

Case Study

Connected Clubs



Summary

Our client, a major global airline serving more than 140 million travelers annually, challenged Luxoft to help them better understand operations, reduce costs and grow revenue from its airport club lounges.

In six short weeks, Luxoft's development team completed a solution that accurately followed the entries and exits of passengers that go in and out of the customer's airport lounge at Chicago O'Hare – one of the busiest airports as well as one of the customer's busiest lounges in North America. Through a combination of sensors, data, analytics and visualization tools, our solution accurately monitors the entry and exit of passengers as they move in and out of our client's airport lounge. Our client can then log into a web-based dashboard and get direct real-time insight into the current occupancy and expected traffic for each of its airport lounges worldwide.

This solution gives the airline immediate insight into customer footfall, lounge usage, and how to streamline daily operations. The client also received a platform needed to deliver new revenue-generating services from its airport lounges worldwide.

Business Challenge

A global airline that has more than 140 million passengers a year challenged Luxoft to help them optimize usage and operations across more than 50 airport lounges in 31 airports worldwide. Typically, passengers arrive at the lounge, check in with the concierge by scanning their boarding pass, and are granted access based on eligibility or through the purchase of a day pass. Once in the lounge, customers connect to wifi, eat a meal, grab a drink, read a newspaper, and then leave when it's time for their next flight. Depending on how busy the lounge is on any given day or at any given time, the visitor's experience may vary – certain foods might be out of stock or all the newspapers might already be taken, etc., which negatively impacts the customer's experience.

In response, our customer needed a technology solution to improve the experience of lounge visitors, streamline operations and ultimately drive incremental revenue streams through services benefitting members and non-members alike.

In order to develop a solution, Luxoft first had to help the airline understand how many people were in their airport lounges at any one time without the operational cost or customer inconvenience associated with a manual check-in/check-out process. They also needed to understand the variability in occupancy on different days of the week and times of day for the purposes of better anticipating lounge traffic. This helps avoid overcrowding and more efficiently manage lounge amenities including food and beverage inventories.

Luxoft Delivered Solution

On a mission to improve the lounge experience for their passengers, the airline engaged Luxoft to envision a connected, technology-driven smart space through a series of focused concepts and prototypes. While the end objective was to positively augment the customer lounge experience, our technology roadmap began with a core enabling capability commonly seen across smart spaces: occupancy monitoring. While the airline had data for when individual passengers entered the lounge, they were unable to track when customers departed. This prevented the airline from gathering valuable insights into lounge utilization rate over time that would unlock a series of downstream capabilities.

With direction to move fast and deploy a working prototype at one of the busiest lounges at Chicago O'Hare prior to the holiday season, Luxoft made a series of technology selections appropriate for the conditions. The system would leverage off-the-shelf technologies to limit both cost and development timeline, while aiming for a level of accuracy that would successfully demonstrate the value in collecting lounge occupancy counts.

Given that the airline had an ongoing partnership with Microsoft, Luxoft was encouraged to use as much Microsoft technology as possible. Later iterations of the technology would focus on accuracy and technology optimization.

For the initial prototype, the team selected a Microsoft Kinect, a Surface Pro 4 with built in LTE, Microsoft's Azure IoT suite for streaming data ingestion, and a custom data visualization dashboard built as a responsive web app for mobile and fixed kiosk viewing. On the backend, Luxoft leveraged the Kinect SDK to write a custom algorithm for motion-based feature detection. The Kinect hard-lined to a wall mounted Surface Pro for processing, real-time occupancy count visualization, and data upload via LTE to the client's Azure cloud instance. Within Azure, the architecture leveraged IoT Hub and DocumentDB, with APIs exposing the data for downstream consumption. Through these APIs, historical data was integrated into a manager dashboard for status visualization and trend analysis.

Although the individual identity of those visiting the lounges is anonymized, this solution still gathers a range of insights from how long passengers spend in the lounge, what times of day are most popular, and anticipates low-demand days/times. In turn, this allows our client to better manage lounge utilization and maintain high-quality customer experiences globally. For example, in airports with multiple lounges, the airline can better understand utilization of each individual lounge at any given time.

Benefits

In just six weeks, Luxoft launched a working prototype at the Chicago's O'Hare International Airport, which was able to detect the entry and exit of over 9,500 customers with more than 90% tracking accuracy.

This set the stage for future development and scalability across a network of international lounge locations, and established the foundational platform for the "smart space"-enabled airline lounge. With real-time utilization rates at the discrete lounge level, the airline unlocked several new capabilities:

- Given capacity limitations, the airline now quantifiably knows when to anticipate and address overcrowding issues. With future improvements, the solution aims to preemptively reduce overcrowding through Machine Learning and trend analysis. For example, in airports with multiple lounges, the airline can load balance to lounges with lighter utilization at a given time.
- Can better manage supply chain and logistics for food, beverages and other lounge amenities, reducing waste and overhead cost from having to carry more inventory than necessary at any given time
- Lastly, the platform provides the airline with the opportunity to explore demand-based pricing for passengers at times of low occupancy.

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Solution Overview

Industry:
• Travel

Customer Size:
87,000

Partner Technologies:

- Microsoft Xbox Kinect
- Microsoft Azure IoT Suite
- Microsoft Power BI
- Microsoft Surface Pro 4 with LTE

Luxoft Services:

- Data Capture
- Modern Data
- Platforms
- Cloud Assessment
- Real-time Insight
- Visualization and Analytics
- Operational Intelligence



In conclusion, this concept can be applied to lots of other industry markets. Any location with physical footfall can benefit, by accurately tracking and analyzing variables like staffing, revenue, operational performance, and overall efficiency. This approach enables deeper customer engagement through the gathering of richer data and more specific monitoring processes.