



Shape the
Future Through
Intelligent
Display
Experiences

intel®

The World Needs Digital Signage

Digital signage has become an integral component of the urban ecosystem.

Sustainability and Energy Efficiency

Environment

Poster communication has a very short shelf life, and the waste generated from monthly multi-location print campaigns has much more substantial implications than setting up a digital signage network. Digital signage messaging can be updated easily, eliminating the need to print new signs over and over as messaging necessities change.

Targeted Messaging and Measurement

Marketers

We live in a world where consumers fast-forward through television commercials. Users reject paid search engine results in favor of organic selections while using blockers to counter pop-up ads. The power of digital signage lies in its ability to connect the dots effectively among other screens and to help ensure that an appropriate message is communicated to consumers with each step of their daily movements.

Choices with Immersive Experience

Consumers



Digital signage spans various forms such as kiosks, media players, electronic paper displays, and interactive smart screens. The expansion of face recognition, smart digital signage, smart shelves, and other innovative services will be paired with emotional comprehending, social networking, and navigation for a richer customer experience.

Creating a Better Citizen Experience

Governments

Digital signage can help improve the brand image of governments worldwide - from enabling smart cities to improving government offices and services, creating better citizen experiences. Government offices can improve communication, educate users on services, and improve customer service with digital signage.

Enabling a Dynamic DOOH Experience

Outdoor Advertising

The latest digital signage solutions offer new capabilities enabled by AI and analytics, making it possible to connect brands to their target audiences with the right message at the right time. The impact is multiplied since DOOH can now provide more data about audience demographics and engagement making the process addressable, accountable, and attributable.

The Trends Driving
Adoption of
Digital Signage



Personalization



Interactivity



Connectivity



Performance



Consumer
Engagement



Media Formats

Intelligent Display Experience Powered by Next Generation Performance, Graphics and Connectivity





Creating an **Interactive,** **Customized** and **Personalized Experience**

Meet Dan, a 27-year-old millennial who is a physical therapist. Let's find out how digital signage changes the world for him, creating innovative and immersive experiences.

Giving Customers a Better Dining Experience

Dan begins his day with a coffee and toast at his favorite café, skimming the news on his tablet. He wonders how the café's system precisely knows what he wants at any time of the day.

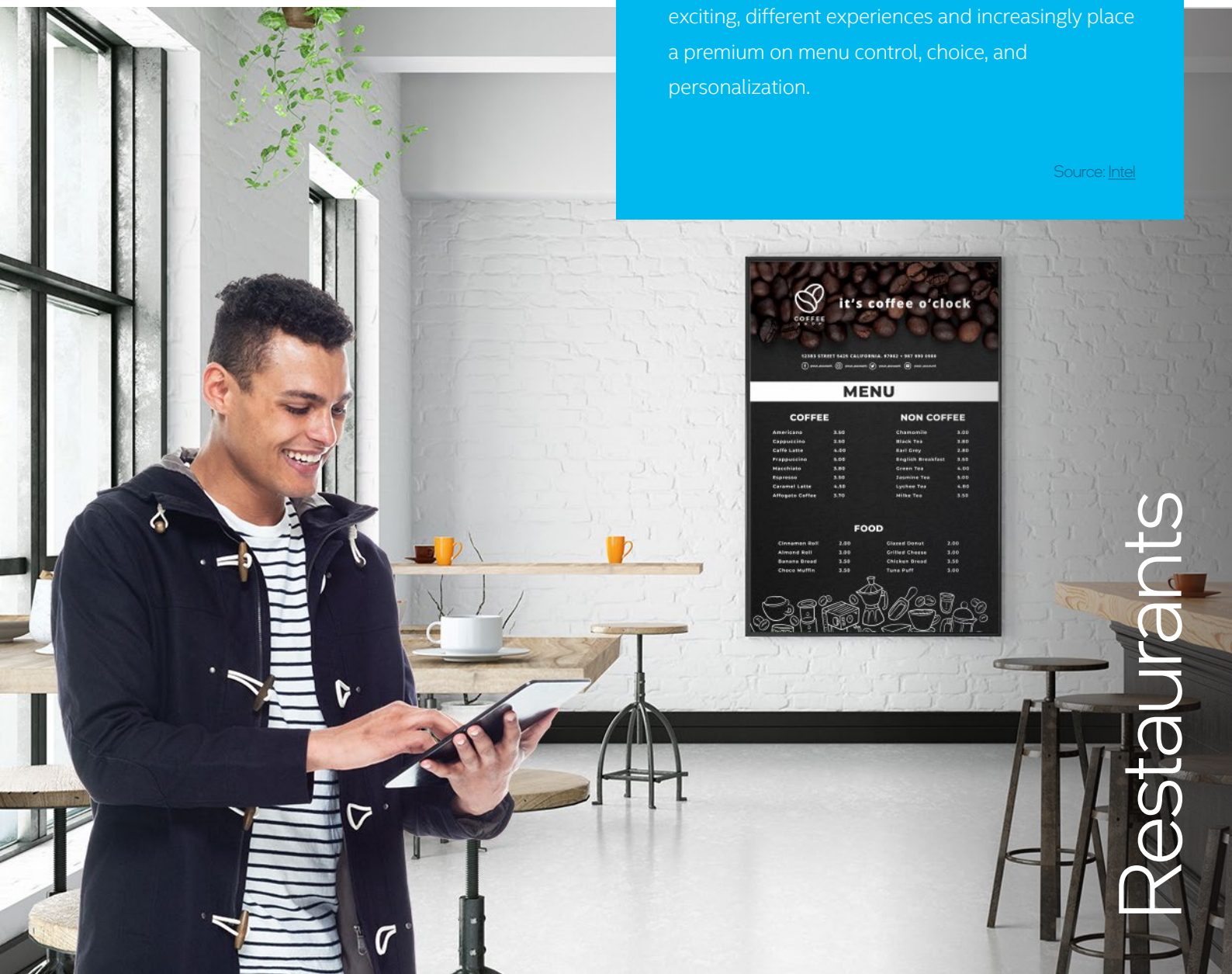
Engaging digital signage presents what's on the menu at quick-service restaurants (QSRs) providing the convenience and speed that will keep customers hungry for more.

74%

of customers say an easy-to-read menu is their top priority.

Digitally savvy consumers (aka "techsumers") expect exciting, different experiences and increasingly place a premium on menu control, choice, and personalization.

Source: [Intel](#)



Restaurants

Ordering Kiosks | Personalized Menu | Waiting Time Display Boards | Digital Menu Boards | Social Media Wall
Collect Feedback | Add Decor | News Updates | Weather Conditions, etc.

Transportation



Congestion and delays cost time and money and make for a stressful experience. Digital signage can provide information on traffic congestion at bus stops and train stations. They can display station maps, critical traveling time and seat information.

Adapting to How People Get Around Cities

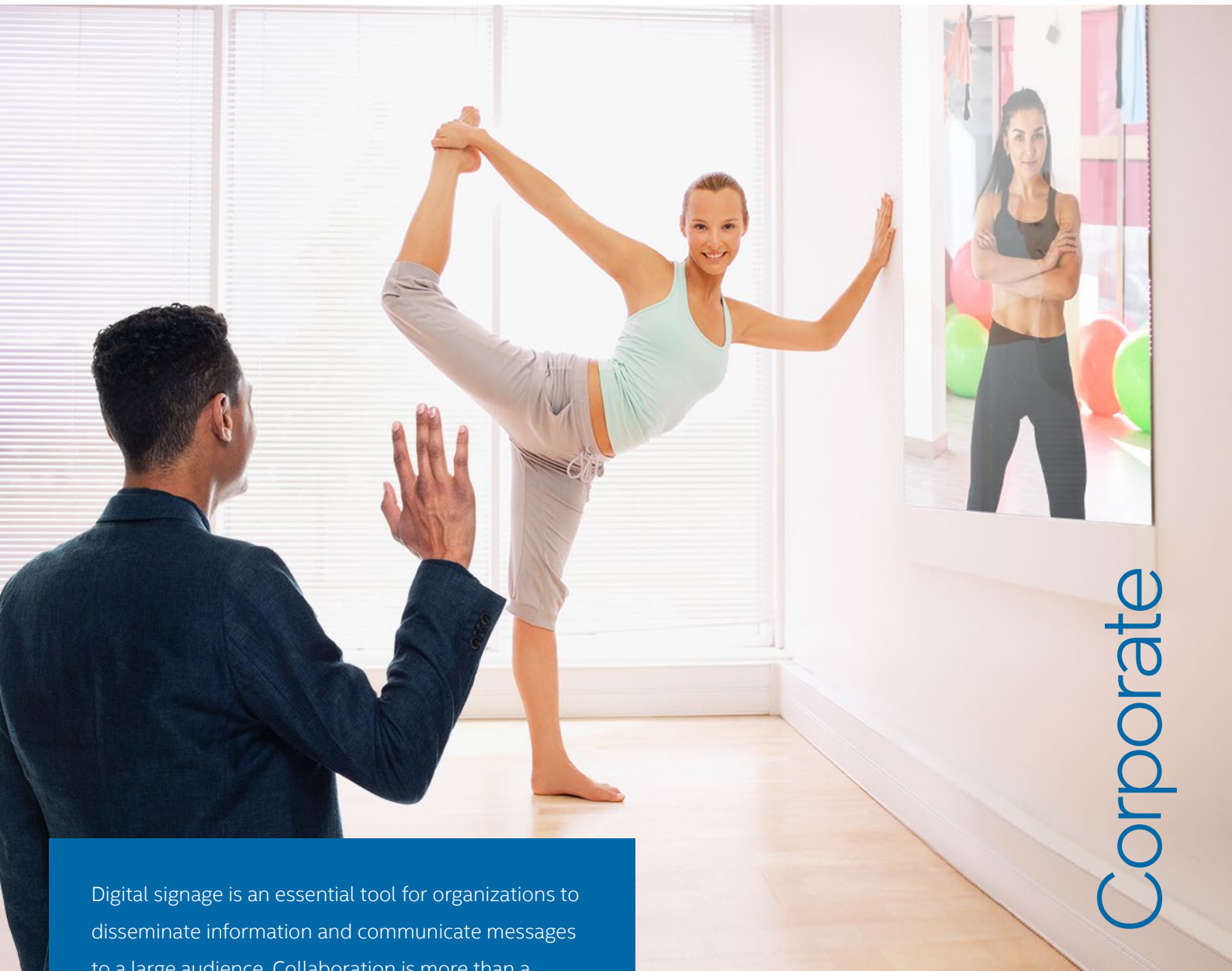
Dan drives to his gym, parking his car in the nearby metro station, and taking public transport for the rest of the way. The ticketing system interacts with Dan's digital scheduling assistant and recommends the seat and ticket that best fits his calendar.

60 HOURS

Saved by implementing digital signage and IoTbased Smart Traffic Systems. This includes dynamic traffic light phasing, smart parking, less time in traffic, and citizens' ability to choose the fastest metro/bus lines.

Source: [Intel](#)

Ticket Booking Kiosks | Interactive Schedules | Share Announcements | Terminal Maps | Travel Updates
Promotions for Local Events and Attractions | Security Information | Social Media Wall | Collect Feedback
Add Decor | News Updates | Weather Conditions, etc.



Digital signage is an essential tool for organizations to disseminate information and communicate messages to a large audience. Collaboration is more than a trendy buzzword. It is a critical ingredient for creativity, ingenuity, and shaping corporate culture. Digital signage can help facilitate engagement and enable the ideation process.

3.5 TIMES

likely that executives at high-performance organizations will use intelligent collaboration than their counterparts at low-performance companies.

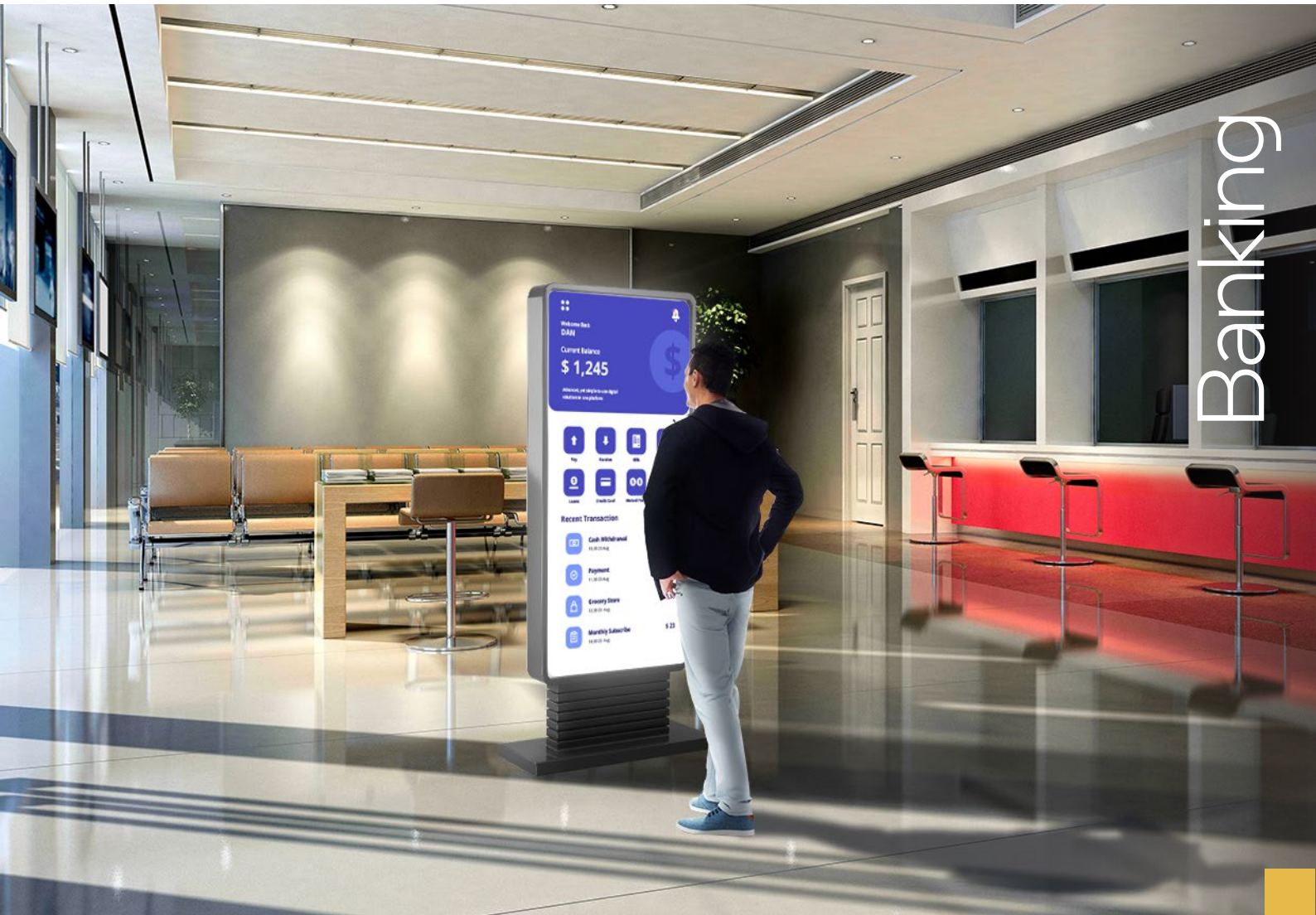
Source: [i4cp](#)

Making an Impact in Corporate

Dan reaches the gym, located in one of the busiest sections of the central business district. While paying attention to his students in the class, he gives a shout-out to another student who is live-streaming simultaneously on their smart gym mirror. He then attends a Personal Trainer meeting before calling it a day at work.

Harnessing IoT for Smart Banking

Dan has a quick lunch and runs some errands, including checking his financial plans and personal investment options at his preferred financial institutions. The experience is quick and seamless. Thanks to the AI Chatbot digital signage assistance and mobile integration.



Competition among banks makes customer visits more crucial than ever. Every visit is a significant opportunity to build relationships. Digital signage gives banks many ways to engage customers' attention, reduce waiting time, and make the most of their time in a branch.

\$116B

market size expected by 2026 due to expanding use of innovations such as E-wallets, virtual assistants, self-assisted services, and highly authenticated security systems

Source: [Fortune Business Insights](#)

Welcome Visitors | Share Announcements | In-branch Experience | Queue Management | Branding and Promotions
Currency Updates | Self-Help Interactive Kiosks | Collect Feedback | Add Decor | News Updates | Weather Conditions, etc.

Rewarding Brick and Mortar Store Customers' Loyalty

Dan is in a great mood today, and he decides to reward herself with some well-deserved retail therapy before heading home. As he enters the store, a video wall greets Dan and directs him to his favorite section. There the intelligent shelves provide nutritional ingredients and tips for his wellness plan.

Those who venture into physical retail stores are looking for a safe environment and a customer experience that resemble their online expectations. AI vision technology offers capabilities, including tracking the number of people who enter a store and how long they stay, scanning shelves for out-of-stock items.

40% expected growth rate for IoT in retail through 2025.

This growth can be attributed to increasing adoption of retail analytics software to monitor consumer behavior.

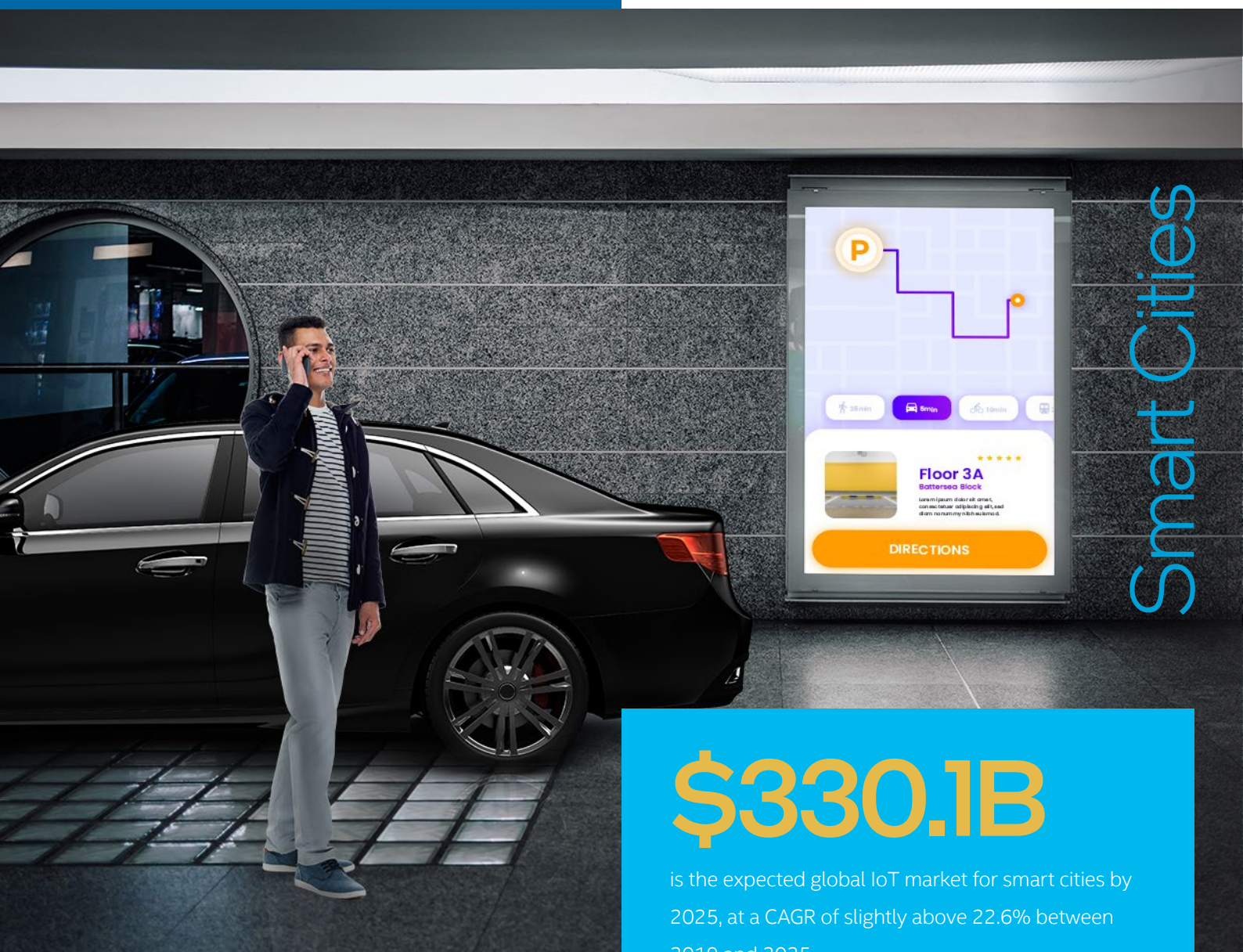
Source: [Research and Markets](#)



Screens drawing on intelligent data from all around will do a better job of informing and guiding the general public in real-time. A screen hub on a city sidewalk can be a data center on the edge of a dispersed network – with edge computing, virtual servers, and data storage running locally, offering content such as infotainment, advertising, and other services.

Digital Kiosks Will Be the Smartphones of Smart Cities

Dan finally makes his way home, thankful to the smart car-park drive-thru signage that guides him with route and parking instructions for his complicated block. He looks forward to taking his dog for a walk, wind down, and call it a day.



Smart Cities

\$330.1B

is the expected global IoT market for smart cities by 2025, at a CAGR of slightly above 22.6% between 2019 and 2025.

Source: [Zion](#)

Emergency Notifications | Transport Schedules | Traffic Updates | City Service Information | Promotions for Local Events and Attractions
Local Community Information | Social Media Wall | Collect Feedback | News Updates | Weather Conditions, etc.



New Era of Communications for a New Generation

Getting the right message to a targeted group at an appropriate place and time has never been easier with innovative technologies and applications such as:

Rich Content & Resolution

4K (8 million RGB pixels) and even 8K (~32 million pixels) in a single continuous display over 55m².

Media Player Integrated Displays

Standardization of VR applications with media player integrated designs.

Walls as Canvases

Closer to the viewer, high-performance as well as vast area seamless displays.



High Bright Big Signage

Daylight readable, nature ready outdoor signage displays.

Mobile Integrations

Interact with smartphones through beacons to deliver targeted messages and purchasing options.

Rich DOOH Experience

Context and recognition aware, AI responsive, secure and immersive

Manageability

Intel® vPro™ processors make it possible to remotely manage—both out of the band and in the band—and efficiently maintain extensive networks of solutions. Intel vPro processors also offer interoperability and versatility, integrating with various content management software programs.

Standardization

Standardization helps ensuring the ease of interoperability. Intel is involved in driving technology standards with Intel® SDM and OPS reference designs, and provides tools and support for the ecosystem

Performance/ Rich Media

Intel's graphics deliver high-performance rich media capabilities. 8K displays using Intel platforms are ideal for visually rich implementations and small form factor entry-level solutions.

Security

Intel delivers security solutions that are simple to implement, seamless to deploy, and easy to use and manage. Security capabilities are tightly integrated with the hardware so they can provide consistent protection for robust implementations.

Measurement

Capture valuable consumer data on traffic, audience engagement, interaction habits, demographics, emotional response, and more. Act on advanced analytics with high-performance Intel® CPUs.

Why Intel Should Be Your Choice of Digital Signage

Intel reaches out to a wide range of people to fulfill its purpose. Starting with people around us like our family, friends, relatives, colleagues, partners, and the rest of the world's population. Our passionate designers and engineers located across the globe have purposefully built designs to meet their needs.

Natural Intuitive Interaction

Interactivity drives the need for higher-end processors, and interactive solutions drive a better, more engaging customer experience from touch to gesture-based human-computer interaction.

Deep Learning Inference

The Intel® Distribution of OpenVINO™ toolkit streamlines the process of deploying computer vision across a range of Intel platforms. By adding vision capabilities to digital signage, media networks and advertisers have new ways to measure campaigns' addressability, accountability and attribution.

A Future of Endless Possibilities With Intelligence Display Experiences

The increasing implementations of digital signage now require new thinking, such as streamlining ways to design, implement, and manage large networked systems. Today, companies manage hundreds of signs that are remotely yet securely connected to the cloud or back-end retail systems.



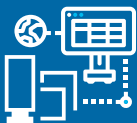
Creating a Simple and Connected Environment

Living in an always-connected environment, we create and share content, start conversations, and expect interactive experiences. Digital signage is an essential customer engagement tool thanks to graphics, performance, and connectivity advancements.



Digital Signage as the Center of Experience

Digital displays create endless opportunities to serve consumers in entirely new ways. For example, intelligent displays can read automobile license plates for faster curbside pickup or count footfall to conform to health regulations.



Empowering a New Ecosystem of Platform Players

Maximizing the customer experience requires content to take advantage of 4K (or 8K) and media players. For this to happen, platform players - both new and existing will come together and drive industry effectiveness, inspire new usage models and innovations, enhance revenue opportunities, and ultimately keep the momentum going.



Making Every Screen Addressable, Accountable and Attributable

DOOH is one of the fastest-growing forms of advertising. Intel focuses on creating addressable solutions - to enable the programmatic activation of a digital advertisement, accountable - to measure the ad's effectiveness and attributable - to measure the real business outcomes based on the ad.

Unified Partner Portal for Unlimited Possibilities

Intel® Partner Alliance connects the data-centric services and solutions that will enrich every person's lives on earth. Data has emerged as a transformational force and our challenge lies in these more complex and advanced data-centric solutions that require higher degrees of collaboration.

To enable our partner community to embrace this movement best, we have launched the Intel Partner Alliance Program.



Intelligent displays enable the programmatic activation of digital content, measuring the content's effectiveness and real business outcomes based on the content.

Even as Intel continues to accelerate investment in attribution, programmatic, and technology, we observe that digital signage has become a significant part of our lives.

GEORGE LORANGER

Director, Product Management | Retail, Banking, Hospitality & Education | Internet of Things Group - Intel Corporation

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