

INNOVATION AND INFORMATION TECHNOLOGY

INNOVATION PROGRAMME

As an industry leader, Aeroflot Group adheres to the concept of innovative development to sharpen its competitive edge on the global air transportation market.

The main document defining the focus areas of the Company's innovative development is PJSC Aeroflot's Innovative Development Programme (the "Programme") approved by PJSC Aeroflot's Board of Directors on 24 June 2011 and by the Task Force on Private Public Partnership in Innovation under the Government Commission on High Technologies and Innovation on 28 June 2011.

The guidelines for innovative development of subsidiary airlines – Rossiya, Orenair, Donavia, and Aurora – are set out in relevant programmes approved by the companies' boards of directors in 2015.

PJSC Aeroflot's Innovative Development Programme includes the principal focus areas of the Company's innovative development, major innovative projects, and R&D initiatives. The Programme also comprises medium- and long-term target KPIs up to 2020, including:

- cost reduction;
- energy and resource efficiency;
- service quality improvement;
- increased labour productivity;
- improved environmental friendliness;
- enhanced flight safety and aviation security;
- better flight punctuality and reliability.

The Programme's action plan to streamline innovative efforts includes initiatives to develop an innovation management system and measures to create an innovative ecosystem (by coordinating efforts with small and medium sized businesses, universities, and research organisations, and within technology platform partnerships), develop IT technologies, improve and redesign business processes. The Company has in place a set of measures ensuring the Programme implementation, including the medium-term Programme implementation plan and a roadmap, and providing for continuous monitoring of implementation progress.

Key innovation focus areas:

- fleet upgrade;
- route network expansion;
- introduction of integrated systems for core operations (ground handling, maintenance and repair, aviation security, etc.);
- improved customer experience;
- integrated IT projects, including unification and merger of IT systems across the Group companies, introduction of uniform operations related IT solutions, automation of fleet and route network management, development of a single booking system for all flights operated by the Group airlines, development of a single system for aviation fuel procurement, introduction of effective IT solutions to support passenger services, etc.

In the reporting year, innovative projects were primarily focused on information technology, flight safety, and customer experience.

Projects were implemented in association with universities and research organisations. In the medium term, the Company intends to expand its partner network of universities and research organisations in the regions where it operates to undertake joint R&D efforts, coordinate recruitment, training and professional development of employees, technology forecasting, and sharing R&D information.

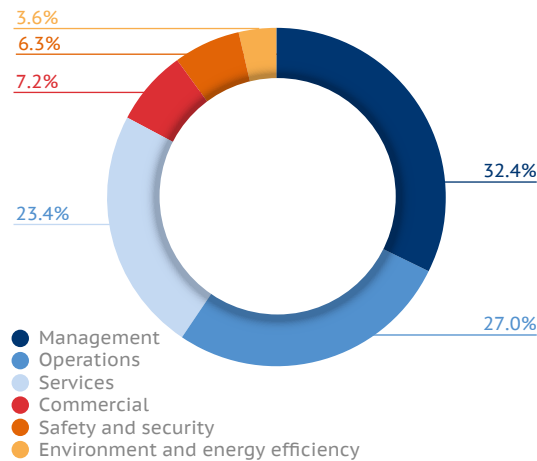
In the reporting year, a number of joint projects were implemented with other organisations, including small and medium sized businesses (SMEs), such as:

- development of approaches to analysing the functional safety of aviation IT infrastructure facilities;
- development and implementation of Aeroflot Payment Index;
- development of an international systems index, including AFOP for local markets and others.

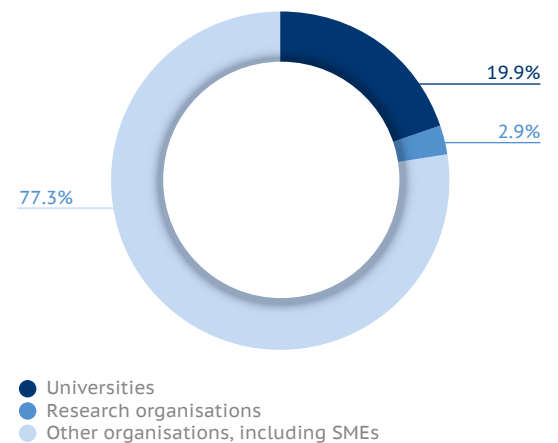
In 2015, the Company continued to collaborate with Innovation and R&D Directors Club and Technology Platform Aviation Mobility and Aviation Technologies. Involvement with these non profit organisations:

- helps initiate projects closely related to the Company's core operations;
- enables the Company to secure funding, including government budget funds, to address challenges facing both the industry and PJSC Aeroflot;
- supports decision making by state authorities based on the results of preliminary monitoring on communication platforms;
- promotes the Company's innovative development.

PJSC Aeroflot's innovative development costs by segment, 2015



PJSC Aeroflot's R&D costs by researcher, 2015



KEY INNOVATIVE PROJECTS IN 2015:

- Building interactive interfaces between the “base” and remote access points (R&D project).

Research, development and implementation of an additional software module for the state of the art computer based system for professional training of PJSC Aeroflot’s air crew.

- Concept development and implementation of a system to organise and run an ongoing crowdsourcing based external competitive research involving Aeroflot passengers in resolving tasks related to improving the Company’s processes.

Real time visual representation of the results of implemented projects, demonstration of an outspoken approach to partners and focus on customers, receipt of proposals, their analysis and implementation. Improving the customer satisfaction index.

- Knowledge Base IT system.

Enhancing customer experience, reducing the time of response to passengers’ requests, improving staff skills, providing a tool for employee training.

- Automated update of customer data in PJSC Aeroflot’s IT systems.

The system represents an integration gateway which automates 17 out of 20 manual operations and combines several software products required to register a customer in the Corporate Loyalty Programme. The system also automatically checks applications submitted by users and fills in request forms for other departments, thus considerably simplifying and speeding up the process of customer registration in the Corporate Loyalty Programme.

- Development and deployment of a sales management system for agent and corporate sales.

Automation of the interaction with agents and corporate customers, including maintaining the customer’s profile covering a wide range of parameters, distribution of counterparties among managers, and automation of communications with counterparties.

The system will enable prompt replacement of a sales manager without compromising the business, speed up customer acquisition via professional mass mailing targeting different consumer segments, improve sales efficiency by streamlining the corporate customer and agent database management.

- Development and deployment of a caching system to capture data on seat availability and ticket prices to handle search queries from online travel agencies’ websites and Aeroflot’s website. Development of procedures for uploading and updating data on seat availability in booking classes and ticket prices for flights operated by Aeroflot Group airlines without accessing the booking system (host).

The caching system is designed to act as a buffer between metasearch engines and the Sabre booking system. Connecting metasearch engines and online agents to the cache will create a network of online airline capacity distribution without increasing traffic to the airlines’ booking system. In this case, information is not provided by the airlines’ booking system but by the caching system. Direct access to the booking system minimises the expenses on paid traffic to Sabre web services.

- Development and launch of extra services sales via the mobile website / mobile apps.

Enables sales of extra services via Aeroflot airline's mobile website / mobile apps (Aeroexpress, rent a car, hotel booking, and insurance).

- Development of a computer based simulator for practicing oral communication between air crew when completing checklists on A320s based on semantic speech analysis.

Transfer pilots' checklist training programme (for Airbus A320) to new speech technologies based on semantic recognition of the pilots' utterances when modelling real time cockpit communication. Semantic analysis of the pilots' speech will make the training process more self sustaining and effective.

- Development and implementation of the mobile application for flight attendants.

A mobile application enabling electronic entry of information related to the flight plan, passenger feedback and questionnaires, accounting for and distributing spirits on-board and accounting for extra in flight services.

- Analysing potential for using GLONASS in civil aviation operations in remote and underdeveloped areas.

The analysis will reduce the risks related to unreasonable requirements to the accuracy and reliability of air navigation support to civil aircraft provided by the GLONASS system in remote and underdeveloped areas and identify areas for improvement.

INFORMATION TECHNOLOGY DEVELOPMENT

Major IT projects implemented in 2015:

- launch of Sabre Intelligence Exchange platform (functionality includes passenger notification of the start of self service check-in, a possibility to upgrade the travel class, the requirement to enter visa details);
- SAP ERP transition to the new SAP HANA platform;
- launch of the Corporate Loyalty Programme;
- implementation of the first stage of the E-Commerce Platform (functionality includes hotel booking, purchasing insurance policies and Aeroexpress tickets);
- implementation of the extra sales system that issues EMDs;
- implementation of the Sabre Flight Plan Manager system as part of the Sabre AirCentre Operations Automation Programme;
- introduction of the Online Gift Voucher and Price Guarantee services on the Company's website;
- commercial launch of the sales management system for agent and corporate sales;
- installation and activation of the Internet on-board (in-flight Wi-Fi) service on three Boeing 777s and two Airbus A330s.

AVIATION SECURITY DEVELOPMENT

The Company lays special emphasis on aviation security development, including our canine service. In 2015, we continued our research initiatives in improving aviation security with involvement of sniffer dogs. In the reporting period, Aeroflot completed the first phase of its R&D project “Development of an analysis software to automate objectivisation of dog inspection results through measurement and integrated analysis of a sniffer dog’s

physiological responses” launched in 2014. The results achieved enable all involved units of management and supervisory bodies obtain real time data on the canine team progress set out in a formalised report.

In 2015, Federal Institute of Industrial Property (FIPS) registered the Olfactory Monitoring trademark outlining PJSC Aeroflot a trademark holder.