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The Evolution of Audiovisual Experiences in

Transportation

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The poet T.S. Eliot famously said that in traveling, the journey, not the destination, is what matters most. For many transportation centers, such as airports, and rail and bus stations, this idea is taking on greater importance. These hubs are increasingly focused not merely on getting travelers to their destinations, but also on delivering a valuable experience to them — one that delights, relaxes and entertains.

"We are in the era of technology and communication," says J.C. Arteaga, Associate Vice President at HNTB and architect of record for the South Terminal Complex at Orlando International Airport. "Airports are no longer places where you just go and travel. You go there and you socialize, you work, you connect, you're entertained. The audiovisual experience plays a vital role."

Audiovisual (AV) technology has long been an important part of delivering a positive travel experience — from wayfinding, to digital signage, to flight information displays. Today, its importance is growing, as AV solutions become more experiential and immersive, and transportation centers find new and innovative uses for them.

For decades, audiovisual solutions such as LED and LCD displays have been used for a variety of purposes. A key use is to provide essential information to travelers, such as flight times and status reports, as well as wayfinding to help travelers locate important facilities, such as restrooms or baggage claim areas. These displays also are used commonly for advertising, helping transportation centers generate revenue.

Directional audio — the ability to use technology to make sure sound lands exactly where it's supposed to — has also become an important AV solution, especially in airports.

"I recently visited Reagan National Airport traveling to D.C. and I was amazed how at a busy airport, with a lot going on, I could walk up to a screen and whether it was a news feed or sports feed, I could hear the audio for only that screen and not another nearby screen," says

Jeff Roach, Manager of Fairbanks International Airport in Alaska. "Zonal audio is really a great technique for not overloading a person and allowing them the experience that you're trying to give them without all the distractions."

These uses of audiovisual technology deliver value to transportation centers, helping passengers reach their destinations while providing useful and interesting information. But a third use has emerged in recent years, adding a creative new element to the travel experience. Airports and other transportation hubs around the world are installing audiovisual displays that create an atmosphere and deliver an immersive experience. Forward-thinking airports are making significant investments in audiovisual installations that can entertain and relax travelers while creating a unique identity for the transportation center.

"You can use these tools to create a general feeling of, 'I'm in a comfortable place, I'm in a safe place, this is a place where I want to come back to again,'" says Roach. "It gives you that overall good feeling about the experience that you're having."

At Vancouver Airport in British Columbia, Canada, a 12.5-foot-by-7.8-foot LED display plays interactive custom content created by Float4, an experience design firm based in Montreal. The installation is located near the security area, where it is intended to entertain passengers as they wait in what can be a stressful part of the airport. The system utilizes sensors that can detect the movement of travelers walking by or standing in line, then reacts to them with custom content.

"The intent is to get the anxiety out of the travel experience and just have a beautiful visual experience that makes passengers think about the destination they're going to and have an enjoyable time while getting there," says Alexandre Simionescu, Principal and Creative Director at Float4.

Other installations combine multiple objectives. In Aukland, New Zealand, the Britomart Transport Centre, which serves as a major interchange for trains, buses and ferries in the country's largest urban area, a pair of massive LED displays deliver both experience and advertisement to travelers. The "Britomart Towers" measure nearly 16 feet high and 9 feet wide, offering stunning visuals to travelers while delivering ads to more than 35,000 passengers each workday.

"They're in a fabulous location, so they don't get in the way of the passengers and nobody can miss them," says Gerry Thorley, Director of Digital Place Solutions, which helped to design the display. "Aesthetically, it's very pleasing. It's a really iconic, eye-catching outcome."

Los Angeles
International Airport

Case Study

Case Study: LAX

AV Solutions Entertain and Inform at LAX

Travelers who fly through the Tom Bradley International Terminal at Los Angeles International Airport get a lot more than a flight. As part of an ongoing modernization program, the airport is incorporating innovative technology solutions in a variety of ways to improve the travel experience — both by delivering information effectively to travelers who need it and creating a relaxing, interesting and entertaining atmosphere.

"Technology is a very important part of our strategy moving forward," says Justin Erbacci, Chief Innovation and Technology Officer at Los Angeles World Airports, which operates LAX. "Historically, up until our new CEO came, there was not a lot of emphasis on technology at LAX, beyond the installations in the new Bradley Terminal in 2013. We are now trying to change that dramatically."

The central piece in the Bradley Terminal is a 72-foot Time Tower near the terminal's main elevators. The installation, one of several innovative displays designed by MRA International and Sardi Design for the airport, features a real-time clock and 6,480 square feet of LED surface. The motion-sensitive, interactive display responds to travelers' movements with various pieces of content designed to entertain them.

Travelers arriving at the terminal are greeted by a Welcome Wall, a video display standing 84 feet tall and 26 feet wide. "When people arrive there's an escalator, and we understand how long people will experience it. They'll be there for about a minute to a minute and a half," says Sakchin Bessette, co-founder and Executive Creative Director of Moment

"We want to be able to make sure that our investments are improving the guest experience."

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Factory, the Montreal-based multimedia entertainment studio that worked with LAX to create a stunning array of digital content. "We created a very big, ambient waterfall, very relaxing. You're coming off the plane, you're just tuning into the city, and you want to be in a relaxed environment."

Similarly, a 23-foot-tall, 13-foot-wide Bon Voyage Wall display delivers messages targeted toward departing travelers. The Story Board in the terminal's Grand Hall arranges eight video displays into a 120-foot-wide by 30-foot-tall media wall that provides images associated with L.A.'s film, music, comic book and graphic arts industries. Moment Factory created the content for the displays, incorporating a variety of techniques that include motion design, live-action filmmaking and 3D animation.

"It's totally immersive, hitting all of your senses, entertaining people, creating emotional draw, so what we're finding is that people are actually looking forward when they're booked on an international flight through the Bradley Terminal," says Andy Merkin, Producer and Director of Moment Factory's Los Angeles office. "They're looking forward to that experience, which is kind of flipping traditional transportation entertainment on its head."

The airport also is taking an innovative approach to delivering the information travelers need. LAX is conducting a pilot program with interactive kiosks in its terminals. Not only do the kiosks provide information such as wayfinding and flight data, but they also can connect travelers via videoconference with customer service representatives who respond directly to questions.

"It's been very successful," Erbacci says. "I would anticipate that we're going to roll these out wherever we can."

The airport is counting on its technological and audiovisual improvements to deliver a number of valuable results.

"We want to be able to make sure that our investments are improving the guest experience, making our operations more efficient and helping us to increase our non-aeronautical revenues," Erbacci says. "Those are three very important goals for us at the airport, and many of our digital solutions or digital strategies are aimed towards them."

Singapore Changi Airport

Case Study

AV Helps Make Changi the 'World's Best Airport'

What was the reaction of Changi Airport in Singapore to being named the World's Best Airport for five years in a row? To continue innovating and improving on the world-class traveler experiences that have cemented its status. The result? Skytrax named Changi the World's Best Airport for the sixth consecutive year in 2018.

"They have an Experience team at Changi that is basically dedicated to constantly improving the passenger experience in every aspect of each terminal," says Bessette of Moment Factory, which also produced content for Changi.

Changi Airport is one of the world's busiest airports, serving more than 60 million passengers a year on over 100 airlines, with flights to nearly 400 global destinations. Understanding that the airport is generally the first thing visitors see when they arrive in Singapore, and the last place they remember when they leave, Changi sought to keep travelers informed, engaged, and entertained. With the opening of Terminal 4 in November 2017, the airport's operators installed state-

of-the-art digital display solutions to help accomplish their experiential objectives. "With Terminal 4, we have sought to create an enjoyable and memorable travel experience for our passengers, from the facilities and services, to the environment and the visual elements within — especially in locations with higher footfall and longer dwell times," says Poh Li San, Changi Airport Group Vice President in the Terminal 4 Program Management Office. "The collection of art and entertainment formats in T4 was commissioned to be accessible to people of all ages and backgrounds, and it is a diverse blend of mediums, sizes and imagery that etches an inspiring first and last impression of their journey through T4."

The first display visitors see in Terminal 4 is the Immersive Wall, situated above the security screening area. This LED display, 70 meters wide and 10 meters high, engages travelers during the normally tedious security screening process. "The objective was to totally transform even the least appreciated traveler moments, like security, into times of delight and discovery," Bessette says. "We continue

Case Study: Changi Airport

to collaborate with Changi to produce an evolving library of audiovisual capsules that create these unique ambiances."

A smaller installation, which also uses an LED display, is located in the airport's Heritage Zone. It displays content that celebrates the growth of Singapore's traditional Peranakan culture and 'shophouse' architecture of the 20th century.

The airport made a significant investment in innovative content for these displays. For example, one of the clips that is shown regularly on the Immersive Wall, called the Fresco, simulates a three-dimensional sculpture of carved stone. However, passengers see that the content is more than a static sculpture, as a butterfly takes to the air or an elephant slowly turns its head, and when the visuals transition gracefully into a totally new series of animations.

Changi also uses technology to help speed travelers through the usual places where

the process slows down. The airport uses automation to check travelers in for their flights, as well as to check their luggage. Large LED displays offer detailed flight information, but if travelers need human interaction, they can talk to a customer representative as well.

Ultimately, Changi wants to make travel easier, speedier and more enjoyable for customers, who then will have more time and energy to explore the rest of the airport. When happy, relaxed customers spend more on food and retail goods in the terminal, the airport's profits grow. And when the airport itself is seen as an attractive destination, travelers are more likely to choose to travel through Changi, helping it maintain a grip on the spot as the world's top airport.
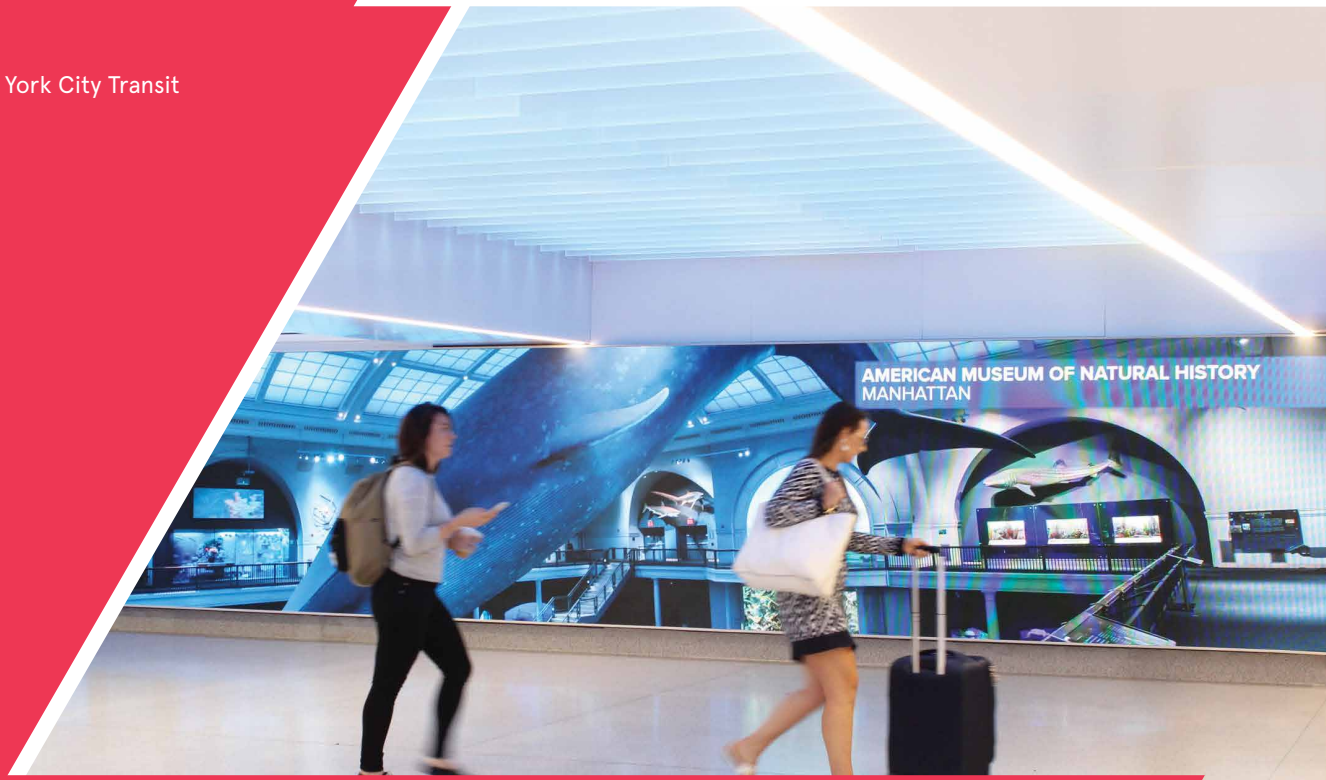
"Changi is a revolutionary airport," Bessette says. "They really have an amazing vision of the future of airports not just as gateways but as holistic destinations—as extensions of the cities and cultures, the places and people, that they connect."

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New York City Transit

Case Study: New York City Transit

New York City Transit: Delivering a Ride and an Experience

New York City's transit stations are some of the world's most storied transportation hubs. Locations such as Grand Central Terminal and Penn Station have their own architectural significance. But as the operators of these venues maintain the history they represent, they're also moving forward to deliver efficient, engaging, enjoyable experiences for their passengers.

Audiovisual technologies are essential tools to help these travel centers achieve this objective. For example, Grand Central Terminal is undergoing a $220 million renovation to improve its capacity. As part of the project, the station is replacing display boards on each of the ticket booths in the main concourse with new LED displays. It is also replacing 96 gate boards with LED screens on train platforms to let riders know the destination of each train.

"It's more efficient, and it also provides a better display image on those schedule boards, because some of the displays on there are just hard to read," says Greg Bowes, Director of Contracts and Construction with Ford AV,

which is handling the installation of the new LEDs. "Technology has gotten so much better on LED that riders will have a much clearer, better, easier ability to actually view the information on the boards."

In addition to the effective delivery of information, transit hubs are implementing audiovisual solutions to establish a more comfortable, engaging atmosphere. Roughly one mile to the west of Grand Central Terminal, Penn Station is expanding to accommodate more riders by redeveloping the James A. Farley Post Office Building. The renovated building is scheduled to be complete in 2021, and the new Moynihan Station will place a significant emphasis on aesthetics.

"Moynihan was a space where the main concern was ambiance," said Chris Mascatello, Executive Vice President of Technology Solutions for ANC, the audiovisual technology integration firm that outfitted the new entrance with a series of atmospheric LED ceiling features and displays that create the impression of open sky and clouds. "It was a space with low ceilings,

"What's interesting about digital signage in transportation and public spaces is that the value is in perception"

and the idea was to make the passenger experience better by introducing color and dimensionality overhead."

Farther downtown in Manhattan, ANC also delivered large-scale creative video to the Fulton Center, with its three-story oculus transportation hub, which is ringed by the Westfield World Trade Center retail area. The Fulton Center's video displays handle both travel information and advertising. The largest display is a 285-foot-long, 10-foot-high LED video wall in the most glamorous portion of the facility. Other installations include digital signage deep within the subway tunnels.

These transit hubs have found that combining information and ambience makes for happier travelers.

"What's interesting about digital signage in transportation and with public spaces in general is that the value is in perception," says Eric Henry, President of solution provider Tightrope Media Systems. "It doesn't change the wait time, but it helps the perception of wait time."

Improving the look and atmosphere of a travel center is a laudable goal on its own, but it also has benefits for the bottom line. "You can mix aesthetics and advertising in subtle ways," Henry notes. "We're starting to see more use of these nice panels, 82-inch panels or 3x3 video walls. They'll show moving video of local attractions or scenery, depending where you are in the facility and the aesthetic of that space. You can do that and it doesn't feel overwhelming."

London Heathrow, Gatwick and Stansted Airports
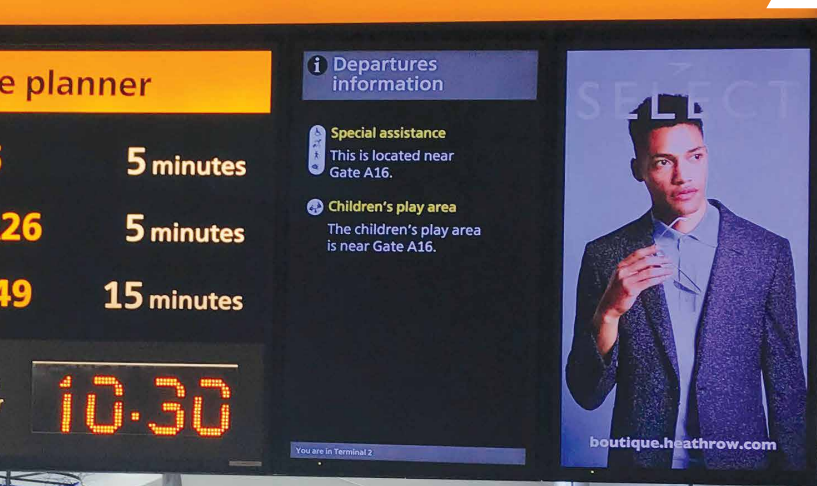
London Airports: Setting the Standard for Service

Airports in the United Kingdom have a powerful incentive to deliver an engaging experience to travelers. Facilities such as Heathrow, Stansted and Gatwick operate under a Service Quality Rebate scheme that requires them to provide a set level of customer service. If they fall below that level, they must pay a rebate to the airlines that operate in them.

As they strive to meet the standard for service, these airports are utilizing audiovisual technologies in a variety of innovative ways.

For example, Gatwick wanted to improve its required Quality of Service Monitor (QSM) scores. The airport needed a way to better provide wayfinding and passenger information than it was able to deliver through its current flight information display (FID) system. Information on the 40-inch screens was difficult for travelers to read, resulting in potentially missed flights and large bottlenecks as passengers looked for gates and flight times. The airport installed a much larger video wall that quadrupled the size of the flight information, making it much easier to see, even from a distance.

"The success of that meant that the QSM score increased," says Tim Dixon, Innovation and Commercial Director with ADXBA Limited, which handled the installation. "So they went from potentially paying hundreds of thousands in rebates, to comfortably paying zero. Plus, let's not forget an overall improved passenger experience."

That success has led to Gatwick rolling out six more mega-FIDS across its North and South Terminals.

At Stansted, the airport authority sought to enhance its capabilities to deliver digital advertising. The airport deployed a 39-foot-long large-scale visualization system, the first curved screen installed at any airport in the U.K. In addition to helping travelers find their flight information, the brightness and size of the display also helps advertisers get their message across in a way that is engaging to customers.

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Case Study: London Airports

"Airports have a unique need to deliver important information right alongside advertising to tens of thousands of people every day," says Joe' Lloyd, Vice President of Global Marketing for NanoLumens, which created the curved-screen technology. "Stansted Airport is making it easier for their customers to find their flight information as well as providing an advertising platform that simply can't be missed."

Heathrow also is utilizing innovative audiovisual technologies to engage travelers. The airport features a variety of video technology throughout the airport, including displays that tell travelers how long it will take to get to certain parts of the airport, and terminal-by-terminal customer-satisfaction metrics for things like cleanliness and accuracy of flight information.

But one of Heathrow's installations focuses on much smaller screens. In addition to large-scale video displays for getting information to travelers, the airport installed banks of tablet kiosks across Terminal 2 to provide passengers with airport and flight information. The installation ensures that passengers are always close to a useful source of information without being overloaded by a huge board with data from dozens of flights. The iPads installed in the kiosks also offer free internet access to travelers who may want to book a hotel or search for directions.

Gatwick is also experimenting with using audiovisual technologies to conduct subliminal wayfinding. The goal is to guide passengers to a specific location dynamically without having to communicate with them directly. People respond to light and colors in common ways, and subliminal wayfinding uses lighting and colors to guide them where they need to go.

"There are lots of international people arriving at airports, so you try to iconize and simplify things with graphics. By using subliminal, it doesn't really matter what nationality you're from, it's a universal language" Dixon says. "People that speak only Chinese, or English, or German or French will all still naturally follow a route via the subliminal wayfinding."

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Transportation Centers Put Their Best Foot Forward With AV Solutions

In years past, many people dreaded traveling. Waiting in long lines, standing in cramped quarters, and searching fruitlessly for information created a stressful environment that could turn off anyone. But many transportation hubs are having great success in reversing this sentiment by delivering the information that travelers need, along with an experience that delights and relaxes them.

"The cool thing about technology is it allows you to integrate all the functional areas of passenger experience," says Michael McElvaney, Director at LeighFisher, which has been consulting for the aviation industry more than 70 years. "From the time they walk in the front door, you can actually track the passengers, check the queue times, follow where they're going, and then you can use that information to determine how you want to best provide the experience for them."

Audiovisual solutions are playing a major role in this evolution. Whether it's a massive video wall with content that amazes and amuses weary travelers; a clear, informative LED display with flight or ride details; or a lighting system that guides passengers where they need to go, audiovisual technology is changing the nature of transportation and travel.

> "The cool thing about technology is it allows you to integrate all the functional areas of passenger experience."

Going forward, the industry will continue to evolve. Some travel centers will emulate the most advanced and innovative venues in the world, delivering cutting-edge content on screens that were unheard-of only a few years ago. Others will focus on more practical pursuits, such as wayfinding and travel updates. Regardless, the industry will move forward.

"The audiovisual side is embracing the content piece and trying to help property owners in any category understand that this is a wonderful opportunity for their riders, their fliers, their shoppers, whatever," says Gerry Thorley of Digital Place Solutions. "Once it catches on, it will become standard."