



### Business challenge

Etihad Airways' online check-in process no longer met its expectations for performance, ease of use and reliability for its global customers. How could the company create a more seamless, integrated and personalized digital experience?

### Transformation

Etihad Airways wanted to enhance customer experience by introducing greater ease, speed and personalization into the digital elements of air travel. Working with IBM® Services™, the airline is using IBM Cloud™ to transform its services, bringing the quality of the digital touch points closer to the high standards of the airline's travel experience.

## Results

### Boosts success rates Increases study efficiency

for online check-in, enhancing passenger experiences

### Reduces wait times

in airport terminals and cuts the cost of providing service

### Provides a flexible platform

and model for developing new business and cognitive-driven services

# Etihad Airways

## Enhancing the guest experience with faster, more personalized check-in services

Etihad Airways is the national airline of the United Arab Emirates. Established in 2003 and wholly owned by the government of Abu Dhabi, the carrier uses a young and environmentally friendly fleet of more than 120 aircraft to serve more than 110 passenger and cargo destinations across six continents. Inspired by Emirati values in looking after passengers, Etihad Airways benchmarks itself against the world's best hospitality establishments, not just against other airlines.

*“IBM Services, IBM Garage and IBM Cloud meant access to truly world-class expertise and best practices, backed by IBM's aviation experience, and integrating all of that into our digital transformation.”*

—Takhliq Hanif, Head of Group Enterprise Architecture, Technology and Innovation, Etihad Airways

Share this



## Creating standout experiences

Passenger air travel is a highly competitive industry with low margins and price-sensitive consumers. While budget airlines can cut costs—and service levels—to the bone, premium carriers must create memorable travel experiences that people will want to repeat. For Etihad Airways, the challenge is to stand out from other premium carriers operating the same routes.

With its Guest 360 and Choose Well programs, Etihad aims to personalize each customer's preferences—for meals, in-flight services, transportation, and so on—such that passenger expectations are met, exceeded and evolved through relevant choice-based ancillary services. In terms of technology, this requires the airline to bring together all customer services—and rich data on passenger preferences—into a single view of the customer.

“One of the key building blocks of our digital strategy is to really understand our guests' preferences and the experiences they want,” says Mike Papamichael, Vice President, Technology and Innovation, Etihad Airways. “When we understand that, we can provide a more customized and frictionless travel experience for our guests and offer additional services at the right time to enhance their customer journey.”

## Aligning digital with physical

“If you do not have a good integrated digital experience before you step onto a world-class aircraft, it sets the wrong tone,” says Papamichael. “Everything we do is for our guests, and everything is about customer experience. I wanted the digital journey to match our really fantastic in-flight experience. I wanted the team to transform our current system leveraging cloud technology and microservices and build this complex solution in less than three months”

Etihad Airways was using an off-the-shelf check-in application that had reached the end of its useful life and no longer offered a sufficiently smooth or reliable service to customers. The airline had launched a parallel mobile app using newer, API-driven backend technology, and it was clear that passengers preferred this channel. Knowing that its plans for ancillary personalized services would work better on the web channel, Etihad Airways wanted to modernize the web check-in system to provide a similar or better check-in experience.

“Check-in business processes had become so complex that our application could no longer cater for the personalization we were trying to achieve,” says Kavita Iyer, Technology and Innovation Digital Portfolio Manager. “As we launched our next-generation airport in Abu Dhabi, we wanted to improve the digital experience and to provide more ancillary services.”

## Choosing IBM Cloud

To simplify the customer experience while providing more choice, Etihad Airways planned to create a new platform for all digital services. By adopting a microservices architecture on an open, highly scalable hybrid-cloud platform, the airline could assemble reusable components to accelerate the delivery of new applications—the first of which would be a new web check-in solution.

“Originally, we were going to redevelop everything ourselves and go to the market with our own microservices and APIs,” says Takhliq Hanif, Head of Architecture, Technology and Innovation. “Instead, we decided to use the IBM NextGen Common Travel Services on IBM Cloud as part of our service orchestration and API economy layer. IBM Cloud gives us the opportunity to develop cost-effectively cloud-native applications and it is a mature environment in terms of the DevOps toolchain it offers.”

Using IBM Cloud and the NextGen Common Travel Services (CTS) solution also cut the anticipated delivery time for the web check-in application from nine months to just 15 weeks. “Executives don't want to go on a three-year journey unless you can deliver value along the way,” says Hanif. “Using agile practices on IBM Cloud, we moved at a speed never before seen in this company.”

## Comprehensive IBM services

To smooth its digital transformation journey, beginning with an IBM Garage workshop in New York, Etihad Airways focused its business challenges and worked with IBM Services on potential technology solutions. As part of a benchmarking exercise on best practices across the entire travel industry, IBM design strategists and interactive experts helped a cross-functional Etihad Airways team reimagine its own check-in process. This enabled the company to create an experience-led customer journey using IBM Enterprise Design Thinking™ processes.

IBM and Etihad Airways set up a joint development team in a shared space in IBM offices. Etihad Airways created a best-practice DevOps team to work closely with IBM developers, and set up a lightweight DevOps toolchain on IBM Cloud within which to coordinate development work. Additional IBM Garage workshops helped to refine the customer experience objectives and determine the mix of platform technologies needed.

A key component of the new platform at Etihad Airways is the CTS asset, which provides a set of common services, configurable business rules and prebuilt adaptors for the airline industry. Etihad Airways challenged IBM to modernize this asset into a portable, containerized platform on Kubernetes, so that the airline could deploy in different cloud environments as required for

compliance with local data-protection regulations. To help Etihad Airways enable this multicloud strategy, IBM successfully moved the back-end application to Kubernetes to create the next-generation CTS (CTSng) solution, and deployed it on the IBM Cloud Kubernetes Service.

“Containerization with Kubernetes aligned with our strategy of being able to move workloads around the platform,” says Hanif. “It will also help as we develop for mobile channels and kiosks, where we’re planning to reuse existing backend services.”

### **Full integration**

Following a rapid proof of concept to show that the new web check-in solution would be able to communicate with Sabre reservation services, the team created the new solution on IBM Cloud in just 15 weeks. Key components of the solution include Liberty for Java, a runtime for Java apps; Log Analysis, which helps DevOps teams by aggregating and analyzing logs; Compose for Redis, which provides open source data storage for apps; Jenkins, for continuous integration and continuous delivery; Gitlab, for code repositories; JFrog Artifactory, a repository manager; and Subversion, for app version control. The solution uses the IBM API Connect solution on IBM Cloud to integrate the new web check-in functionality with existing back-end systems.

The IBM CTSng platform provided prebuilt and preintegrated APIs which could be easily consumed by the front-end channels to develop the check-in application. “One of the reasons we brought in prebuilt APIs is that we needed to connect to 12 major systems for check-in, and cater to more than 270 unique processes,” says Iyer. “We also needed to connect to 18 existing integration systems on the backend. For example, we are one of the few airlines that provides US Immigration pre-clearance. Using prebuilt APIs from IBM put us on the fast track towards meeting our objective.”

### **World-class expertise**

Using the Backend for Frontend application development pattern expedited development of the new web check-in user experience and helped ensure quality during the process. This pattern helps development teams iterate features faster and maintain control over the back-ends for mobile apps without affecting the experience for parallel web apps.

“Using microservice patterns helped us from an operability point of view,” says Hanif. “Without that kind of expertise behind us, adopting public cloud services could have been risky.”

He adds: “The IBM Services, IBM Garage team and IBM Cloud platform meant access to truly world-class expertise, platform and best practices, backed by IBM’s aviation

experience—all of which we were able to integrate into our digital transformation.”

## **Proving the value of cloud**

Etihad Airways successfully harnessed IBM Cloud and microservices platforms to meet its highly ambitious 15-week delivery target, all while adopting new delivery and support methodologies. Today, Etihad Airways runs three IBM Cloud environments across two regions, in active - hot-standby mode to support resilience. The power of this hybrid-cloud approach was shown during user-acceptance testing, when the airline was able to optimize response times by moving workloads between IBM Cloud centers to reduce latency with the back-end systems.

“Traditionally, a move like that would take us weeks,” says Hanif. “With IBM Cloud, we were able to do it within hours, and that’s a really powerful thing to achieve.”

### **Fast and easy check-ins**

The new web check-in solution empowers guests of Etihad Airways to manage their own travel online, including the check-in process itself, the selection of seats, the printing of boarding cards and a number of ancillary services. The solution is currently generating 1,700 WhatsApp boarding passes and 4,000 email boarding passes daily, and it has already been rolled out in several different languages.

“We wanted to make the check-in experience as easy as possible; we don’t want long lines of people in the airport,” says Hanif. “The next phase is all about choice. One of the things we’d like to do is personalization around destinations. AI and cognitive services on IBM Cloud are going to play a key role in that.”

A faster and simpler user experience has significantly improved success rates for online check-in, producing positive feedback from guests and reducing both waiting times and cost-to-serve at airport check-in desks.

“Designing the right user experience was a major challenge, IBM iX® quickly understood what we wanted to achieve in our industry,” says Iyer. “The 15-week deadline—for backend, frontend, reporting—was only achievable because each IBM team, including iX, completely understood the business problem.”

### **Enhanced personalization**

When Etihad Airways finishes decommissioning its legacy check-in software, IT maintenance costs will fall, with even larger financial benefits coming from the reduced cost-to-serve at check-in. However, the most significant benefits will be in improved passenger experiences and better understanding of customer needs—not least because check-in is the airline’s first point of contact with many of its guests.

“Variations within the region mean that we don’t always get to know the customer until quite late on in the journey,” says Papamichael. “And the check-in process is one of those really critical stages where we get to know the customer.”

The new web check-in solution also gives Etihad Airways better control over business rules and process controls, enabling it to personalize the passenger experience much more rapidly than before. Combined with new DevOps practices, this should allow the airline to bring new features and offers to market faster.

“We set IBM a major challenge to accelerate our digital transformation, and gave them hardly any time to do it,” Hanif concludes. “Our success shows the power of having a very large organization in your corner—IBM ties together the cloud platform, the industry expertise and the services to make it all happen.”

---

***“The 15-week deadline—  
for back-end, front-end,  
reporting—was only  
achievable because each  
IBM team, including iX,  
completely understood  
the business problem.”***

—Kavita Iyer, Technology and  
Innovation Digital Portfolio Manager,  
Etihad Airways

---

## Solution components

- IBM® Cloud™
- IBM Cloud Kubernetes Service
- IBM Garage™
- IBM iX®

## Take the next step

To learn more about IBM Cloud solutions, please contact your IBM representative or IBM Business Partner, or visit the following website:  
[ibm.com/cloud](https://ibm.com/cloud)

© Copyright IBM Corporation 2019. 1 New Orchard Road, Armonk, New York 10504-1722 United States. Produced in the United States of America, October 2019. IBM, the IBM logo, ibm.com, Enterprise Design Thinking, IBM Cloud, IBM Garage, IBM iX, and IBM Services are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at “Copyright and trademark information” at [www.ibm.com/legal/copytrade.shtml](http://www.ibm.com/legal/copytrade.shtml). Not all offerings are available in every country in which IBM operates. The performance data and client examples cited are presented for illustrative purposes only. Actual performance results may vary depending on specific configurations and operating conditions. All client examples cited or described are presented as illustrations of the manner in which some clients have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics will vary depending on individual client configurations and conditions. Contact IBM to see what we can do for you. The client is responsible for ensuring compliance with laws and regulations applicable to it. IBM does not provide legal advice or represent or warrant that its services or products will ensure that the client is in compliance with any law or regulation.

