THE FUTURE OF AIRPORTS: A NEW MODEL

A new era of data management brings major opportunities for airports

Airports are brimming with data.

There's data generated by passengers – each with unique itineraries, checkpoints and baggage to process. There's data generated by aircraft, as flights arrive, taxi and depart on every runway. And there's data generated from airport operations and support functions, including logistics and resource planning, air traffic control and security. Larger airports with restaurants, retail outlets and duty-free shops create even more data.

This data can stay scattered, or it can be securely captured, organized and aggregated into meaningful streams of information.

At Collins Aerospace, we focus on the latter, taking a holistic, long-term view of what value data can bring to our customers:

- We use data to create a dynamic aviation ecosystem designed to make travel more seamless for passengers and more efficient for airport and airline stakeholders.
- We're also using data to streamline the curb-to-curb passenger experience including check-in, boarding and in-flight services.
- We're also leveraging data to help accelerate aircraft turnarounds, improve aircraft maintenance diagnostics, ensure flight path optimization and improve air traffic management systems.

And we aren't stopping there. The airport of the future will be an even more data-rich environment, with each collection point representing countless new insights and value potential.

It's why we're working – with and for our customers – on a number of key growth opportunities. Together, we can use data to reimagine the airport of the future and help redefine an entire industry.

DRIVE DATA TO THE CLOUD

Future state: Streamlined, offsite IT operations

Many airports continue to maintain independent IT operations on their premises—a holdover from the pre-Cloud era. They continue to house vast computer rooms, which require separate cooling units that expend energy and require a larger physical footprint. On-site IT teams maintain hardware, install new software, and address other IT issues on-demand.

However, given the track record of performance for Cloud-based computing, plus the ease, efficiency and cost-savings this kind of computing can offer, we expect to see more and more airports transitioning to offsite IT operations.

PREDICTIVE ANALYTICS AND SELF-MONITORING

Future state: Sensors to prevent downtime and disruption

Everything from microwave ovens to aircraft flight controls have self-monitoring sensors these days—sensors that can predict when a part will fail or what maintenance is needed and provide notifications. Airport systems of the future will likely have similar self-monitoring features. And the data from these sensors will then be accessible in a single dashboard for real-time decision-making and predictive analytics – making it easy to monitor and assess the overall health of the airport and help prevent disruptions.

SUSTAINABLE SOLUTIONS

Future state: A paperless airport for travelers and operators

The aviation industry is committed to doing its part to reduce its overall environmental impact. Alternative fuels and more electric aircraft are an important piece of the puzzle, but there are myriad ways airport operators can contribute to a more sustainable path forward.

Replacing outdated practices that are not only less efficient but costly to the environment is an important step. The use of paper – for boarding passes and baggage tags, for example – could now be eliminated. Here, too, the effective use of data is the solution.

Biometric solutions can eliminate the need for paper boarding passes. With biometrics, your face is your boarding pass and enables you to travel seamlessly, "curb to curb," without using paper or showing any form of ID.

TRACKING AIRPORT RESOURCES

Future state: Reduced energy consumption and physical footprint

Energy is a huge expense for most airports, not only because of the cost of heating and cooling immense open spaces, but also due to inefficient equipment. To offset this, airports of the future will need more energy-efficient products that last longer. And they'll need to re-think how airport space is utilized: Does that kiosk turn off when no one standing in front of it? Does hardware need to be replaced so often? Is there a more efficient use of space for passenger processing?

Data can help answer these questions and create more efficient processes to reduce energy consumption and allow airport operators to redirect financial resources to other improvements.

CONNECTIVITY

Future state: Connected systems improve traffic flow and decision-making

In an airport environment, the word connectivity can mean many things. In a literal sense, it can mean the spatial relationships among physical structures or the connection points along a journey. In the digital realm, it can mean something much broader.

An airport's ACDM (Airport Collaborative Decision-Making) system is a form of connectivity. It enables all stakeholders in airport operations, such as flight operators, airport operators, air traffic control staff, ground handlers, fixed-base operators, and others, to share information in order to improve policies, planning and decision-making.

But connectivity also means connecting various products and systems to each other. This interconnectivity can bring new insights and benefits that stand-alone systems can't provide. Greater connectivity leads to more data collection and analysis, which can lead to more insightful decision-making, more predictable operations and fewer disruptions of service.

And we have the experience, proven solutions and vision needed to help our customers use that data to create a more connected, seamless and sustainable airport of the future.

If airports are brimming with data, then that data is also filled with possibility.

Collins Aerospace has long recognized the value of the data gathered across our connected aviation ecosystem. And we have the experience, proven solutions and vision needed to help our customers use that data to create a more connected, seamless and sustainable airport of the future.

Visit collinsaerospace.com/airports to learn more

Inspired by a thought leadership article authored by Rakan Khaled, general manager of Airport Systems for Collins Aerospace.

Collins Aerospace

COLLINS AEROSPACE

airports@collins.com
collinsaerospace.com