FUJITSU

JAPAN AIRLINES

Smarter Cabin Crew Operations with Specialized AI

Japan Airlines (JAL), guided by its slogan "Fly into tomorrow" continues to pursue innovation and growth. As part of its Digital Transformation (DX) strategy, JAL is actively leveraging AI to improve operational efficiency and elevate customer experience. In collaboration with Fujitsu and Headwaters Co., ltd., JAL has developed a domain-specific generative AI application powered by a Small Language Model (SLM) optimized for offline use. This AI supports cabin crew in streamlining in-flight reporting tasks, significantly reducing the time required to create handover reports. The solution is now being expanded for broader use across all cabin crew operations.

Challenges

- Unstable connectivity during flights and industry-specific terminology made AI adoption difficult onboard.
- Cabin crew had limited time to complete handover reports, often resulting in overtime and rework.

Solutions

- JAL utilizes a Small Language Model (SLM) that operates offline, enabling AI-powered support during flights.
- The team developed a specialized aviation AI for accurate bilingual report generation.

Outcomes

- Achieved up to a 30% reduction in report creation time, allowing cabin crew to dedicate more time to passenger service.
- Standardized JAL-specific report formats reduced revision frequency and overall reporting workload.

"We are using AI and data to create a work environment where every single employee can be highly productive, leading to greater engagement and new value creation."

Manabu Yamawaki, Manager of security planning, System Management Department, JAL

Barriers to Cabin Crew Efficiency

Generative AI is reshaping industries worldwide, and JAL is taking proactive steps to integrate it into its aviation operations. In Japan, only 42.7% of companies have defined AI usage policies, compared to over 80% in the U.S., Germany and China[1]. While global companies are applying AI across customer service and engagement areas, Japanese firms tend to start with back-office functions. Faced with societal challenges such as labor shortages and persistent inflation, JAL as a global company, is proactively leveraging AI as part of its digital transformation strategy to address key business issues—including improving productivity across existing operations.

JAL carefully assessed the multifaceted business impact of generative AI, began by addressing concerns around security and accuracy, and officially started using it in business operations in August 2023.

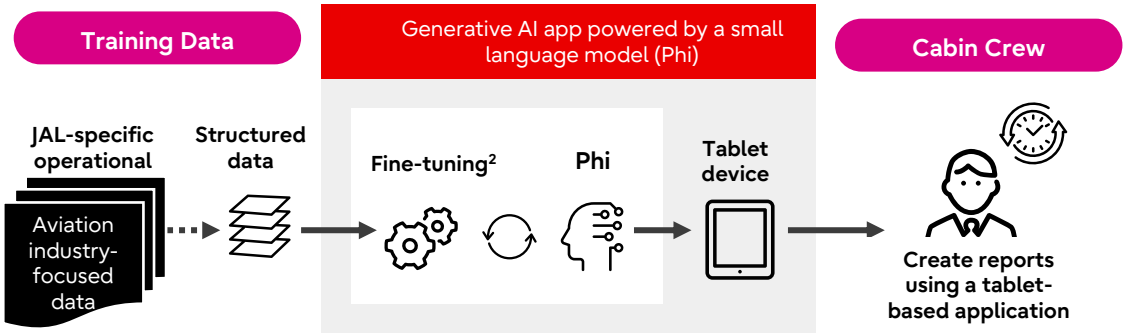
Speaking on the value of AI adoption, Manabu Yamawaki, manager of security planning in the System Management Department at JAL, explains: "We are using AI and data to create a work environment where every single employee can be highly productive, leading to greater engagement and new value creation." JAL identified in-flight cabin crew operations as a key area for improving efficiency with generative AI. However, unstable in-flight connectivity and aviation-specific terminology made AI adoption challenging. The handover report process stood out as a major bottleneck. Traditionally, cabin crew used tablets to collaborate with ground staff and create handover reports during flights. However, frequent service interruptions led to incomplete reports and constant rework. With approximately 30,000 flights per month and around 1,000 reports generated monthly, the handover reporting process had become a clear operational priority.

Seamless Collaboration Powers Specialized AI with Latest SLM

To address the unique challenges of in-flight operations, JAL partnered with Fujitsu, which proposed using Microsoft's Phi-4 SLM for offline AI functionality. The model was trained on JAL's internal data to accurately generate aviation-specific reports. The collaboration between Fujitsu, Headwaters and Microsoft enabled fast development—just 2–3 weeks from concept development to use case definition. Although Fujitsu is traditionally known for its expertise in developing solutions based on Large Language Models (LLMs), its proposal to adopt a Small Language Model (SLM) for cabin crew operations was implemented in a remarkably short time.

"It took just two to three weeks from the moment we raised the idea of using AI for cabin crew to the point where we began exploring specific use cases," recalls Manabu Yamawaki.

This speed was made possible by the strong collaboration already in place between Fujitsu, Headwaters and Microsoft. Fujitsu brought deep knowledge of domain-specific model development using LLMs, while Microsoft and Headwaters contributed technical expertise in SLMs—making it possible to jointly develop an optimized generative AI model tailored to aviation operations.



※1 Source: Ministry of Internal Affairs and Communications, "Survey on Generative AI for Enterprises" and "Economic Impact of Generative AI", "Information and Communications White Paper" (2024 Edition)
※2 Fine-tuning: A technique that enhances the quality, accuracy, and performance of a pre-trained model by further training it with proprietary data.

30%

Time reduction rate for handover report creation

Identifying Use Cases and Defining the Focus Area

To select the right theme for the proof-of-concept, JAL began by analyzing operational challenges in collaboration with the Cabin Crew Division. Takako Ukai, Manager of the Digital Employee Experience team, led the effort, bringing both cabin crew experience and system expertise. Out of many potential use cases, the team chose to focus on "AI-assisted handover report creation during flights." Ukai explains, "If a system is developed without a clear understanding of field operations, it may result in significant gaps between design and reality. We worked closely with former cabin crew members at Headwaters and Fujitsu to define highly practical use cases." The System Management Department also noted that, at the time, there was a general understanding that once a model was fine-tuned, updating its information would not be easy. "Given that the information in our use case doesn't change frequently, we believed that training the model to understand aviation-specific terminology would allow us to maximize the technology's potential," recalls Manabu Yamawaki.

With this in mind, JAL launched a proof-of-concept to apply AI to the handover reports that cabin crew submit to ground staff—an essential process for ensuring safe and smooth flight operations.

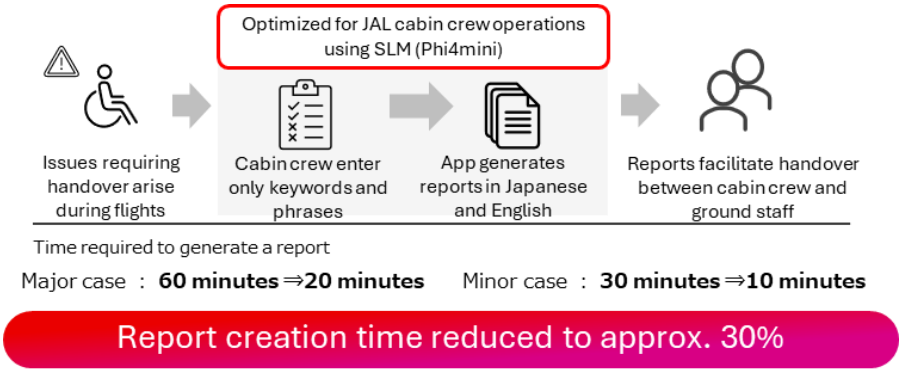
AI Cuts Report Time and Unifies Format

Between late January and early March 2025, Fujitsu and Headwaters built the environment for a proof-of-concept, followed by a full-day trial involving four senior cabin crew members.

The AI-generated reports reflected natural language expressions incorporating JAL-specific terminology. Notably, while international flight reports were traditionally written in English, the new system allowed crew to draft them in Japanese and automatically generate accurate English translations—significantly reducing workload.

Previously, inconsistent reporting due to individual writing styles often led to missing information. The new app addressed this by introducing a user interface that lets crew input keywords and select from suggested phrases, improving consistency and ease of use.

By training the AI to understand JAL-specific terminology and optimizing its performance on tablet devices, the time required to create a single report—previously 30 to 60 minutes—was reduced by up to one-third. "Beyond time savings, we expect that standardizing the report format to JAL specifications will help prevent missing information and reduce the overall workload, including administrative oversight," says Takako Ukai.



Industry:
Aviation
Location:
Global
Website:
jal.com/en/

Employees:
14,431 (Consolidated: 38,433 as of March 2025)

About the customer

The JAL Group provides safety and peace of mind as essential elements of social infrastructure, while positioning sustainability as a key driver of future growth. By adapting to environmental changes, the Group pursues ongoing development. In a vibrant society where people and goods move freely, the aim is to become the most chosen and beloved airline group globally.

Broadening AI Use with Agent Potential

Building on the success of the initial proof-of-concept, JAL has entered Phase 2, aiming to make the solution available to all cabin crew. While the prototype focused on a single report category to accelerate testing, the updated app now supports multiple categories and is undergoing trial deployment through September. The system environment is also evolving. While the initial phase was developed for offline use, the second phase—targeting all cabin crew—leverages existing cloud-based tablets to enable more practical, in-flight Wi-Fi–connected online usage. Looking ahead, JAL sees potential in applying AI to broader operational challenges. "We expect Fujitsu to continue supporting us with reliable technologies, including advanced image recognition," says Manabu Yamawaki. Takako Ukai adds, "AI will play a key role in the future of cabin crew work. Beyond operations, we envision AI agents that can autonomously manage tasks and even support crew wellness—for example, helping optimize sleep schedules based on flight destinations."

Fujitsu continues to support this initiative through its Uvance[3] Data Intelligence offering, including Fujitsu Kozuchi AI platform. As tasks grow more complex and user needs more diverse, the evolution toward autonomous AI agents will be essential. Guided by a human-centric approach, Fujitsu sees AI not as a replacement, but as a collaborative partner in solving real-world challenges and creating new value.

※3 Uvance integrates technology with cross-industry expertise to support business growth and address societal challenges across sectors.