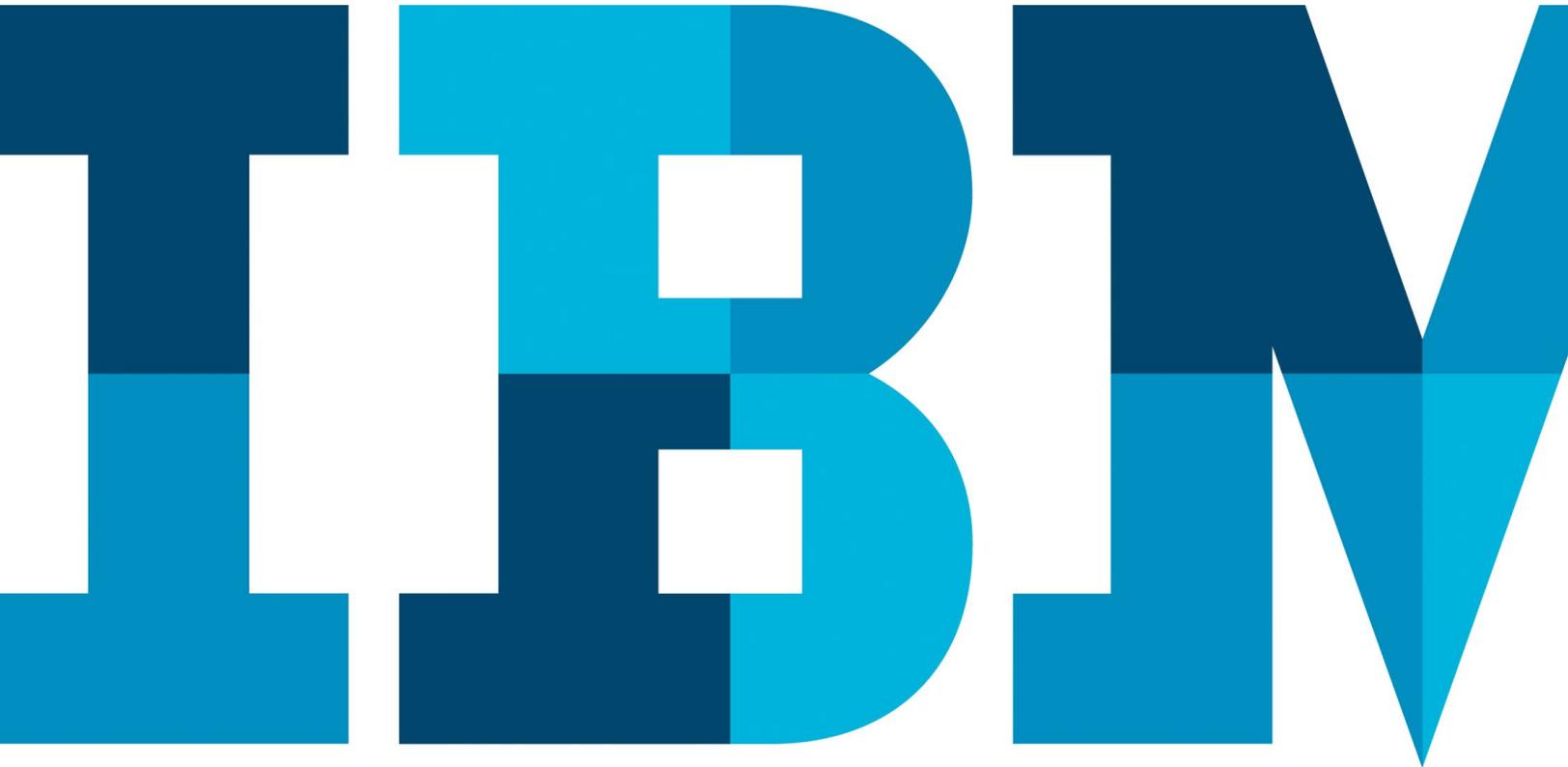


Smarter aerospace services based on intelligent insights

Fleet availability and optimization services from IBM



Highlights

- Enhance services for increased revenue
- Maximize asset and infrastructure availability
- Enhance operational efficiency
- Improve the end-to-end customer experience

Commercial aviation is in the midst of a fundamental transformation. The Internet of Things (IoT)—and the data-rich aircraft connected to it—are revolutionizing both expectations and capabilities for commercial aviation companies and their customers. While an e-Enabled future for aviation poses business risks, for manufacturers with vision this connected environment is filled with never-before-seen opportunities.

At IBM, this vision is called *smarter aerospace services*. Smarter aerospace services means more than just delivering insights using predictive analytics; it joins real-time operational data from currently available information technologies with the IoT capabilities found in modern aircraft and their components. This helps you and your customers realize operational gains and costs savings—resulting in larger net revenues while simultaneously growing your top line revenue through new value-added services.

Realizing the vision

Obtaining the benefits is easier than you may think. Because it is built using existing technologies and capabilities, you can begin with the capabilities that make the most sense to your business today, then extend capabilities as opportunities and your organization dictate. Incorporated within a simple-to-use interface, these capabilities can be broadly classified as ecosystem integration, equipment optimization and fleet-level planning.

Lifecycle and ecosystem integration

Commercial aviation businesses are experiencing a tidal wave of information—and the wave is growing. Maximizing the business value of that big data requires that it first be aggregated and integrated. With data values for aviation information such as weather, status and equipment condition changing so rapidly near real-time data updates are a necessity.

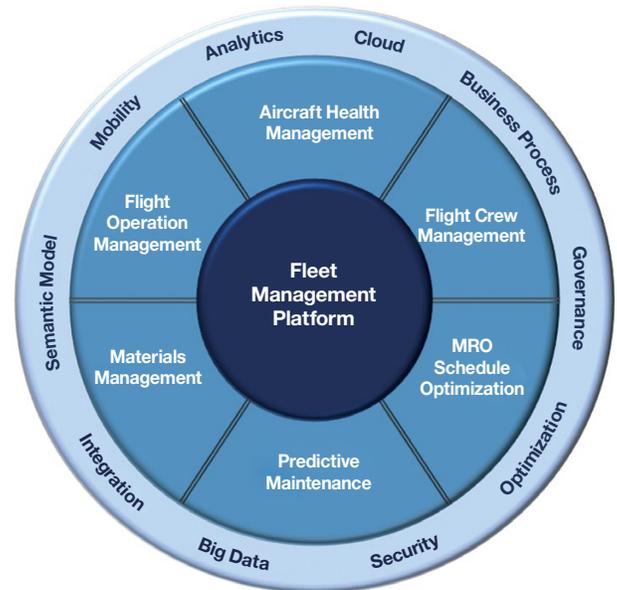


Figure 1. How commercial aviation integrates with smarter aerospace services.

Fortunately, technologies already exist that can deliver these capabilities. To aggregate and house this flood of big data, cloud and hybrid cloud tools can physically hold the information while providing maximum access speed. You can then combine these infrastructure models with platform-independent services that integrate business processes, data and organizational knowledge to accelerate information flows and improve data translation. The result is real-time data integration—despite growing data volumes and types.

Predictive insight and equipment optimization

Data integration is only the beginning, and if you stop there, it adds little value to your bottom line. The real power of that data lies in extracting insights that come from uncovering patterns and predicting future events based on those patterns.

Powerful predictive and cognitive analytics can dynamically analyze data volumes that only a generation ago would have been unmanageable. In exploring aviation big data, these cutting-edge analytics have the intelligence to swiftly identify insights as well as confidently forecast operational disruptions and the consequences of those disruptions. This allows you to rapidly analyze various what-if scenarios and optimize both immediate and longer-term decisions to maximize your bottom line.

Advanced fleet planning and maintenance execution

With thousands of parts to maintain, and aircraft located around the globe, maintenance management can be a challenge—even with advanced information technology. As the connected aircraft continues to transform aviation, the exploding data quantities threaten to overwhelm existing management systems and hinder decision-support tools from identifying optimal maintenance protocols.

Infrastructure improvements and powerful analytics, applied to connected aircraft data, create valuable, relevant insights that allow a revolutionary paradigm shift to predictive, health-driven maintenance and optimized maintenance scheduling. This shift ushers in more efficient maintenance work planning, reduced spares inventory and optimized resource allocation—generating new business value.

Once you make this shift, you can optimize flight and maintenance schedules based on predictive asset health and spare parts availability, as well as facilities and personnel availability to maximize net revenue and minimize operational disruption. Furthermore, this can improve spare parts management, giving you the ability to anticipate, control and react to supply chain volatility while balancing operational priorities and schedules.

User-friendly operational environment

Many organizations charged with managing complex operations—while simultaneously responding to real-time data, alerts and events—are successfully implementing intelligent operations centers. These centers enable their organizations to more efficiently manage operations in real time, focusing efforts instead on the operational exceptions that cause system disruptions and resource drain.

The intelligent operations platform from IBM provides comprehensive capabilities to the commercial aviation ecosystem, empowering both OEMs and operators to use shared data to collaborate and expedite responses to potential disruptions. Most importantly, this platform combines the benefits of predictive analytics, optimized decision support and asset configuration history within a role-based dashboard that gives you the ability to make accelerated, optimal decisions.



Figure 2. A smarter aerospace services interface.

Envision the possibilities

The real power comes when these various components are integrated into a cohesive solution. To illustrate the value IBM technology can produce for you, IBM developed the IBM® Fleet Optimization Services Demonstrator. Using a typical commercial aviation scenario, the demonstrator highlights how predictive insights based on big data can produce decisions that avoid operational disruptions and maximize asset availability.

Commercial aviation is experiencing a transformational shift that will continue for at least the next decade. To succeed in this environment requires a unique blend of deep industry knowledge such as that possessed by your organization coupled with IT enablement delivered by a strong partner that can shorten your time to value for new innovative services.

Because of IBM's hands-on experience in creating, maintaining and securing standardized, nonpartisan IT infrastructures across a range of industries, when you partner with IBM you can profit from outstanding IT enablement expertise and in-depth industry knowledge on both the OEM and operator sides of the commercial aviation ecosystem. Just as important, IBM brings a broad range of technologies that provide advanced capabilities such as predictive analytics, comprehensive asset management and role-based operational cockpits, combined in an IOT solutions-based portfolio, and delivers them with a variety of cloud deployment options as well as worldwide support.

For more information

To learn more about the IBM Fleet Optimization Services Demonstrator, please contact your IBM representative or visit: ibm.com/industries/aerospacedefense/



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