



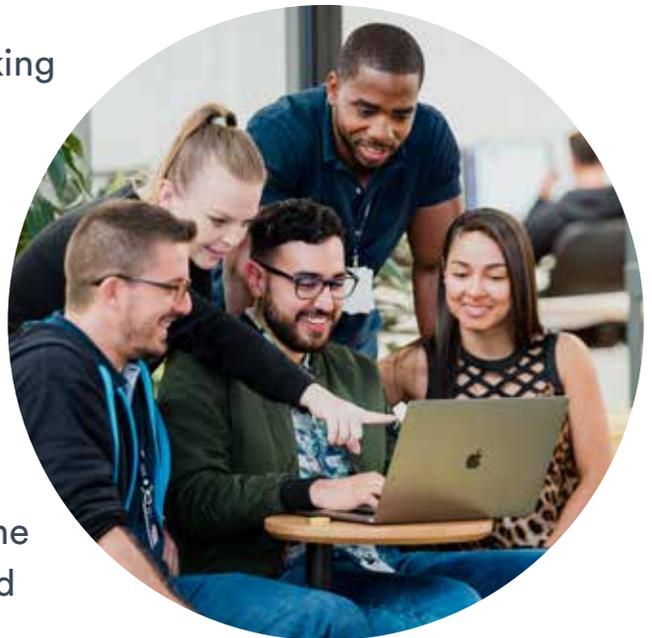
**Multi-channel
Chatbot Automates
Interactions with Up
to 3,000 Users
a Month**

Results

- Multi-channel chatbot accessible through Facebook and WhatsApp resolves **42 requests** per hour
- Supports **14 complex dialogs**
- Employs **custom entities detection** algorithm
- **Spanish** chat interface with option to expand into **English, Portuguese**, and more.
- Serves an average of **3,000 users** a month
- Overall **adoption of DevOps** processes and mentality

Executive Summary

Our client, a leading international airline, was looking for a high-tech solution to their customer service needs to ensure a frictionless and positive experience for their thousands of customers a day. Through a partnership with PSL, a leading nearshore software development outsourcing company, they were able to leverage advanced engineering concepts and technologies to create a multi-channel chatbot, transforming the way users connect with the company, and improving the customer experience by eliminating wait times and reaching a wider audience.



Tech Stack

BotBuilder



Dialogflow

Table Storage

Background

The client transports users to 78 destinations in 32 countries across North, Central, and South America, and the Caribbean. With a fleet of more than 100 aircrafts and codeshares with more than 15 other companies, the company helps passengers reach their destinations all over the world in comfort with guaranteed efficiency and quality.

The sheer volume of passengers going from one destination to the next combined with layover, baggage, and special considerations information can make providing high-quality customer service a challenge. While traditionally airlines have employed call centers to serve these needs, our client was looking for an alternative to optimize the process and improve the quality of their customers' experience in tandem.

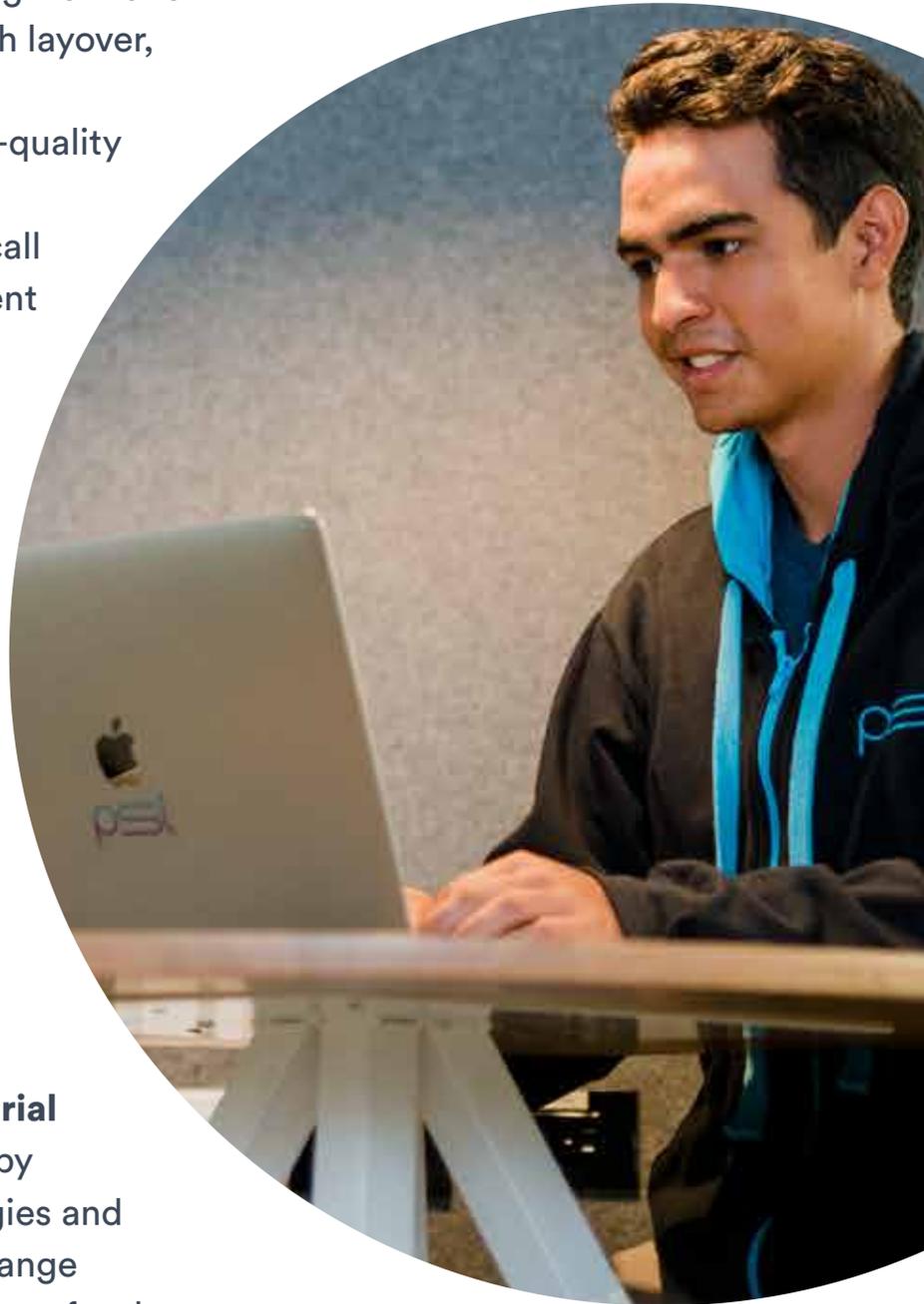
Challenge

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Solution

When working with a client that's shifting development processes in order to accommodate a new technology, **it's essential to manage changes on a technical and managerial level.** PSL defined the project scope by selecting the most relevant technologies and engaging DevOps experts to drive change management and process improvements for the client.



Solution

The PSL team configured the integration and deployment servers and worked on automating the builds and releases to ensure continuous integration and deployment was achieved, all the while guiding the client team in the adoption of DevOps principles and processes.

Because of the project's structure, the team built an ecosystem of microservices in NodeJS that fully interact with one another. This ensures that one piece of the ecosystem can be updated or changed without affecting the other parts and is less likely to experience cascading failures. Additionally, chatbot requirements are completed in conversation and interactions, not functionalities in front-end or back-end configurations. This makes a microservices architecture essential for adding features quickly and efficiently in the future.

Designed to service airline requirements, it was imperative that the chatbot confirm flight origins and destinations accurately. However, the client had custom rules in place that made it impossible to use Natural Language Processing (NLP). So, when

the flight origin/destination text functionality presented a problem, PSL constructed a proprietary entities detection algorithm to determine the origin and destinations of flights, despite the NLP restriction established by the client.

Likewise, the volume of information intake that the bot needed to handle required a database with considerable reading and writing speed. To solve the need for the application to be able to "talk" to thousands of users at the same time, they implemented Table Storage. The technology allowed the bot to run multiple instances and share the same data quickly.

The client received a highly effective and scalable chatbot that successfully serves an average of 3,000 users throughout Latin America every month. It's equipped to respond to inquiries involving ticket fares, baggage allowances, flight information and confirmation, and more. The chatbot has provided guidance to almost 12,000 unique users in its first six months and is poised to solve even more customer service requests in the future.