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Case Study

Lufthansa

Quality Center on SaaS delivers a fresh impetus for application testing at Lufthansa.

Overview

Lufthansa ranks among the top ten airlines in the world in terms of size and is the second largest European airline. From its Frankfurt and Munich hubs, Lufthansa flies to 202 destinations in 78 countries. Besides its passenger business, the aviation group comprises divisions for cargo, aircraft maintenance, IT and catering.

Challenge

Today, an airline passenger can check in for their flight with just a couple of taps on a mobile phone, by pressing a few buttons at the automatic check-in machine, or having a short conversation with the staff at the check-in desk. The airlines' goal is for this to be a simple, pain-free experience for passengers; such simplicity depends on a highly complex system. Each step of the process must work in perfect harmony. First, the passenger's identity is verified; this data is then compared to that on the reservation system. This is followed by the seat reservation process, calculating air miles in the Miles & More system, and making adjustments in the catering system for any special requests. If a suitcase is checked in, it is weighed, assigned to the passenger, and then sent on its way to the airplane via the airport's conveyor system. Finally, the passenger receives their boarding card with all the relevant flight information.

Lufthansa's check-in system has more than 160 interfaces to other IT systems; both to internal systems and to the systems of external partners such as airports. The hardware and operating systems for running the check-in systems differ from airport to airport. The data transmission rates also differ significantly depending on the airport.

"We have had to contend with an extremely high number of external factors which are beyond our control," says Joachim Frantzen, senior manager, Project Management Governance, Lufthansa.

"This makes it very difficult both to develop the check-in software and to test it. Yet testing is important because the application must

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JOACHIM FRANTZEN
Senior Manager, Project Management Governance
Lufthansa

Lufthansa

At a Glance

- **Industry**
  Aerospace & Defense
- **Location**
  Cologne, Germany
- **Challenge**
  To provide departments with tools for software testing and test management without accruing high internal costs for IT.
- **Products and Services**
  Secured Quality Center licenses in a SaaS contract
- **Success Highlights**
  + Performed 20,000 test cases in 150,000 test runs with 40 to 70 testers
  + Discovered 20,000 defects which if left undetected could have damaged passenger service
  + Reduced time to set up new IT projects from days or weeks to just minutes
  + Reduced costs using the SaaS model

function perfectly at all times, regardless of where and how the passenger is checking in.

"If testing is not done the way it ought to be, the defects arising during operation might affect our passengers or even affect flight operations which is business critical.

"We had a situation where different business units, many working as profit centers, were creating their own methodologies, processes and tool sets so we needed a single point of truth.

Solution

The migration to the Star Alliance Common IT Platform prompted Lufthansa to implement OpenText™ Quality Center on SaaS.

"We didn't want to be saddled with management costs while we were in the process of migrating to the Amadeus customer check-in platform," explains Frantzen.

"This would have meant, for example, the hardware would have to be purchased, the database supported, and the backup procedures established. We'd have to have maintained capacity in the data center and at least one administrator.

"As we don't always have support cases with Quality Center, it would've been difficult to maintain an overview of possible areas of weakness. By using the SaaS model, we benefit from the support cases of other customers."

Lufthansa requires round-the-clock support as some of the internal and external software testers work outside of Germany. "If you take all factors into account when it comes to costing, the SaaS solution is quite clearly more cost-effective than an in-house operation," says Frantzen.

In order to guarantee data security and data protection, all Lufthansa data is maintained at the data center. From there, the network connections to Lufthansa branches are tunneled via a Virtual Private Network (VPN). Furthermore, the data is encoded via the Hypertext Transfer Protocol Secure (HTTPS) between the internet browser and the web server.

The mail traffic within the Quality Center on SaaS is also encoded. In addition, the project managers can fall back on further encoding and authentication mechanisms if increased security requirements become necessary. Lufthansa started the SaaS model with 50 concurrent-user licenses; there are now around 200 concurrent-user licenses and 3,000 users across the business. Whenever new software development projects get underway, Frantzen says his instructions are clear: "Test with Quality Center on SaaS because it is a good multi-faceted solution."

Results

In terms of governance, Frantzen's recommendation for the OpenText™ software suite certainly rings true. It allows Lufthansa to make all test data available in a centralized tool. "With Quality Center on SaaS, we're at the start of a path that will hopefully end in standardization," says Frantzen. "The departments who have already worked with Quality Center on SaaS no longer want to do without it. This means a steady increase in the number of users."

Using the SaaS model, an increasing number of users is no problem for Lufthansa. Given the global presence of the software testers, Frantzen views the fact the software can be used via the internet as being an advantage: "It means we don't have to install software onto the computers of the respective employees. This saves us further IT costs."

The new version of the centralized software is currently being tested at Lufthansa's Global Load Control Center in Kapstadt. Here, employees can ensure passengers, fuel, freight and luggage are optimally distributed throughout the plane, regardless of the start and end destinations.

"For us, this example represents a successful model for the future," says Frantzen.

"During the testing process, the departments are able to determine whether the new software meets their requirements and therefore increasingly recognize the benefits of Quality Center on SaaS."

Frantzen manages and controls the entire pool of licenses. If a project manager wishes to use the software, he verifies whether sufficient licenses will be available over the planned timeframe. If this is not the case, he purchases new licenses. After the project has ended, the licenses which are no longer required go back into the license pool.

"Of course, we can also rent out the licenses for certain periods. But so far, we have not made use of this possibility because more employees have come to value the tools and the support they offer in their daily work. For this reason, purchasing licenses is a worthwhile investment.

"Now, it's a matter of minutes to set up a new IT project within Quality Center on SaaS. It previously took days or in some instances weeks as appropriate reporting and structuring of the test cases was planned. This is a real efficiency growth. IT departments now work with the same methodology on test management. This was never possible before," comments Frantzen.

In future, the IT organization's aim is that all departments using Quality Center on SaaS make greater use of the module for Requirements Management than they have done previously. "This would allow us to perform more riskbased tests than before," says Frantzen.

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"Furthermore, the project managers can then determine at an earlier stage whether automated regression or load tests will be necessary."

One thing that is already certain is the increasing number of users gives Lufthansa greater transparency with regards to testing: "The test results are no longer hidden away in spreadsheets drawn up by individual employees. Quality Center on SaaS has become a central collection point for all test data. This is extremely important both for our revision and for the increasing number of internal and external compliance requirements."

The positive experiences encountered by Lufthansa Passenger Airline Group with Quality Center on SaaS could soon set a precedent for other carriers in the Lufthansa Group such as SWISS and Austrian Airlines. In order to take advantage of synergies, the IT governance responsibilities of the individual carriers are currently pooled in a central organization and location within the Group.

"This means that Quality Center on SaaS can be developed as a testing standard for the entire Group in future," says Frantzen.

"In my opinion Quality Center on SaaS has been very important. Although it's only a minor element in comparison to bigger activities running within the business it's an important item in harmonizing processes and testing within IT. Coming to a joined usage of common tools and tool sets gives us a chance to more effectively do our job," concludes Frantzen.

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