

CASE STUDY

Portland International Airport Upgrades Entire Display Network with Cutting Edge LG Solutions

Installed as Part of 'PDX Next' Renovation, Hundreds of LG LCD Flight Information Displays Enhance Traveler Experience, Reduce Operational Complexity and Strengthen Network Security





When Oregon's largest airport, Portland International Airport (PDX), needed to upgrade flight information displays in the latest phase of a \$2 billion "PDX Next" major upgrade and expansion to its main terminal, it was seeking a technology partner that could deliver on several critical requirements: enhanced traveler convenience, reduced installation and operational complexity, strengthened network security, and lower investment costs.

Initiated in 2017, the goal of PDX Next was to streamline Portland International Airport's main terminal check-in process, provide travelers with more room to roam, and make buildings more earthquake resilient. Anticipating a growth in footfall to 35 million travelers a year, PDX set out to expand the concourses, make ground transportation more convenient, and upgrade the main terminal, optimizing the space for sustainability, accessibility, and passenger wellbeing – with new technology, and particularly displays, at the heart of the upgrade.

"Providing accurate, easy to read flight information is essential for making the traveler and employee experience at PDX great," said Scott Shepler, Manager, Aviation Information Technology at PDX. "So, when we needed to replace our aging flight displays in the existing terminal and install new displays in the terminal expansion, we consulted with SITA, a global leader in air transport technology

and our current FIDS provider. They helped us to rearchitect our display solution, eliminating the need for separate players and video transceivers, and driving content over Ethernet from our servers directly to the new displays. Key to the success of this architecture change was selecting a new display capable of safely and securely presenting web-based content over the network."

"The extensive range of secure, easy-to-maintain all-in-one LCD display units from global innovator LG Electronics provided the optimal solution," he said. "Powered by the webOS SoC (system-on-chip) CMS platform and LG ConnectedCare, a robust cloud-based solution for remote monitoring and control of digital signage, these displays are helping PDX to continue to provide passengers with the most convenient, hassle-free travel experience possible."

A web-based multipurpose platform that supports a variety of solutions, webOS has high-performance SoC capabilities that enable multitasking and smooth content playback, enhancing user convenience through an intuitive user interface and simple app development tools. LG ConnectedCare is a cloud-based Software as a Service system that operates securely over the internet, eliminating the need for physical installation, making it an ideal complement to webOS.



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Technology at PDX





Easy Installation

Shepler said the webOS and ConnectedCare systems enabled PDX to efficiently manage and maintain 378 newly installed LG LCD displays – ranging from 43 inches to 98 inches – while enhancing security from external security breaches.

“We prioritize network security, and webOS and ConnectedCare secured the devices,” he added. “It allowed us to standardize the configuration, with all security settings predefined. We needed to prevent unauthorized access to the displays remotely, as well as block any potential misuse of USB ports or IR sensors within the airport. LG’s systems help reduce these risks.”

The ConnectedCare system monitors all webOS displays within the airport locally, without the need for external computers. Each display and its content can be managed remotely.

Simple and Secure

“PDX wanted something simple and secure, and that’s what we delivered with our webOS system. Every display has a system-on-chip, managed through our remote management system, ConnectedCare,” said Daniel Verbsky, Transportation Account Manager at LG Electronics USA. “It’s our own operating system, our own security.”

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“Each screen is its own computer,” he explained. “Think of it as a large cell phone, but with enhanced security. You can’t just download an app from an app store; display engine content platforms integrate via local URL or LG-partnered developer applications. This setup eliminates the need for additional licensing or capital expenditures.

“Our systems addressed the security concerns that PDX had,” Verbsky continued. “When a security breach impacted 90 percent of U.S. airports, this wasn’t an issue with our webOS because we’re independent of that system. Portland’s display system was unaffected by the breach, and they’re very pleased.”

Comprehensive Survey

Verbsky worked closely with Chris Darling, Product Manager, Information Display Systems at SITA, on the project. They commissioned a comprehensive on-site survey and developed a 30-page report, which included scaled renderings of all specified LG LCD displays throughout the facility. SITA, an LG collaborator and official signage developer, had already been discussing with PDX stakeholders the replacement of all media players and leveraging its own application platform, making it a natural progression to specify LG displays, webOS and ConnectedCare.

"The project with PDX began many years ago with the new terminal build," said Darling. "Their goal was to simplify their solution by eliminating the need for content players. They wanted displays that reduced hardware requirements and moved to a URL-based solution, allowing them to show the same content used on previous hardware."

SITA has been developing its own webOS-based display engine for many years with LG's support and has worked with PDX for over six years on demos and solutions, ensuring that everything functioned "as it should," according to Darling. But he said it wasn't just LG's technology and solutions, nor their collaborative relationship with the manufacturer that convinced him LG was ideal for this installation—it was also the after-sales support.

"One of the things we really value in our vendors is their support after sales, and LG has always been very strong in this area," he explained. "From what I've heard from the teams involved, it's been a smooth experience."

Engine Platform

SITA developed the display engine platform and set it up for PDX, while airport stakeholders managed the installation and configuration of all 378 LG LCD displays. SITA's platform enhanced the benefits of the webOS system, preserving the security features inherent in webOS and ConnectedCare.

"The webOS network is virtually impregnable from outside threats, with a built-in security mechanism that blocks anything trying to access PDX's

displays," explained John Rutirasiri, Senior Technical Product Manager at LG Electronics USA. LG webOS has a built-in security system that blocks external intrusions, preventing unintended content from appearing on screens, and is specifically designed to connect to a single server. It operates via URL but is completely on-site and non-internet based.

"Each screen functions as its own web page with a unique security URL, which bad actors can't alter to redirect to other sites like YouTube. The URL is sent over the network to the display, and any changes require a screen reboot, alerting the backend. The operating system is fully optimized for the system-on-chip embedded in each display and is signed to that specific SoC."

Support Network

Everyone involved seemed impressed with LG's support network, and PDX's Shepler was particularly appreciative when the ConnectedCare developers addressed early issues.

"We encountered a few things that didn't work initially as expected with our custom CMS," he said. "Luckily, we were able to meet in person with some of the ConnectedCare developers from LG, allowing us to share our needs directly. Their development team responded quickly to our feedback and resolved our issues."

"That level of responsiveness was greatly appreciated. When we find partners and vendors who listen and respond, it makes a big difference, and it was wonderful to experience that with ConnectedCare."

For more information on ConnectedCare, click [here](#). For further information on webOS, click [here](#).