LED DISPLAY TECH:
ENERGIZING THE AIRPORT

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ENERGIZING THE AIRPORT

Thanks in part to the advent and proliferation of near-universally accessible digital technology like smartphones and laptops, the age where travelers spend an entire day at an airport has largely passed. The tightening of security processes has created a temporal floor on the amount of time travelers typically spend at an airport, but in general it's becoming rarer for passengers to have any interest in increasing that time frame. Passengers begrudgingly understand they have to arrive at least an hour before their flight, but many airports fail to provide enough incentive for passengers to extend their time on-site.

The monotony of security lines and crowded hallways is a deterrent for extending an airport experience, but what if it wasn't so dreary?

Airports are not typically stand-alone destinations in their own right, but that simplification of purpose does not necessarily relegate them to serving exclusively as characterless gateways from Destination A to Destination B. That an airport could be more than just a glorified transit station is still possible, but only if the practical and artistic philosophies behind the design and operation of today's airports are reevaluated and refreshed. Airports across the globe could take a hint from Changi Airport in Singapore, regularly ranked among the top air travel hubs in the world. The team at Changi has taken a unique approach to their concourse design, and it has dramatically improved the once-lackluster routine of waiting around.

Airport executive teams understand to stay afoot of today's increasingly demanding air travel consumers they must, like Changi, reengineer the way their terminals look, feel, and operate.

A city has an airport because that city is a place worth going to. To support their bottom line and help their community flourish, airports need to be places worth going through.

With most of the budget-conscious general public spending less and less of their travel time within the confines of the airport concourse, airport executives simply need to find ways to optimize the value of the time they are left with. The keys to doing this involve reinvigorating the passenger experience, projecting community leadership through the celebration of local culture, and the maximization of non-aeronautical revenue through versatile and sustainable means.

What this white paper will delve into is the ways in which LED display tech can advance each of these goals. To take advantage of the unique position they hold in their respective regions' economy, modern airports must accomplish multiple objectives; therefore they need to incorporate adaptable technology that can work towards each of these separate goals simultaneously. Here, we will discuss why LED display tech, with its unmatched breadth of utility, is precisely this kind of solution.

IMPROVING THE PASSENGER EXPERIENCE

A study was recently performed by airport loyalty specialist ICLP in which they discovered that 83% of travelers actively sought out flight information data prior to transit, but that only 58% of airports were doing an adequate job of providing it.

Clearly, travelers are not finding the information they need as easily as they should. Solving this problem is key to improving the passenger experience, and it requires an understanding of how modern travelers move about the airport space, as well as the tradeoffs they are willing to make in search of a more streamlined transit process. Flight information display systems (FIDS) use data that is in constant motion as planes hit delays and change gates, and thus airports must employ technology that can quickly adapt in face of these continuous changes.

INFORMED PASSENGERS MOVE CONFIDENTLY AND PURPOSEFULLY

Taking into consideration the needs of consumers and the nature of the challenge, there is a straightforward way an airport could and should improve the relay of flight data to airport-goers; simply increase the visibility and accessibility of FIDS by publicly presenting them in bigger and brighter ways. A natural way to do this is through the integration of large-format LED signage. A great example of how an airport has taken advantage of LED display technology to elevate the visibility of their flight information messaging can be found in Terminal 4 of New York City's John F. Kennedy International Airport. One out of every twelve people entering the United States from inbound foreign flights do so through this terminal, so the importance of communicating arrivals and departures information quickly and clearly cannot be overstated.

Travelers moving throughout an airport are not always going to be standing still though, nor will they be viewing an informative display from a single, predictable point. This is rendered a non-issue by the viewing versatility of LED visualization solutions, which allow viewers to see information clearly from anywhere in the room.

LED technology is ideally suited for use in airports because its off-axis versatility allows content to remain legible for non-stationary audiences.

As a viewer walks by a display, the amount of time he is able to see content is a function of the off-axis viewing capabilities of the display. In order to be effective, content needs to be seen, and the longer someone sees content, the more likely it becomes to leave an impression. The better the off-axis ability of the display, the longer your content will be viewable, and the more likely it will be to influence audience members. At the risk of oversimplifying, LED displays are designed to, well, display. The more versatile a display is with regard to off-axis viewability, the better it is at its designed purpose, and the more value it will provide.

Another example where LED display solutions have alleviated a critical pain point is in Atlanta's Hartsfield-Jackson Airport. Where once there stood a dimly lit LCD display that prompted congregations to gather in a scrum to see the screen, now there shines a brilliant LED display bright enough for crowds to see from further distances and wider angles. The jostling bustle of travelers that used to crowd this thoroughfare is thus dispersed, and foot traffic flows more efficiently because of it.

FIND YOUR WAY WITH LED

In addition to the improvements needed in the distribution of flight information, airports also depend on the ability to provide travelers with engaging and highly relevant wayfinding information about where they are and where they need to go.

Directions are brighter, clearer, more flexible and more visible when displayed on LED signage.

Vancouver International Airport came to this very conclusion when renovating their International Arrival Customs Terminal. Initial impressions matter immensely, and global travelers arriving to Canada, perhaps for the first time, are now met with the sleek, minimalist design of a 32-foot by 9-foot display welcoming them to Vancouver and providing them highly relevant information about how to proceed from their gate.

Of course, this sort of customized wayfinding information is only valuable if it can be understood. Wayfinding data presented in English is useless if the individual it is designed for does not speak English. With that in mind, consider this exciting possibility: LED wayfinding displays that change the language their content is displayed in based on the primary languages of the originating country of arriving flights of the planes flying in and out of nearby gates. For example, a plane arriving in Atlanta from Brazil could offer wayfinding instructions in Portuguese to disembarking passengers. Naturally, this would require the integration of additional software into the technology to scrape FIDS data, but the potential utility is incredible, and advanced content management systems like AWARE by NanoLumens may soon approach this ideal.

AWARE™

LED displays, paired with integrated content management systems equipped with internet connectivity like NanoLumens' AWARE® system, are now customizable and alterable remotely. The capacity to control display content from anywhere grants airport executives an immeasurable upgrade in flexibility, and allows flight details and wayfinding data to be updated in real time to keep travelers informed and engaged. It is imperative for signage to be topical, especially in an airport, and the improving mobile management capabilities of network-connected digital signage are an invaluable tool for achieving that.

Travelers met with customized wayfinding information and constantly updated FIDS displayed on an eminently visible LED feature will proceed along their itinerary more informed and efficient than before.
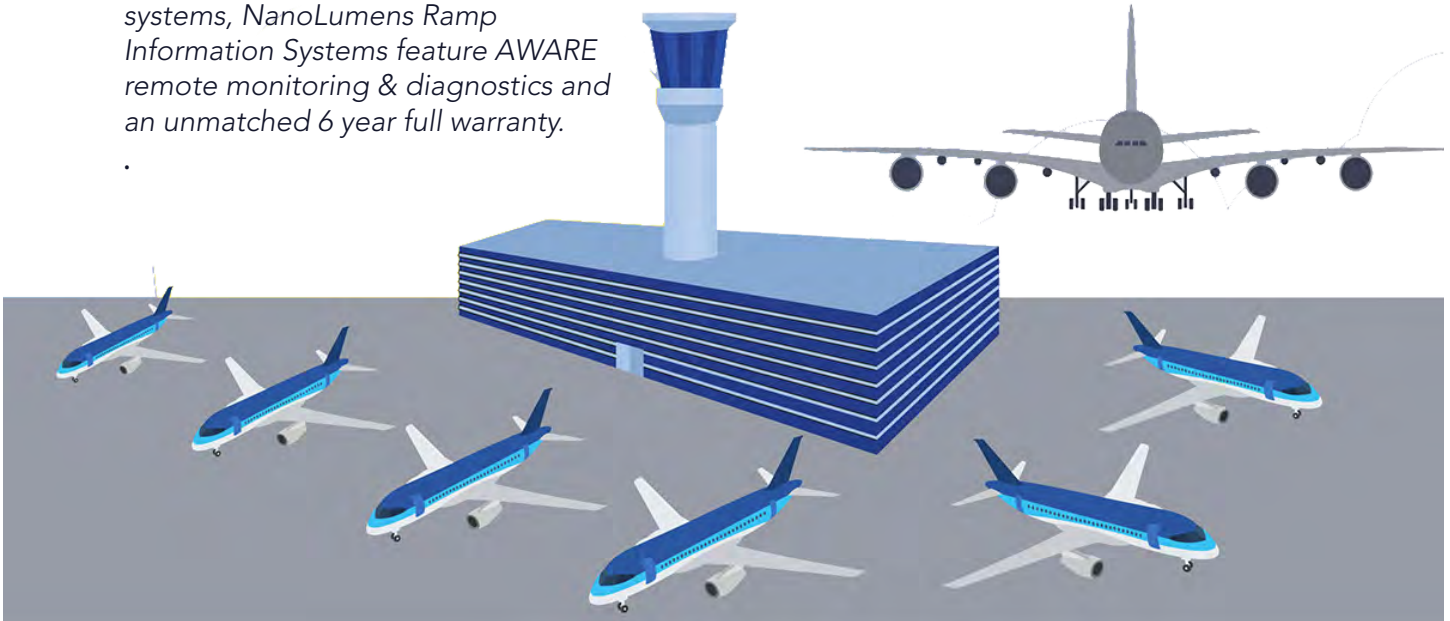
This is how you refresh the passenger experience; present information travelers need in a big, beautiful way, and let them be on their way.

EVEN MORE EFFECTIVE OUTDOORS

The utility of a large-format LED display holds doubly true for displays located out of doors, in direct competition with the sun. Outdoor displays are not particularly useful for regular civilian travelers, but pilots and ground crews need information relayed to them just the same as passengers do. These outdoor displays are of course more rugged, weatherproofed against rain, wind, and snow to ensure they perform no matter the conditions. Displays of this nature are used as Ramp Information Display Systems (RIDS) so flight crews can see details about where to go and what to do.

Departure times, delays, safety and weather alerts and other important messages can be featured in any language and changed quickly if necessary.

Unlike industry standard monochrome displays, messages and content are presented in vibrant full-color resolution, allowing both eye-catching static images and rich video content.

Compatible with standard media players or content management systems, NanoLumens Ramp Information Systems feature AWARE remote monitoring & diagnostics and an unmatched 6 year full warranty.

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PROJECT COMMUNITY LEADERSHIP AND CELEBRATE LOCAL CULTURE

Often the first thing a traveler sees when they arrive in a new city, airports serve an important role in communicating and celebrating the culture of the region they service.

As modern airport design embraces the cultivation of an immersive and local sense of place, more and more airport arts directors are treating their representative airports as showcases for the cultural and artistic diversity of their communities. By their very nature airports represent travel, but more broadly, they celebrate how physical travel facilitates the growth of different ideas and regional cultures. Designers have leaned into this essential paradigm of airport travel by redoubling efforts to incorporate aspects of local art and regional heritage into existing space.

Showcasing local culture is instrumental to engaging travelers. Travelers don't just want to be somewhere, they want to feel somewhere.

Consider "The Flower" found in Toronto's Pearson Airport. The stunning LED feature dominates a central gathering area of Terminal 1 with its beauty while also serving the practical purpose of providing flight information and weather details to

busy travelers. The LED feature has transformed what once was dead space into perhaps the most high-ly-trafficked location in the entire airport concourse, simultaneously branding the airport with the provincial symbol of the White Trillium flower. Airport personnel report they frequently overhear travelers saying "Meet me at The Flower," and claim the installation has enlivened airport staff and guests alike. As the gateway to Canada's largest city, it was imperative for Toronto Pearson to uphold the welcoming image of efficiency, artistic innovation, and cultural vibrancy that defines Toronto. In that pursuit, the Flower has proven an unmitigated success.

Other examples of how LED technology can be used to organically incorporate local culture into existing space can be found in what Changi Airport in Singapore has accomplished with their two prominent digital murals. One of the busiest transportation hubs in all of Southeast Asia, Changi has been regularly ranked among the world's top rated airports in the months following their groundbreaking installations. One is a massive 70-meter narrow-pitch video wall that illuminates the security screening area of Terminal 4 with

brilliantly colored content on a 50-minute loop. Travelers are provided engaging visual relief from the dull yet necessary task of waiting in a security line, and as a result the tedious process is made far more pleasant and efficient. The second installation is found in the airport's Heritage Zone, where the display shows a film celebrating traditional aspects of Singapore's rich history and vibrant culture.

HALLMARKS OF THE HOME TOWN

"The world's most livable cities foster vibrant communities, where arts and culture blend with bustling business, shopping and entertainment to create desirable places to live, work and play. The world's top airports reflect the quality of life their cities offer, augmented by the latest in travel technology."

Gensler
RESEARCH AND INSIGHTS

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Airport art directors are given annual budgets to spend beautifying their concourses and terminals with art installations that celebrate local culture and heritage. What they are increasingly realizing is that their capital is more efficiently spent installing an LED visualization solution instead of splurging on more physical, static artwork. Services like Loupe have popped up in recent years that allow for the digital "rental" of artwork from history's masters, displayable on LED visualization solutions of all shapes and sizes. Engaging these versatile services to cultivate an evolving, rotatable collection of brilliant artistic content is a more innovative and dynamic avenue for airport art directors to follow.

ORGANIC INTEGRATION INTO EXISTING SPACE

One of the underappreciated benefits of employing LED visualization solutions to demonstrate and celebrate local culture is how seamlessly they integrate into present architecture. Available in any size, shape, or curvature, LED display solutions are custom built to fit any space, and are excellent at eliminating blind spots, as their malleability and lightweight nature allow integrators to install them just about anywhere. In contrast to traditional installations that can appear haphazardly slapped on any old wall, NanoLumens is able to create LED displays in shapes and sizes that seamlessly complement and enhance existing design. With unrivaled brightness and clarity even when competing with the sun, LED displays outpace other display technology in areas that flood with natural light, as airport concourses often do. This allows integrators and airport executives to get creative with their displays, since they know that it will thrive no matter where it's installed.
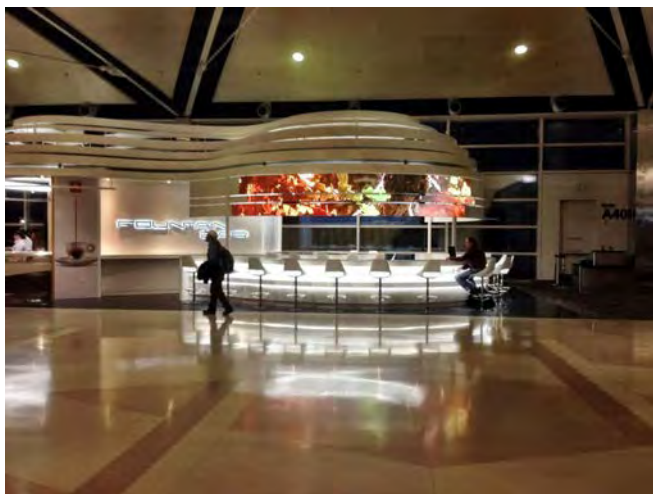
MAXIMIZING NON-AERONAUTICAL REVENUE

Beyond their practical utility in displaying flight information and their artistic beauty in highlighting a region's culture, LED visualization solutions are also tremendously effective generators of revenue through DOOH advertising.

The LED display solutions an airport installs in their space will typically be quite large, and with all this surface area to fill, there is often plenty of room not only for wayfinding or FIDS, but also for marketing content. For example, the installation in JFK International referenced earlier has one side primarily displaying FIDS to people waiting outside for arriving travelers while the other often shows advertisements to the travelers actually arriving.

Displaying several different types of content on an LED display is an excellent way to take advantage of its versatility.

By selling ad space on a display to eager retailers, an airport using their LED solution chiefly for other purposes will accomplish their primary goal while generating revenue as well.

Though much of the revenue generated by an LED installation will be from the sale of ad space, even displays that feature wayfinding data, flight information, artwork, or other creative content can boost consumer spending elsewhere in the terminal. When once passengers were stranded passing the time only in view of their gate, the proliferation of LED display tech within the airport space allows travelers to more freely move about the terminal, since everywhere they go they'll have immediate access to wayfinding directions and FIDS.

Engaging travelers in an airport is all about creating a remarkable experience and translating that experience into revenue. The versatility of LED displays makes that easier.

An oft-overlooked area of airports that has incredible signage demands is that of retail. While larger, more prominent digital displays are more useful in highly-trafficked parts of the airport, there is a market for smaller digital signage features within brick-and-mortar retail establishments. This retail application of LED displays is not limited solely to airport storefronts of course, but it is a particular area where LED exhibits its unique value. Airports, like most retail establishments, tend to be extremely well-lit, but traditional static and LCD signage struggle to compete with this flood of light. Not so with LED. Capable of shining with greater brightness than rival technologies, LED signage promises to deliver content to audiences regardless of how brightly any surrounding lights may shine.

Versatility of Utility

Airports across the globe are revitalizing their brand image with LED display solutions that inspire consumers, inform travelers, and enchant imaginations.

LED visualization solutions command an incredibly transformative breadth of utility when incorporated into airport space, and the world's most popular airports are quickly learning just how versatile this tech can be. To extract the most value possible from the shrinking amount of time passengers are spending on-site at airports, airport executives must improve the traveler experience, organically celebrate local culture and history, and maximize non-aeronautical revenue. Accomplishing each of these goals separately but simultaneously demands a highly-adaptable multi-purpose solution powerful enough to engage travelers and flexible enough to flourish in any space. Large-format LED displays are exactly that.

To learn more about the various airport display projects mentioned throughout this white paper, explore the archive of case studies on the NanoLumens website.

NanoLumens®

A FEW WORDS ABOUT

NanoLumens®

NanoLumens, headquartered in Atlanta, Georgia, creates display visualization solutions that deliver truly immersive customer experiences and great return on investment.

BRIGHT THINKING

Headquartered in Atlanta, Georgia, NanoLumens partners with clients to create uniquely compelling, interactive LED visualization solutions that take the guess work out of owning a display network. As the fastest growing visualization company in the US, our experiential LED displays exceed the imaginations of global clients in retail, transportation, corporate, gaming, higher education, sports and arenas, and houses of worship. Through world-class proprietary technology, NanoLumens displays are ultra-thin and lightweight, energy efficient and available in any size, shape or curvature. NanoLumens solutions are proudly designed and assembled in the United States of America and come backed by an industry-leading six-year warranty.