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BUSINESS | JOURNAL REPORTS: LEADERSHIP

Technology and the Airline: A CIO's View

At American Airlines, Maya Leibman describes IT's crucial role after a weather disruption



MAYA LEIBMAN | 'A lot of these situations are math problems with constraints.' PHOTO: MISTY KEASLER FOR THE WALL STREET JOURNAL

By **KIM S. NASH**

Oct. 2, 2016 10:04 p.m. ET

This wasn't a good summer for airline technology executives.

Even as more than 231 million passengers—record levels—were flying on U.S. carriers, meltdowns at Delta Air Lines Inc. in August and Southwest Airlines Co. in July disrupted several thousand flights. At Delta, a power outage knocked out operations and some critical equipment and didn't switch over to backup systems. For Southwest, the culprit was a faulty computer router.

The problems led some experts to wonder whether U.S. airlines rely too heavily on decades-old technology that isn't built for modern business.

American Airlines Group Inc., the world's largest airline by traffic, didn't suffer any high-profile outages this summer. Still, Maya Leibman, American's chief information officer, has been through her share, including a 2013 outage said to be related to a software failure.

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Before taking the CIO job in 2012, Ms. Leibman served as president of the company's AAdvantage loyalty program for more than two years, making her the rare IT executive who has done a stint leading a customer group.

After American merged with US Airways Inc. in 2013, Ms. Leibman led a team to integrate the two flight reservation systems.

Ms. Leibman recently spoke with The Wall Street Journal about her job and the sweeping impact that technology is having on operations throughout American Airlines. Edited excerpts

follow.

WSJ: *What did you do in IT to prepare for airline traffic this summer?*

MS. LEIBMAN: Before the summer starts, the operations team leads intensive preplanning sessions. All organizations that in any way contribute to the success of the overall operation come together. We go through a lot of different components: where we have spare aircraft; how we are doing for spare parts; where there may be weather issues or gate constraints. We look for hot spots.

We know ahead of time that summer is always more challenging. This past summer, Mother Nature wasn't a friend. There were a crazy number of storms, especially sitting over our hubs.

WSJ: *How does technology help with all of that?*

MS. LEIBMAN: It's most important to keep systems up and running. One of the biggest values IT can add is after some kind of disruption—weather or another problem. Customers need to be reaccommodated, crews and planes need to get back into their sequence. This summer, we focused on how we help operations recover after a big storm with a reaccommodation tool that takes a planeload of customers and reassigns them on the next best flights for those customers.

The tool figures out how to optimize rerouting of all passengers. There are a lot of people with connecting itineraries. Can they connect in Dallas versus Chicago? Can we send them to a sister city? Are they willing to fly into JFK instead of La Guardia? A lot of these situations are math problems with constraints. You need algorithms to optimize while considering all these constraints.

WSJ: *How else does technology change your business?*

MS. LEIBMAN: We're giving more self-service options to customers. We have greatly

expanded the capability for customers to change their own ticket on the website. If a flight is canceled, we give the opportunity to change the ticket themselves. If there is no disruption, you can't just change the arrival city [at no charge]. You'd have to pay the fare to that new city. In the past, depending on how the ticket was booked, a customer had to call reservations.

PREVIOUSLY IN C-SUITE STRATEGIES

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- Dress for Success, Be a Success?
- The Price Assertive Women Pay
- Avoid Common Merger Mistakes
- How Not to Flunk at Failure

But now everybody wants to take care of the situation themselves, so we needed to build that capability. That's been delivered in stages over the past two years, gradually adding different types of tickets to the website that people can change. [Two years ago,] we were at 60% to 70% of tickets being able to be changed like that. Now we're close to 100%.

WSJ: *How do emerging technologies figure into running an airline?*

MS. LEIBMAN: We do a hackathon internally every year. Our IT employees and business employees come together and have 24 hours to develop a new system and pitch to a panel of [internal] judges. One team used a drone to check for damage on top of aircraft. Today, we need to put somebody on a scaffold to look at the top of the aircraft to determine things like hail damage. The team demonstrated a drone flying over to map the top of a Boeing 777 aircraft.

Another team used virtual-reality glasses to provide a more compelling, richer marketing experience as we talk to corporate sales partners. We could show the interior of a new aircraft, like the premium economy class we offer on the 787 that we're taking delivery of now. These are all ideas we would strongly consider.

Ms. Nash is a senior writer for CIO Journal in New York. Email kim.nash@wsj.com.

Corrections & Amplifications:

US Airways Inc. and American Airlines merged in 2013. An earlier version of this article incorrectly said that American bought US Airways in 2013. (Oct. 3, 2016)