sales tool. Accordingly, expectations around data integration and reporting are high – because performance must be measurable.

In practice, many retailers adopt hybrid approaches to access both budget pools. They segment inventory, opening certain screens or a defined percentage of ad slots to external demand while keeping others exclusive to strategic partners.

Models for Building a Retail Media Network



Retailers do not necessarily have to bear the full risk of building and operating their retail media network.

Technologically, this mixed monetization model is already well supported. Modern digital signage systems with open APIs allow integration with multiple commercialization platforms and enable precise campaign control.

Still, the balancing act remains demanding: maximizing revenue on one side, while maintaining brand strategy and sales impact on the other.

Sensors – yes or no?

While online retail media is already fully data-driven, the physical world is only beginning to reach a similar level. The key enabler of this evolution is sensor technology.

Camera-based sensors and related systems provide insights into in-store behavior: where do people move? How long do they stay? In what context? These data points complement existing first-party data and create a more complete view of the customer journey.

The potential becomes especially powerful when sensor data can be used in real time. Content can then be dynamically adapted based on audience composition, time of day, or in-store context. Retail media thus evolves from a static advertising surface into a responsive communication system.

However, this next step comes at a cost. Sensor infrastructure is expensive, technically complex, and raises additional questions around data privacy and consumer acceptance. Above all, it only becomes viable once the underlying retail media system is already generating meaningful revenue.

Without a stable monetization engine, additional data depth remains a cost factor rather than a competitive advantage.

Conclusion: a medium in the making

Retail media is not a finished system, but a market in motion. The key questions – DooH or performance, build or partner, open or closed, data-rich or minimal setup – cannot be answered in absolute terms.

Instead, they define the strategic space in which retailers operate. Every decision shifts their posi-

tion within the evolving triangle of media owner, platform, and retailer.

And that is precisely where the opportunity lies: retail media forces companies to rethink their business model – while simultaneously opening the door to fundamentally expanding it.

Retail Media – why the hype?

Retail media is growing at remarkable speed because a simple principle from digital commerce is now being transferred into the physical world: whoever generates traffic can monetize it.

Online retailers such as Amazon have demonstrated how significantly advertising revenues can contribute to an overall business model. In fact, an ever-increasing share of their revenue no longer comes from product sales, but from advertising.

That same logic is now reaching brick-and-mortar retail. With digital signage infrastructure, traditional in-store advertising spaces are being transformed into centrally managed screens that can be connected to programmatic advertising systems. Static posters are turning into dynamically bookable inventory.

For retailers, this creates a new revenue stream: existing physical spaces can be monetized more effectively without changing the core business. At the same time, the value of these spaces increases for advertisers when they gain access to retailers' first-party data – for example from transactions or loyalty programs.

It is precisely this combination of physical reach, digital programmability, and exclusive customer data that explains why in-store retail media has become one of the fastest-growing segments in advertising.

AIRPORTS

The Luxury Tier of OoH

Airports are evolving into high-end media environments. Few other settings combine design, data, and reach as consistently. That is exactly what makes modern airport DooH so attractive – and why brands are willing to invest heavily in it.

Antonia Hamberger

Out-of-home is among the advertising industry's biggest global success stories. Since the Covid pandemic, the medium has proven remarkably resilient in the face of crises and uncertainty. One of the most attractive segments within OoH is airport advertising. This environment benefits not only from an above-average affluent audience, but also from unusually granular targeting opportunities.

Modern airport OoH networks combine large-format flagship placements with hundreds of smaller displays, most of them digital. Brands can reach their audiences throughout the total 168 minutes passengers spend at the airport on average.

At key touchpoints, OoH media owners are increasingly relying on larger, higher-resolution, and architecturally striking LED installations.

600-square-meter LED wall at Rome Airport



Photos: Invidis



One of the most prominent examples is the 23-meter-high media tower in the departure hall of Terminal 1 at Seoul Airport. Campaigns appear spectacular on its 22K-resolution display. Another classic example is the seven screen monuments in Terminal B at LAX – each designed in its own extravagant format.

These digital landmarks achieve their greatest impact when integrated directly into terminal architecture during construction. In that case, they become part of the passenger journey itself, delivering high-attention advertising moments exactly where they matter most.

Trend: Architectural Landmarks

This approach is also evident in Terminal 3 at Frankfurt Airport, which opened in April 2026. While the LED installations here do not reach the scale of the landmark displays in Seoul or Los Angeles, their size and resolution are intelligently aligned with the terminal's sightlines.

In the check-in hall, for example, two LED walls of 120 square meters each rise above passengers' heads – positioned to remain visible from nearly

every angle in the hall. Such large digital surfaces are becoming increasingly important for brands. According to Media Frankfurt, the airport's media operator, budgets for dominant placements on these surfaces are correspondingly high. Automotive, finance, and tech brands in particular are investing substantial sums in image campaigns here.

While most airports still separate their DooH networks from FIDS systems (Flight Information Displays), hybrid concepts are now emerging. At Rome Airport, for example, a 600-square-meter screen in the check-in area displays both departure information and advertising campaigns. This makes it not only Europe's longest airport LED installation, but also a highly interesting new digital signage concept.

Trend: Data-Driven Targeting

Many airports can now be booked fully programmatically and across networks – in Germany, for example, through Media Frankfurt's Skyconnect network. JC Decaux launched the first global airport programmatic network back in 2024, combining more than 3,000 screens. For the first time, this allowed global airport campaigns to be centrally managed.

Programmatic technology is also creating growing opportunities for targeting and personalization. JC Decaux's "Airport Live Triggering," for instance, uses flight data from Cirium to deliver advertising content tailored to passengers' travel routes throughout the terminal. German airport media operator Cittadino offers a similar concept under the name "Addressable Gate TV."

Adapting advertising content to flight schedules is no longer a new idea, but the resulting targeting possibilities are nearly limitless. Many advertisers therefore prefer standardized products instead of building fully data-driven campaigns themselves.

To address this, Media Frankfurt developed the Smart Media product – a hybrid model positioned between classic insertion orders and programmatic buying. Advertisers select from standard-

LED media tower at Seoul Incheon Airport



ized audience packages with names such as “Digital Finance Bundle,” “Digital Car Rental Bundle,” or “Digital Event Bundle.”

These packages are configured to overperform against specific target audiences. Planning and campaign delivery are handled by the media operator. This makes programmatic DooH accessible even for companies without their own infrastructure or DSP, allowing it to evolve from a specialist topic into a broadly applicable booking model.

Trend: AI as Accelerator

Artificial intelligence is simultaneously becoming a major accelerator for the planning, creation, and optimization of airport campaigns. One key application is the analysis of advertising effectiveness. AI-supported systems can already predict in advance which visuals, colors, or layouts will gen-

erate the highest levels of attention and in which environments they will perform best. Especially in airports, with their complex sightlines and varying dwell zones, this creates significantly more precise decision-making foundations.

AI is also becoming increasingly relevant within the creative process itself. Many media operators and agencies now use automated mock-ups to visualize campaigns realistically on screens and large-format placements throughout terminals within minutes. Concepts can therefore be evaluated and approved far more quickly. At the same time, AI-generated motion content optimized specifically for digital airport surfaces is becoming more common – particularly regarding visual guidance, motion dynamics, and readability from a distance.

This not only accelerates planning but also enables highly realistic previews of the final implementation. Campaigns can therefore be tested earlier, adjusted more efficiently, and produced faster.

At the same time, airport media operators are investing heavily in after-sales portals and data-driven reporting systems. Campaigns can now be analyzed centrally both in real time and after completion. Advertisers receive transparent KPIs such as viewed impressions, forecasts, performance curves, and visual proof of actual delivery.

These metrics are increasingly supplemented by market research and effectiveness studies that provide insights into attention, reach, and campaign efficiency. As a result, airport DooH is gradually becoming more measurable – moving steadily toward the transparency and reporting standards of digital online media.

Taken together, current developments reveal three clear directions of movement: airports are evolving into increasingly curated media environments where architecture, data, and technology merge seamlessly. While large-format LED installations continue to amplify the physical presence of brands, programmatic booking and data-driven targeting are creating a new level of precision in campaign delivery. AI, meanwhile, completes the cycle – from creation and optimization to measurement and accountability.

What makes airport OoH unique

Airport OoH is considered one of the highest-quality environments within the segment. Compared to other OoH settings, brand campaigns clearly dominate here, as the environment is particularly effective at driving image perception and capturing attention.

The audience consists disproportionately of business travelers with correspondingly high household net incomes. At the same time, passengers spend an average of around 168 minutes at the airport – enough time to create repeated touchpoints throughout the entire journey.

Another advantage is the clearly structured flow of passenger movement, from check-in and security to retail areas and the gate. This guided user journey enables highly precise placement of advertising surfaces along the entire route.

The environment itself also carries a positive emotional atmosphere, which increases openness toward advertising. At the same time, distraction levels are significantly lower compared to urban environments.



**integrated
systems
europe**

BARCELONA BECKONS...

The world-renowned annual tech show for the systems integration and audiovisual industry is also Europe's premier showcase for digital signage and Dooh.

To discover the latest solutions and join the conversation, visit us in Barcelona.

SAVE THE DATE

2 - 5 Feb 2027
Fira de Barcelona, Gran Via
iseurope.org

A joint venture
partnership of

AVIXA

CEDIA



Photo: invidis

"The Whale" by Ströer at Hamburg Central Station

ICONIC DOOH IN GERMANY

Bring In the Big Screens!

Large-format DooH is gradually gaining ground in Germany: The Whale in Hamburg and Hygh's Screen in Berlin are among the first examples – even if they still fall short of the wow factor delivered by the world's most iconic DooH landmarks.

Valentin Klauß

Iconic installations have shaped the global image of Digital-out-of-Home for years. Times Square in New York has turned into a cultural landmark, the Piccadilly Lights in London blend tradition with digital visibility, and The Sphere in Las Vegas pushes the medium into the realm of immersive architecture. These locations show that DooH has become part of urban culture.

For a long time, Germany was seen as comparatively restrained in this space. Regulations

and historically established cityscapes limited large-format projects. Instead, the market remained dominated by more traditional networks made up of smaller screens and digital totems. A segment for truly iconic displays was missing. But that is beginning to change.

The large screen at the former Sony Center in Berlin is one of the first examples. The display spans 243 square meters and is operated by Hygh, with 3.9-millimeter pixel pitch LED technology sup-

plied by Samsung. A total of 5.7 million individual LEDs illuminate the corner-built structure. Its design lends itself to forced perspective and 3D effects.

The concept is branded as Action DooH. Campaigns can be combined with activations throughout the entire courtyard area. Content can, for example, be synchronized with the courtyard fountains and the Center's illuminated roof canopy. Promotional events can also run alongside screen campaigns. Brands seeking maximum presence can additionally book the pop-up store space opposite the screen.

Hamburg Central Station introduced the second landmark location with The Whale, operated by Ströer. The installation measures 38.4 meters in length and 8.96 meters in height. A total of 390 Daktronics cabinets power the 344-square-meter display, making it the largest DooH screen in Germany.

Its scale is also reflected in its weight: the structure weighs 13 tons. A dedicated beam framework integrates the screen into the building's structural system.

What both locations share is high footfall and strong visibility. Brands use the displays for high-impact visual storytelling. This is where the real value of such icons emerges: the screen becomes the starting point of a larger narrative.

The focus is less on reach in the traditional sense and more on memorability. Iconic screens do not only create impact on-site. Their content spreads through social media, extending visibility far beyond the physical location. A local installation can therefore generate additional reach beyond the paid media budget. As a result, iconic DooH is becoming part of an interconnected media mix. The screen evolves into the visual anchor of a campaign.

With these iconic installations, the German market is entering a new phase. Admittedly, the screens in Berlin and Hamburg still cannot compete with international heavyweights. For comparison, the Piccadilly Lights in London cover 780 square meters – more than twice the size of The Whale. Germany's screens have not yet reached those dimensions. But their importance for brands is clearly growing. And the development has only just begun.



LED screen by Hygh in Berlin

Photo: invidis

COMPANY

COMPANY

PAGE

Software

Quividi	129
---------	-----

Radix Technologies	130
--------------------	-----

Displays

Planar	128
--------	-----

Consulting

Quividi	129
---------	-----



NIES

Planar



Planar is a global leader in visualization technology, delivering best-in-class image performance for the world's most demanding environments.

Trusted by leading organizations worldwide, Planar serves customers across corporate, government, broadcast, education and many other markets with a broad portfolio of display solutions designed for critical visual experiences and large-scale visualization applications.

The company's offerings include industry-leading LED and LCD video walls, advanced large format displays, interactive touch displays and desktop monitors, all designed to deliver exceptional image quality, performance and reliability.

Engineered to support a wide range of environments and applications, Planar display solutions help customers deliver impactful and immersive visual experiences where image quality matters most.

In 2025, Futuresource named Planar the global market leader in indoor LED installations and LED displays for control room applications.

Founded in 1983, Planar is headquartered in Oregon, USA, with offices and manufacturing facilities in North America, Europe and Asia.

PLANAR

www.planar.com

info@planar.com

Phone (866) 475-2627
or (503) 748-1100

Quividi



Quividi is a trusted, privacy-first partner for scalable audience measurement across in-store retail media and DOOH, helping retailers and media networks unlock incremental revenue while enhancing the shopper experience.

By combining edge AI with proprietary audience intelligence models, Quividi delivers high-fidelity, ground-truth audience insights and always-on contextual audience activation, seamlessly integrated across the media ecosystem. Its platform is privacy-by-design, GDPR and CCPA-compliant, and aligned with IAB measurement standards for DOOH and in-store retail media.

Retailers and media owners rely on Quividi to measure and qualify impressions, target audience segments, provide engagement insights, and optimize creative performance and monetization strategies. As AI agents play an increasing role in retail media and DOOH decision-making, Quividi provides the real-world signals and verified data needed to enable confident, data-informed automation.

Founded in 2006, Quividi partners with Westfield, 7-Eleven, Coinstar, Cineplex Digital Media, EyeCatch Media, Metcash, and HighCo. With nearly two decades of innovation, the company continues to shape how retailers and media owners transform physical spaces into intelligent, measurable media.

Quividi

Quividi, Inc.

8 The Green
Suite B
Dover, DE 19901

Phone +1 619 838 2014

usa_sales@quividi.com

www.quividi.com

Radix



CMS is not enough.

The device management layer that keeps your digital signage fleet running, across any OS and hardware mix.

Radix is a cloud-based device management platform built for the Digital Signage ecosystem running mixed-OS signage fleets. Android, Windows, ChromeOS, Tizen, BrightSign, Linux, webOS, all from one console. Screens, media players, kiosks, and everything around them.

The CMS plays content. Radix keeps the devices running.

- Watchdogs act before your customer calls. Screens on. Apps running. Content playing.
- Real-time monitoring of fleet and device health.
- Zero Touch Provisioning for apps and device settings.
- Push updates to 20,000 devices in one click.
- Remote screen control and secured terminal for support

Radix APIs let CMS providers and integrators extend their stack with deep device and OS control at the firmware level. Embedded with leading OEMs including Samsung, TCL, Sharp, Giada, and many others.

- 6M+ devices managed daily.
- 70% reduction in support time.
- 40% reduction in on-site visits.
- 17 years of product perfection

Talk to our team. Book a live demo today.

Radix

Radix Technologies Ltd.

Headquarters:
Or Yehuda, Israel

Speak with our
Director of Sales:

Alon Bamani
alon@radix-int.com
Phone +972-54-242-8453

<https://radix-int.com>

Your Company Presentation in the invidis Yearbook

Book your space in the 2027 edition of the Yearbook now!



- ✓ Effective visibility, with all important contact details
- ✓ Setup from our graphic department
- ✓ You supply photos, logo and text, we do the rest
- ✓ German and/or English edition



We help you with your Media Planning:

Christine Koller | Tel.: +49 89 2000 416 17 | christine.koller@invidis.com



ABOUT
US





The invidis Digital



Florian.Rotberg@invidis.com

Florian Rotberg
Managing Director

invidis Founder
Senior Management Advisor
Author & International Keynote Speaker

Strategy Consulting

- Advising digital signage leaders and global brands on strategy and growth
- Shaping digital experience concepts
- Leading buy- and sell-side M&A advisory



Stefan.Schieker@invidis.com

Stefan Schieker
Senior Partner

Digital Signage Strategy Expert
M&A Advisor
International Keynote Speaker



Markus.Deserno@invidis.com

Markus Deserno
Partner

Digital Signage & ProAV Expert
Retail Media & Retail Experience
Go-To-Market & Transformation Advisor

Impact Consulting

- Advising digital signage providers on operations
- Supporting business development, sales, and tech assessments
- Guiding sustainability strategy and goals



Daniel.Oelker@invidis.com

Daniel Oelker
Partner

Branding & Change Management
Sustainability Expert
Author & Moderator



Thomas.Neumeister@invidis.com

Thomas Neumeister
Partner

Consultant Digital Signage & GDPR
Expert for Corporate, Healthcare
and Education



Marco.Wassermann@invidis.com

Marco Wassermann
Partner

Digital Signage Systems & CMS Expert
API-driven & AI Architecture Specialist
Data & Platform Strategist



roi.iglesias@gmail.com

Roi Iglesias
Partner

Retail Tech Expert
Digital Signage Advisor
Retail Media Consultant

Signage Experts



Balthasar.Mayer@invidis.com

Balthasar Mayer
Editor-in-Chief

Head of Content
Long-Term Editorial Strategist
In Charge of Quality Control and Standards

Editorial

- Daily coverage of digital signage and DooH trends on invidis.de and invidis.com
- Lead editorial: invidis yearbook
- Daily German & Biweekly English newsletter



Antonia.Hamberger@invidis.com

Antonia Hamberger
Editor

International Markets Editor
DooH & Retail Media Expert
English-Language Writer

The Global Resource for Digital Signage, DooH and Retail Media

Photos: invidis / Image: AI generated

Operations

- Media sales
- Event organization
- Leading special projects (e.g., Digital Signage Summit)



Christine.Koller@invidis.com

Christine Koller
Marketing/Accounting

Media Sales Coordinator
Accountant
Event Coordinator



Valentin.Klaß@invidis.com

Valentin Klaß
Junior Editor

Hardware & Software News Writer
Product News & Editorial Coordinator
German-Language Desk Editor

SIXTEEN:NINE – POWERED BY INVIDIS

The New Global Platform

Two trusted voices in digital signage journalism come together as one. Sixteen:Nine and invidis unite to create a single global platform for sharper insight, deeper coverage, and a stronger industry perspective.

Antonia Hamberger

In 2026, a new chapter has begun for our English-language coverage. After more than a decade of close cooperation, invidis is formally uniting with Sixteen:Nine to form a single global platform: Sixteen:Nine – powered by invidis.

Long-standing partners unite

What began as a trusted editorial partnership has now evolved into a shared home for independent journalism in a rapidly converging media landscape. With the official integration completed as of April 15, all Sixteen:Nine content now lives within invidis.com, bringing together two established voices under one roof.

At its core, the mission remains unchanged. Both brands have long been committed to credible, independent reporting in an industry where editorial lines are often blurred by commercial influence. That editorial integrity continues to guide the platform forward – now with a stronger combined reach and a unified structure.

Carrying on Dave Haynes' legacy

The transition follows a natural progression. After Sixteen:Nine founder Dave Haynes announced his retirement in 2025, invidis assumed stewardship of the platform. Bringing both brands together was the logical next step.

For the audience, the experience becomes simpler and more focused. All Sixteen:Nine stories will

now be published directly on invidis.com, offering the same depth of reporting, analysis, and international perspective readers have come to expect.

New: The Sixteen:Nine Newsletter

Instead of individual post alerts, subscribers now receive a curated Sixteen:Nine newsletter, designed to highlight the most important developments across the industry.

Importantly, the editorial voice remains familiar. Dave Haynes continues to play an active role in Sixteen:Nine – powered by invidis, with his widely read weekly column remaining a cornerstone of the platform. His perspective, shaped by decades in the field, will continue to provide insight – occasionally adjusted for the realities of a well-earned seasonal break.

Streamlined global insights

Beyond continuity, the integration also enables growth. By combining editorial resources, the platform can focus more deeply on investigative reporting, international coverage, and on-site insights, while streamlining behind-the-scenes operations.

More than a structural change, this is a step toward a more connected global digital signage community. One platform, one editorial vision, and a broader foundation for industry journalism. Welcome to Sixteen:Nine – powered by invidis.

A NEW CHAPTER BEGINS



SIXTEEN:NINE

powered by **invidiS**

The New Global Home for
Digital Signage Journalism

SUBSCRIBE TO
THE SIXTEEN:NINE
NEWSLETTER



invidis Media Kit



Sixteen:Nine Newsletter

powered by invidis

- Weekly update for decision-makers and leaders from the global digital signage and DooH industry
- Published every Tuesday and Thursday at 2 p.m. in English
- Exclusive stories, features and interviews



POSSIBLE BOOKINGS

Banner or Native Ad in various positions



Sixteen:Nine Website

powered by invidis

- The invidis platform for global executives from the digital signage and DooH industry
- Exclusive stories and interviews on the state of the industry worldwide

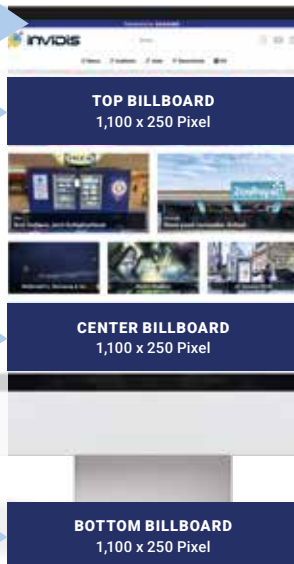
RIBBON BANNER

PRICE/MONTH **5.600 \$**

PRICE/WEEK **1.150 \$**

PRICE/WEEK **1.050 \$**

PRICE/WEEK **460 \$**



PLACED AT THE BOTTOM

POSSIBLE BOOKINGS

- Ribbon Banner
- Top Billboard
- Center Billboard
- Bottom Billboard



We help you with your media planning:

Christine Koller | Tel.: +49 89 2000 416 17 | christine.koller@invidis.com

Advertise on all Channels.



Newsletter invidis Daily

- Sent out from Monday to Friday about news and trends from the digital signage and DooH industry
- Published at 9 a.m. in German language
- Readers include executives and decision-makers

POSSIBLE BOOKINGS

Banner or Native Ad
in various positions



invidis.de Website

- The most important B2B trade portal for digital signage and DooH in German language
- Daily news, user stories, interviews and exclusive articles

POSSIBLE BOOKINGS

- Ribbon Banner
- Top Billboard
- Center Billboard
- Bottom Billboard

Yearbook

AD TYPE	PRICE  	FINAL FORMAT
U4 Cover Page	3.900 \$	210 x 297 mm
U2 Cover Page	3.900 \$	210 x 297 mm
U3 Cover Page	3.500 \$	210 x 297 mm
2/1 Double Page	6.640 \$	420 x 297 mm
1/1 One Page	3.320 \$	210 x 297 mm
1/2 Half Page Horizontal	2.250 \$	210 x 152 mm
1/2 Half Page Vertical	2.250 \$	103 x 297 mm
1/1 Company Profile	2.000 \$	210 x 297 mm



invidis Yearbook

- The invidis yearbook offers an overview of developments in the Digital Signage and DooH industry and sets future topics on the agenda
- Published in English and German
- The yearbook is a vital information source for C-level managers globally
- Due to the focus topic, all yearbooks retain their relevance and are downloaded regularly



POSSIBLE BOOKINGS

- Ads
- Company Profiles

Newsletter

AD TYPE	PRICE  	FORMAT
Top-Banner	1.350 \$ / Week	690 x 157 Pixel
Banner Middle	340 \$ / Week	690 x 157 Pixel
Banner Bottom	220 \$ / Week	690 x 157 Pixel
Native Ad 1	890 \$ / Week	1,024 x 768 Pixel Picture + Text
Native Ad 2	700 \$ / Week	1,024 x 768 Pixel Picture + Text
Native Ad 3	460 \$ / Week	1,024 x 768 Pixel Picture + Text
AD TYPE	PRICE  	FORMAT
Ribbon Banner	5.600 \$ / Month	Design from invidis
Top Billboard	1.150 \$ / Week	1,100 x 250 Pixel
Center Billboard	1.050 \$ / Week	1,100 x 250 Pixel
Bottom Billboard	460 \$ / Week	1,100 x 250 Pixel

Website

IMPRINT

Publisher:
invidis consulting GmbH
Atelierstraße 10, 81671 München

Managing Director:
Florian Rotberg

In Cooperation with:
Sixteen:Nine, powered by invidis

Editor-in-Chief:
Balthasar Mayer,
invidis consulting GmbH (responsible)

Editors:
Antonia Hamberger
Dave Haynes
Valentin Klaub
Florian Rotberg
Stefan Schieker

Advertisement:
Christine Koller (responsible)

Layout, Info Graphics, Cover:
Karin Kemper, Markus Winkler
eego – visual communication

Company Presentations:
Meike Hannig
Communication design

invidis editorial

International News:
invidis.com

German News:
invidis.de

PDF Download of the Yearbook:
invidis.de/magazine

invidis LinkedIn:
linkedin.com/company/invidis-consulting

Youtube Channel:
youtube.com/invidisXworld

Digital Signage Summit

Digital Signage Summit Europe Website:
digitalsignagesummit.org

Digital Signage Summit LinkedIn:
linkedin.com/company/digital-signage-summit-europe

© 2026 invidis consulting GmbH Munich

All rights reserved. Without written permission of invidis consulting GmbH it is not permitted to reproduce or distribute this edition or parts thereof. The articles, graphics and tables contained in this yearbook are based on the invidis Digital Signage Ranking as well as on sources, which the editors consider to be reliable. A guarantee for the correctness of the information cannot be taken over.

Index of Advertisers

AMERIA AG 2

CONCEPT International 39

DSF 25

invidis impact 52-53

ISE 123

JOB Group 113

Quividi 129

Planar 128

Radix Technologies 130

signageOS 37

Spectrio 19