IBM

Business challenge

To ensure on-time departures, Ground Ops staff such as Flight Managers and Ramp Agents rely on critical data from many sources. How could Lufthansa make real-time data accessible to staff on-the-move?

Transformation

With integrated iOS apps, Ground Ops staff gain access to real-time information on the complete aircraft turnaround process in the palm of their hands.

**Tobias Heep,
Project Lead for App
Development,
Lufthansa**

Business benefits:

Faster
aircraft turnaround times

Smoother
flying experience
for passengers

Higher
productivity for
Ground Ops staff

Lufthansa

How iOS apps help Lufthansa to ease the flying experience

How could Lufthansa improve flight operations efficiency, speed up passenger boarding and cut costs by avoiding delays? Working with Apple and IBM®, Lufthansa created a suite of iOS apps for its Ground Ops team, addressing operational excellence and resulting in a smoother flying experience for all passengers.

"The iOS apps created in partnership with IBM iX will greatly improve the travel experience for everyone— passengers and Lufthansa staff!"

Tobias Heep
Project Lead for App Development
Lufthansa

Share this

When does my flight depart?

Answering this simple question depends on a host of coordinated actions; fuel, catering, crew, cleaning, baggage, cargo—the list is almost endless. Flight delays are enormously expensive, both in direct costs and in reduced aircraft utilization, and of course they also have a huge impact on customer satisfaction and loyalty.

With punctuality at a premium, airlines rely on Ground Ops staff to conduct the operational orchestra that gets planes away on time. Flight Managers troubleshoot and resolve issues wherever they arise, from departure gate to baggage handling. In a typical day, a Flight Manager might be responsible for the on-time departure of up to 15 flights and could easily walk more than 10 km between gates—all while having regular calls with the office to check for any important updates.

Tobias Heep, Project Lead for Ground Ops App Development at Lufthansa, explains, "We constantly ask ourselves how we can improve our operational performance. Rather than working from paper or out-of-date information, how could we collate essential data, available in a variety of different back-end systems, and put it into Flight Managers' hands in real time?"
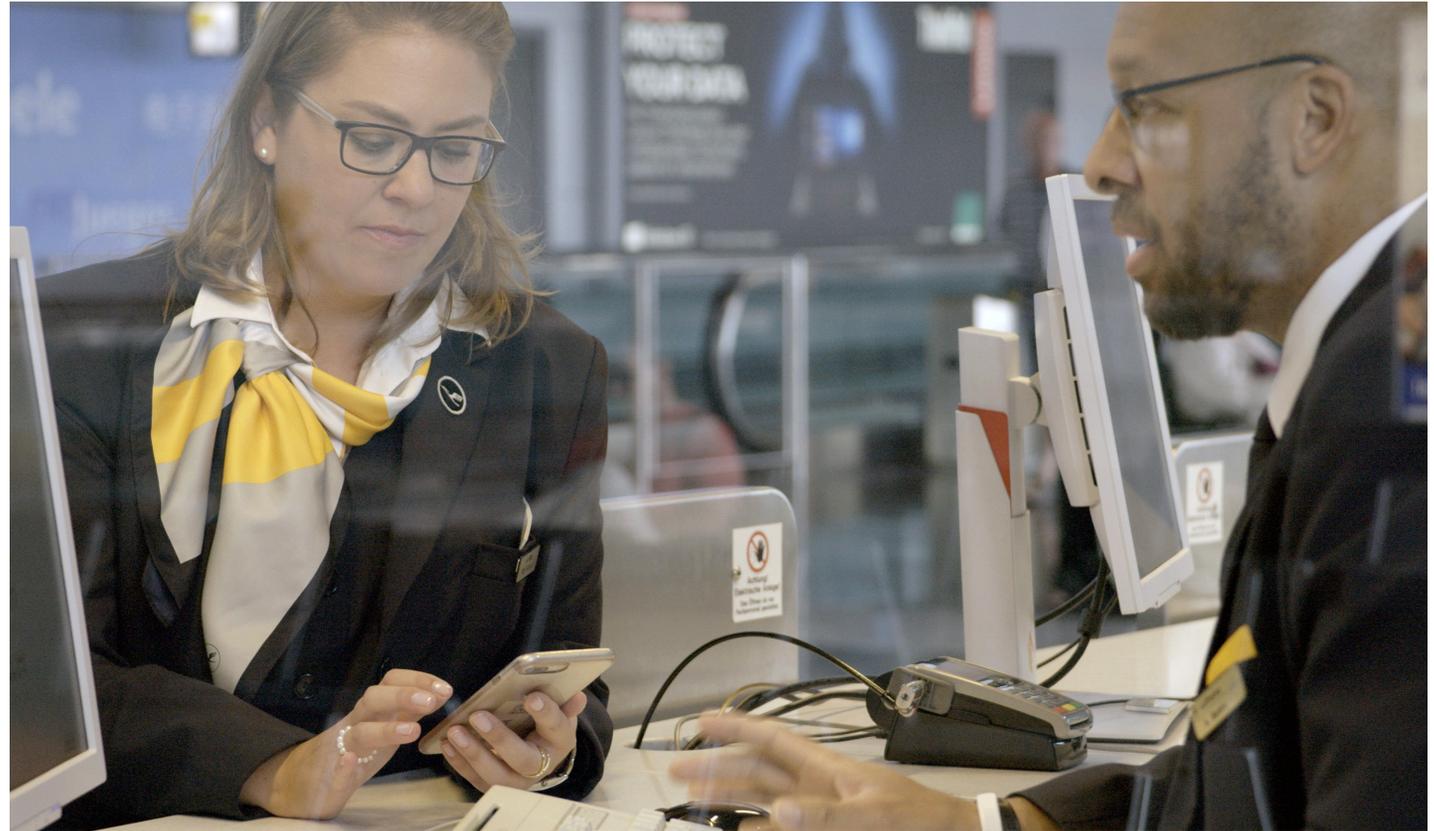
Stephanie Abeler, Senior Director Service Factory Ground Operations, comments, "Transparency and alignment of information is a critical factor for a smooth, on-time performance. We knew that colleagues should not have to waste time gathering information if we can do that for them."

Go mobile to get airborne

Lufthansa imagined how the information might look on a mobile device, and selected iPhone and iPad as target devices based on security, reliability, and total cost of ownership. The company also made this choice because of an expected longer device lifetime, which would help to deliver reduced operational costs in the long term.

"Close collaboration between business users and the IT function is crucial for continuous digitalization projects, and Lufthansa and IBM achieved excellent rapport."

Stephanie Abeler, Senior Director Service Factory Ground Operations, Lufthansa

Manage Gates handles above-the-wing information, such as passenger lists, connecting flights, seating information, catering and more; Turnaround Manager merges above-and below-the-wing data, including fueling, baggage, cargo, air bridge and passenger boarding; and Ramp App enables Ramp Agents to access critical ground-handling data, as well as the loading instruction, cargo, mail, baggage and special load information.

Stephanie Abeler adds, "Each app is customized to the role of the user, yet they all present identical data, ensuring that our operations are fully integrated and synchronized."

Ramp up, scale back

IBM iX began the app design process focused on the user experience and guided by Apple Human Interface Guidelines. The process included workshops and staff interviews to discover what would make their lives easier. To provide rapid time-to-delivery on the technical side, IBM iX proposed the Agile development process, to create a flexible, iterative approach to building the solution, based on rapid and frequent feedback.

"The Flight Managers love the app; it has replaced their old lifestyle of carrying lists around, of being on the phone eight hours a day trying to locate people, and of running to find a PC somewhere in the terminal to search for data."

Tobias Heep, Project Lead for App Development, Lufthansa

Tobias Heep continues, "The Apple ecosystem offers specific advantages for us, with fewer device types and software versions to manage, and our primary decision was based on security and total cost of ownership. We were aware that handing out an iPhone to employees could serve as a soft-motivation factor, too!"

To make the app project a reality, Lufthansa looked for a partner that understood the airline industry inside and out, offered iOS technical and user experience skills, and could provide a team of design and implementation experts able to integrate data from multiple enterprise sources. Lufthansa selected IBM iX®, the interactive experience specialists, and became the foundation client for Ground Ops apps within the IBM Aviation App Suite. The collaboration has created three new apps so far: Manage Gates, Turnaround Manager, and Ramp App.

Tobias Heep remarks, "The very first touchpoint with IBM iX was the design workshop, which completely overturned our waterfall methodology. Normally we would write detailed specifications defining everything in the smallest detail and then hand this brief to a vendor, and maybe six months later the software would arrive, for better or worse."

"The IBM iX experience was completely different and far more engaging. Our staff returned from the workshop sessions really excited."

"For example, from a blank sheet of paper they had produced a high-fidelity design for the Manage Gates app for iOS in just three days, which detailed a day in the life of a Flight Manager and all the complex interactions, data and services needed to ensure what we call 'brilliant basics,' such as a flight's on-time departure. We followed this template right through the enterprise data integration and app build processes, and the final product ended up being remarkably similar to the initial design."

From design to delivery

Taking the design concept, IBM iX deployed global teams on an Agile development process that saw the Manage Gates app emerge as a functioning iOS prototype in just a few weeks. IBM arranged for development sessions in Cupertino, California, and at the IBM iX team in the IBM Travel & Transportation Industry Studio in Toronto, Canada.

Curiously, such rapid execution surfaced new challenges. To drive the app, for example, the Agile team requested new data feeds from Lufthansa's core systems at short notice, which created new challenges.

"The big challenge was to ensure that the back-end development was able to keep pace with the front-end development," says Tobias Heep. "With continuous refinement and design iterations every couple of weeks, we created new data feed requirements. While the IBM iX team marched forwards, internally we were on the hunt to figure out where we could source and stream the data. Sometimes we would discover that the technical gaps were simply too great to be closed within short timescales, which led us to revise the design and deliver the additional functionality at a later stage."

The apps are supported by IBM Mobile Solutions, which provide the integration, development and management services to support iOS apps. IBM Mobile Solutions enable app portfolio management, testing services, distribution and security services—all essential for enterprise operations. IBM deployed its global delivery model, with on-site business experts and analysts supported by off-site code and development. This approach gave Lufthansa the ability to scale back or request additional resources according to project demands, helping to achieve delivery points in a very efficient and flexible working manner.

Tobias Heep comments, "IBM iX was able to scale up and down flexibly, particularly during phases where speed of delivery was essential. With the Manage Gates app project successfully delivered, we started on the Ramp App while the Turnaround Manager project was still in progress. IBM expanded the resources very successfully with its local and global teams in order to deliver both projects in parallel."

"Throughout the project, we worked together virtually as one team, with shared responsibilities and commitment to success, even though some team-members were geographically distant. The collaboration was very effective, with sessions in the IBM Travel & Transportation Industry Studio in Toronto, Canada, and the Development Garage in Bengaluru, India, and the outcome were high-quality iOS apps delivered on time by a single, integrated IBM and Lufthansa team."

Stephanie Abeler remarks, "Close collaboration between business users and the IT function is crucial for continuous digitalization projects, and Lufthansa and IBM achieved excellent rapport."

Transforming traveling lives

Manage Gates has transformed a Flight Manager's daily life. Rather than using paper notes, rushing to the office to locate information, or spending hours on the phone, a Flight Manager now has real-time information from multiple sources, collated into a single iOS app, with full interactivity.

Using the intuitive Manage Gates app on iPhone, a Flight Manager can dispatch more flights, safely and efficiently, and take decisive action early to avoid potential delays.

For example, rather than waiting until they next visit the office, Flight Managers can see which inbound flight is bringing connecting passengers, enabling them to make an instant decision on whether to hold a flight for the arrival, saving time, reducing errors and avoiding delays.

The Turnaround Manager app has changed the way different roles in the process collaborate. Handed out to pilots, ramp agents and Flight Managers, the app ensures that the relevant functions in the process are kept up-to-date and can exchange crucial information updates easily through the app.

Similarly, the Ramp App places a powerful tool in the hands of the ramp staff, providing direct access to detailed data regarding cargo and baggage loading, consolidating information previously spread across a whole variety of systems. With data accessible exactly where and when it is needed—under the wing of the aircraft on the ramp—Ramp App significantly smooths the aircraft turnaround process.

Tobias Heep elaborates, "We use iPhone and iPad to place essential data at our Flight Managers' fingertips in a secure, reliable way. IBM iX provided outstanding design guidance, and delivered the critical enterprise data integration that makes this possible."

Blue-sky thinking

Lufthansa and IBM are now looking to harness the advanced capabilities of iOS and integration with cloud-enabled services such as AI to provide new services, built on this new app foundation.

Tobias Heep explains the possibilities: "For example, passengers' carry-on bags that do not fit into cabin lockers must be re-labeled and taken to the aircraft hold, a constant source of delay. We can use the iPhone camera to provide accurate baggage measurements, and re-allocate oversize items before they cause delay and frustration in the cabin."

"Similarly, strict rules for animal transportation are in place, and for example travel cages must be of specific size depending on the species or breed. It's too much to expect every member of the gate team to recognize every animal and know the crate required, and looking through the manual takes up valuable time, which can frustrate passengers waiting in line."

"We are looking at connecting the app to an AI powered by IBM Watson® that recognizes the breed and immediately specifies the appropriate crate size, which could save enormous amounts of time. In addition, the app could update the flight manifest in the background."

"The same app and AI can be extended in so many areas. For example, if even 0.1 percent of baggage is lost, perhaps because the label is torn off, this produces thousands of items. Using the app and the iPhone camera, AI can recognize the brand and make, color and size—even if it is hard or soft shell—and post the details automatically to the baggage tracing system that passengers can inspect. This would help re-unite left behind luggage with their owners, and massively improve the travel experience."

Tobias Heep concludes, "The Flight Managers love the app; it has replaced their old lifestyle of carrying lists around, of being on the phone eight hours a day trying to locate people, and of running to find a PC somewhere in the terminal to search for data. The iOS apps created in partnership with IBM iX will greatly improve the travel experience for everyone—passengers and Lufthansa staff!"

Solution components

- IBM® Mobile Solutions
- IBM Services (iX®)
- IBM Travel & Transportation Industry Studio
- iPhone, iPad and iOS apps

About Lufthansa Group

Lufthansa Group includes Austrian Airlines, Brussels Airlines, Eurowings, Lufthansa and SWISS Air Lines, brands, reaching more than 200 destinations in over 75 countries. The group operates hubs in Frankfurt and Munich (Germany), with additional hubs in Vienna (Austria), Brussels (Belgium), and Zurich (Switzerland). In April 2019, the group carried 12.5 million passengers.

Take the next step

To learn more about solutions from IBM and Apple, please contact your IBM representative or visit: ibm.com/mobile/apple-partnership

Connect with us