The issue

In 2016, in the US alone, the cost of maintenance related delays for airlines was well over $0.5B. Almost a third of total delay time is due to unplanned maintenance.¹

• Each aircraft type has unique operating characteristics and certain components that drive frequent and costly delays.
• Amidst all the white noise of aircraft messages and maintenance activities, airlines need to identify and act on pertinent signals that are highly indicative of potential delays or cancellations (D/C).

The PwC solution

PwC’s Predictive Maintenance solution can predict 30-50% of maintenance related delays and cancellations, leading up to a 0.3-0.5% improvement in on-time performance.

• Reduced maintenance cost and improved aircraft availability through optimization of the maintenance program.
• Reduced maintenance turn around time (TAT) through efficient troubleshooting.
• Reduced parts inventory requirements through integrated supply chain and planning.
How it works

PwC’s predictive maintenance solution leverages aircraft sensor data and maintenance logs to help airlines avoid costly maintenance delays and cancellations.

• We evaluate priority ATA chapters for modeling and use sophisticated analytic filters to identify the key messages that correlate most highly with delays and cancellations.

• We combine signals from fault messages with signals obtained from text mining of maintenance logs to identify failure indications.

• We develop a suite of rare event models, using variables from prior analysis of failures, and weigh the models towards the actual incidence of these failures in order to strengthen its predictive power.

• We work with our clients to conduct field tests. This helps to prove the efficacy of the solution and identify any process and/or organizational refinements needed for full solution deployment.

Our Approach

• **Pilot - 8-10 weeks:** We check the readiness of data content and quality, conduct diagnostic analysis to identify key signals for failure prediction, develop prediction model for key ATAs and develop a business case to ascertain the prediction accuracy of the developed model.

• **Trial - 10-12 weeks:** We demonstrate how the model works in an operational test setting, prove its accuracy, obtain feedback from users to refine the model and identify technological or organizational challenges. We then create a roadmap for solution implementation.

• **Solution - 4-6 weeks:** We deploy a *Microsoft Azure* based predictive maintenance solution.

Contact us

We’d love to speak to you about how predictive maintenance could increase the efficiency of your maintenance operations. Please contact us to see how we can help:

**Alex Mannella**
**Partner, Analytics**
(312) 298 6880
alex.mannella@pwc.com

**Rick Wysong**
**Director, Transportation & Logistics**
(415) 823 9419
richard.wysong@pwc.com

**Fred Cleveland**
**Managing Director, Transportation & Logistics**
(407) 835 7222
fred.e.cleveland@pwc.com

**Kumar Satyam**
**Director, Analytics**
(202) 414 1407
kumar.satyam@pwc.com

**Paul Dibble**
**Director, Transportation & Logistics**
(209) 398 3782
paul.dibble@pwc.com

**Sekhar Mallipeddi**
**Director, Transportation & Logistics**
(469) 951 9920
sekhar.mallipeddi@pwc.com

**Ajay Singh**
**Director, Analytics**
(312) 298 6643
ajay.singh@pwc.com

Our overview video can be found here
https://youtu.be/oCsXOj_tu0Q

Endnote

* based on PwC internal research

© 2017 PwC. All rights reserved. PwC refers to the US member firm or one of its subsidiaries or affiliates, and may sometimes refer to the PwC network. Each member firm is a separate legal entity. Please see www.pwc.com/structure for further details. 320922-2017 DG