

Aeroflot deploys speech-enabled call routing.

Automates customer inquiry handling through speech recognition.

Challenge

- Cut call center costs and automate calls
- Use and extend innovative services to passengers to support image as technology leader
- Long hold times

Solution

- Nuance Call Steering, an automatic call management system with unique natural speech recognition abilities

Results

- Cut annual call center costs by RUR 31 million
- Fully automated over 60% of flight-related information requests
- Outbound voice notifications about flight changes are 99.8% automated

About the company

Aeroflot is an undisputed leader of Russian civil aviation. Established on March 17, 1923, Aeroflot is one of the oldest airlines in the world and one of the best recognized Russian brands. In 1989, Aeroflot became the first Russian airline to become a member of the International Air Transport Association (IATA).



“At Aeroflot we have an established culture and definite standards for customer communications. The solution implemented was easily fine-tuned the way we needed to meet these requirements, without much effort.”

“We aim to create natural dialogs with customers, but not just implement voice commands like ‘Press an asterisk’ or ‘Say Pound’. When projects like this are implemented, it’s very important not to allow a business logic to deform a natural dialog with a user.”

Dmitry Lapin, IT Deputy Director
Aeroflot

As of winter 2014-2013, Aeroflot offers flights to 121 cities in 52 countries, including 41 airports in Russia. During the first nine months of 2014, Aeroflot carried 17.83 million passengers, growing this number by 13.4% during 2013 in the same time period. In 2014, the total number of Aeroflot Group passengers reached over 26 million. The seat occupancy rate grew to 77.5% (up 0.4 percentage points). The airline operates the largest Flight Management Center in Eastern Europe, and the Aeroflot fleet, 123 airliners, is one of the most modern, young and quickly growing in Europe.

In 2006, Aeroflot became a full member of SkyTeam, the second largest airline alliance in the world. Through its wide network, SkyTeam members service flights to over 900 cities in 173 countries.

Aeroflot’s strategy is to become one of the 20 largest global airlines by 2025 in terms of revenue and passenger volume. During a single year, Aeroflot aims to transport up to 70 million passengers.

Project goals

Aeroflot is aggressively developing online services such as booking, ticket sales and check in, access to mobile networks and onboard internet access. The launch of a highly capable natural speech recognition self-service system became a new step for the company.

The old call center approach

Before the launch of Nuance Call Steering, Aeroflot’s contact center was comprised of three locations divided between two independently outsourced call center operators. An interactive voice response (IVR) system with tone mode dialing served as an entry point for incoming calls.

Problems:

- Lack of inbound lines
- Long hold times
- Poor manageability (difficulties with introducing quick changes into call processing scenarios)
- High costs
- Lack of a joint quality control for incoming calls

Goals:

- Decrease operator work load and substantially increase number of customer inquiries self-served through automation
- Lower call center costs
- Support Aeroflot’s innovative company image

The contact center automation proposal included the following functionality:

- Inbound call management (routed to operator groups or to automatic information services)
- Pre-booking (providing automated ticket cost and seat availability information)
- Personalized outgoing voice notifications about Moscow outbound flights schedule changes (terminal change, flight delays and cancellations, etc.)
- Outgoing information about company-run specials, particularly changes in Aeroflot Bonus loyalty program in April of 2011

The difficulty with the project was the need to integrate Nuance’s Call Steering solution with the Sabre global reservation system and other internal data sources within Aeroflot. Another challenge was the need to create a monitoring system showing the main performance parameters in real time.

At the same time, the Sabre reservation system was moved to a web-service architecture that was not well documented at a time of the project design.

Also, there was a need to CTI integrate the Call Steering into the outsourced contact center software.

Vendor selection

To solve these challenges, Aeroflot announced a tender for the best automated inbound call processing solution, designed to simplify the call routing and automate frequently requested passenger information. The solution should take into consideration the possibility of adding flexible new interactive voice applications. Tender requirements were designed jointly by the IT and commercial departments.

As a result of the tender, Aeroflot chose a proposal presented by Voxcom to use Nuance’s Call Steering solution.

Alternatives offered to the airline included touch-tone menu selections to route the calls to operators. Experience shows that with solutions like this, however, it is difficult to organize effectively automated customer inquiries, as people are used to voice communications. In addition, the touch-tone dialing often leads to routing mistakes, increasing the inquiry processing time and lowering the customer satisfaction.

As a result, a system combining the best sides of voice communication, both a classical operator contact center and automated voice processing, was chosen.

Nuance call steering

Often, when calling a contact center, a customer has to go through a maze of unfamiliar menus. A large percentage of the callers refuse to follow the IVR menu logic and try to get connected to the first available representative as soon as they get a chance. In a meantime, the self-service applications a company invested in stay underused, because the customers can’t find them and use them.

Nuance Call Steering allows a customer to quickly connect with exactly the right operators and services they need. It allows using natural speech recognition based on statistical models in order to process the incoming inquiries. As a result, caller sare delivered to a correct destination in fewer steps than other automated call processing technologies.

Some speech recognition systems have limits as they are capable of recognizing only a specific set of answers (phrases). They cannot adapt, learn and predict what a caller will be saying. Nuance Call Steering uses the latest developments in voice recognition algorithms such as Nuance Recognizer, the most successful voice recognition software in the world, supporting the statistical semantics for language models. These technologies help to create extremely effective voice self service applications, leading not only to a significant improvement in the quality of customer service, but also to lower operational costs.

The solution includes well developed monitoring and analysis tools. Using inquiry processing analysis, service quality monitoring with recognition precision, and indications of routing problems, it is possible to quickly diagnose and resolve recognition and routing issues. This ensures that the solution always provides the shortest route to servicing the customer’s request.

Use of effective natural speech recognition to manage the incoming inquiries reduces costs, thanks to the automated inquiry processing and reduction in the incorrect routing rates. The service simplification in turn leads to a higher consumer loyalty.

Solution advantages

- Lower operational costs: decreased call routing times, reduction in the wrong routing rates, and lower number of contact center operators.
- High Rate of Inquiry Recognition: Nuance Call Steering allows customers to describe a reason for a call in their own words and define the shortest inquiry routing thanks to pre-programmed statistical models based on the history of earlier calls.
- General Higher Customer Satisfaction Levels: providing ability to communicate with a system in a natural way

impresses customers while helping them quickly and easily find and use the correct applications.

- Integration Speed: Nuance offers ways to quickly integrate Call Steering into existing self-service infrastructure, providing of a fully functioning system within three months after launch.
- Reputable Technologies: Nuance Call Steering is based on the market-leading voice recognition technology from Nuance. The system is licensed to be used jointly with such leading IVR platforms as Avaya, Cisco and Genesys.
- Rich Experience and Highly Professional Nuance Employees: Nuance provides its solutions, supporting over 85 languages and dialects, to over 500 customers worldwide. Thanks to that, Nuance has obtained more experience in speech recognition and development than any other company in the world.

Project implementation

Stages of Nuance Call Steering implementation for Aeroflot:

- Finalization of business and functional requirements
- System design (“Persona” voice interface, data source definitions)
- Voice applications development (including integration with external databases)
- Usability testing and application fine-tuning

The implementation, testing and fine tuning of the Aeroflot system took about 6 months. During the trial period, the company gradually trained their customers to work with the new self service system. At first, only 5% of all calls were transferred to the new speech platform. By the end of the trial period, 100% of calls were directed to the Moscow customer service number (+7-495-223-5555).

A significant number of callers did not understand they were talking to a voice answering system at first. The developers added a way to quickly transfer from the interactive voice menu to a contact center operator: at any point, a customer could just say “operator.” In addition, the system automatically transferred the call to an operator if three or more mistakes occurred during the interaction.

Professional actors who were hired to record the voice interface responses became a virtual face of the company. The self-service system has to correspond to the existing standards and culture of the company’s telephone communications with the customers. The preferred gender, age and diction of an operator were factors in selecting the voice of the system.

It was decided not to use voice synthesis to make callers feel most comfortable with the system. Synthesized speech is only used to pronounce the names of rarely used destination points where the airline does not fly.

In the process of creating the voice user interface, particular attention was paid to the grammar recognition and allowing correct identification of spontaneous customer inquiries, e.g. Petersburg, St. Pete or Pulkovo (St. Petersburg airport). In the final stage, testing and fine tuning, the goal was to find and correct any problems, such as grammar recognition or needs to increase vocabulary. During the testing process, an acoustic model training with consideration of phone line characteristics took place. Besides that, voice interface adaptation based on customer perception statistics was carried out. In the process, it became clear that sometimes a simple change of word order creates a significant difference in correctly perceiving the meaning. Also, any message intonation deficiencies were addressed.

Results

As a result of the project, the contact center costs for Aeroflot went down by over RUR 31 million in one year.

- In a year since the Call Steering self service system launch, 2.1 million calls were processed.
- At peak periods, the system received up to 150,000 calls per day.
- By analyzing customer inquiries, the system is capable of routing phone calls in over 30 various directions.
- Currently, instead of three separate contact center locations, only one is used (80 operator stations). An average daily load on the Aeroflot contact center rose 50% in the last year.
- The number of calls to the contact center is constantly growing, therefore the number of operators is growing. However, should the system not have been installed, the number of operators would have grown much larger and much faster.

Data on quality of customer voice recognition inquiries:

- During the trial period (before fine-tuning), about 86% of the inquiries were correctly processed.
- After the fine-tuning, the percentage of the correct processing went as high as 96,5% in some cases (General Information, New Booking, Aeroflot Bonus loyalty program). The quality of some dialogs improved by 70%.

Statistics on pre-booking application (seat availability, telephone booking):

- In 44% of cases, the information was provided and the customers switched over to an operator for booking.
- In 17% of cases, the callers received the information requested.
- 20% of calls were serviced only partially and switched to an operator.

The schedule change passenger notification system is 99.8% automated.

Thanks to the automatic passenger notification system, almost 273,000 of subscribers of Aeroflot Bonus loyalty program were notified about program changes within a week. A contact center operator would need substantially more time to do it manually.

Future plans

Currently, Nuance Call Steering used by Aeroflot supports only the Russian language, but future plans call for a support of 6 languages.

Also in the plans:

- Increase in the automated customer inquiry response average: today, 60% of the answers on flight and seat availability are delivered in a fully automatic mode. The goal is to raise this number to 80%.
- Utilization of additional self-service system functionality as envisioned by the Aeroflot commercial departments.

About Nuance Communications, Inc.

Nuance Communications is reinventing the relationship between people and technology. Through its voice and language offerings, the company is creating a more human conversation with the many systems, devices, electronics, apps and services around us. Every day, millions of people and thousands of businesses experience Nuance through intelligent systems that can listen, understand, learn and adapt to your life and your work. For more information, please visit nuance.com.
