HOW INDUSTRY 4.0 IS TRANSFORMING THE AIRCRAFT INDUSTRY

Data is creating an unpredictable market landscape for major industry players like Boeing, Airbus and Air France

By Professor Ralf W. Seifert and Richard Markoff

Industry 4.0—the increasing use of automation and data exchange in manufacturing—is already having an impact on business models in numerous—and often surprising—ways.

One illustrative example is how data in the aircraft maintenance space is creating new business models and fierce competition between industry rivals.

Skywise: Data as a platform

In 2017 Airbus introduced a new digital platform called Skywise. The value proposition of Skywise is to move beyond simply providing maintenance and parts of Airbus equipment to their client operators. Skywise is a multi-operator platform that offers operators the capability to compile data from diverse sources regarding all aspects of aircraft usage and maintenance.

Skywise then applies advanced analytics and machine learning powered by Palantir to "empower end users to gain new insights from their own data" for Maintenance, Repair and Operations (MRO) activities. These insights largely concern Predictive Maintenance and all of the operational efficiencies and optimization it can offer in parts usage, aircraft downtime and service costs.

Airbus rightly points out that operators would previously only benefit from the rich data collected over the operational life of their aircraft to the extent it was integrated into new aircraft development. With Skywise, operators can now leverage the data and expertise of Airbus engineering, combine it with their own data and generate value through operational excellence.

But Skywise offers much more than that. The data that powers the analytics is in fact collected from *all participating operators* using Airbus aircraft. While Skywise carefully respects confidentiality, the robustness of the predictive models is greatly enhanced by the cumulative data of more planes with more operators. It is the power of a platform in its truest sense: it offers the community of users something they could not replicate on their own.

The cumulative impact of the data from multiple operators also enables the platform to provide benchmarking and enables Airbus to introduce new insights into the designs of aircraft.

Prognos: Air France gets in on the game

However, not all aircraft are made by Airbus. The other big player is Boeing, and many operators have aircraft from both Original Equipment Manufacturers (OEM), including Air France. The flagship carrier has developed a competitor to Skywise called Prognos, which was launched at almost exactly the same time as its competitor.

As with Skywise, Prognos offers to use the data of the Air France fleet and that of community members to consolidate data for Predictive Maintenance, performance monitoring and operational efficiency. Prognos does not have nearly as large a pool of aircraft to power its analytics, however. Skywise can offer deep data, and presumably more performant analytics, but only for Airbus aircraft. Prognos, on the other hand, can offer analytics *for both Airbus and Boeing aircraft.*

Air France, by some measures, is only the seventh-largest airline in the world. It's possible that other airlines with mixed fleets will seek to enter this space and offer Predictive Maintenance and data analytics as a service.

Competing business models

For an operator solely employing Airbus aircraft, there is an inherent appeal to Skywise, whereas those with mixed fleets may prefer Prognos. The jockeying for position in the market may continue to evolve. Should Boeing emerge with its own offer then the landscape would get considerably more complicated.

Skywise and Prognos are now both trying to use Predictive Maintenance and advanced analytics as a driver of revenue and an expanded product offer, with one provided by an OEM and the other provided by an operator, but in both cases fundamentally altering the business models of the two companies.

It's a sign of the coming of age of Industry 4.0 that one of the most enticing technologies – Predictive Maintenance – is no longer trying to establish its value. That battle seems to be won. The competition now is to see who will find the winning business model to deliver that value.

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