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Smart Screens That See: How AI Audience Detection Turns Digital Signage into a Performance Channel

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Digital signage has long been a "push" marketing function. Content is scheduled, pushed to screens, and played on a loop regardless of who sees the display. This rigid strategy has historically limited the value of digital signage—especially in today's "immediate gratification" society.

But now, there are ways to evolve your digital signage strategy to not only hyper-target your audience but completely customize your message. A camera-based, AI-powered audience recognition feature built directly into media players creates an interactive environment. This allows a screen to perceive what its audience wants and respond accordingly.

More impressively, this system generates invaluable viewer insights without adding significant time, hardware, or overhead costs. All this solution requires is a standard IP or USB camera connected to an SMP player, delivering a truly intelligent digital sign.

Digital signage has become a mainstream communications channel in the U.S. The domestic market generated approximately \$7.4 billion in revenue in 2025 and is expected to approach \$13 billion by 2033, driven by growing adoption in retail, healthcare, transportation, education and corporate settings, according to [Grand View Research](#). North America represents the largest regional market globally, accounting for more than one-third of worldwide digital signage spending.

Imagine how much more valuable your digital signage becomes when it understands exactly who is reading it at any given moment.

Why Static Content is Outdated

Most digital signage networks run on fixed playlists. As a result, displayed messages become dated quickly. Promotions for upcoming events or short-run discounts rapidly turn into irrelevant noise. Currently, operators must

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constantly manually program new data to remain relevant to their audience. This forces businesses to guess who is actually watching the screen, and whether the content is reaching the right people at the right moment.

Static digital signage no longer meets the needs of today's organizations because it relies on fixed schedules rather than live viewer demographics. Without real-time audience data, decisions about content scheduling, advertising, and promotions are based on assumptions instead of actual behavior, severely limiting the return on investment (ROI).

An AI-powered audience feature solves this issue. Because footage is processed and content is managed more efficiently, the display changes dynamically based on exactly who is looking at it.

Key Benefits

Integrating an AI-powered audience feature into your digital signage brings several distinct advantages:

- **Real-Time Content Triggering:** When a person steps in front of a smart screen, the connected camera detects basic attributes, such as viewer presence and estimated age group. The AI module instantly



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uses that information to trigger relevant content. For example, an older adult looking at a pharmacy display could be served larger-font content detailing healthcare products or senior-focused promotions. This happens instantly without human intervention, turning every screen into a responsive, situational advertising channel.

- **Built-In Audience Analytics:** The AI system continuously logs anonymized audience data, sending insights regarding peak traffic patterns, content performance, and audience composition straight to a Central Management Server (CMS) dashboard. This allows operators to accurately track demographic trends and helps retailers and brand owners see exactly who their physical advertising is reaching.
- **Easy Setup:** The simplicity of this feature is perhaps its most powerful benefit for busy entrepreneurs. A standard IP or USB camera connects directly to a media player or CMS-managed device. The camera feed is processed locally for face and presence detection, meaning data is securely logged and transformed into analytics reports with minimal technical heavy lifting.

Use Cases

Any industry with a variable target market can benefit from this smart technology. Here is how different sectors are leveraging it:

- **Retail & Quick-Service Restaurants (QSR):** Operators can ensure promotional content evolves based on the approximate age of shoppers approaching a window display or menu board. They can also use traffic patterns to map promotions around rush hour or high-volume shopping windows.
- **Healthcare & Pharmacies:** Facilities can seamlessly present relevant content to passing foot traffic—from promoting physicals to young adults, to highlighting prescription refills for seniors.

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- **Corporate Lobbies, Showrooms, & Entertainment Venues:**
Businesses can automatically promote onsite conferences, events, or catering options by tracking real-time audience demographics.
- **Financial Services:** Banks and firms can dynamically promote college funding, mortgages, or retirement planning based on the specific age brackets standing in view of the sign.

One Proven Solution: CAYIN Technology

CAYIN Technology is a pioneer in creating versatile, intelligent digital signage for global markets. Its proprietary solution, AI Audience Sense, is an AI-powered smart digital sign feature that detects general attributes like presence, approximate age, and gender for real-time content triggering and aggregated reporting.

Backed by more than two decades of experience building reliable, Linux-based digital signage hardware and software, CAYIN is trusted by businesses in over 100 countries. AI Audience Sense gives operators a practical, cost-effective path to smarter screens without needing to replace the core infrastructure they already rely on.

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AI Audience Sense utilizes edge-based processing, ensuring that video footage is analyzed locally and images are neither transmitted nor stored. This approach enhances data security and compliance while reducing the risks associated with cloud-based image retention. Collected data is maintained securely, using state-of-the-art privacy procedures. CAYIN's comprehensive solution is commonly used by retail and healthcare clients but is adaptable to numerous industries.

AI Audience Sense offers a straightforward way to start understanding—and responding to—the people standing right in front of your business.

To learn more, visit www.cayintech.com.

ABOUT THE SPONSOR:

CAYIN Technology, founded in 2004 and headquartered in Taipei, Taiwan, is a professional digital signage solutions provider trusted by businesses in more than 100 countries. The company builds reliable, Linux powered SMP media players and content management software that give operators full control over their signage networks, from a single screen to thousands of distributed locations. With features such as AI Audience Sense, CAYIN helps retail, healthcare, transportation, education, and corporate clients turn static displays into responsive, data driven communication channels. Learn more at www.cayintech.com.

