# World-class service experience with predictive maintenance analytics

The client is a leading global aircraft design and manufacturing company.

## Customer Pain Points

• Need for continuous improvement in performance metrics for reliability and service management in a changing commercial aircraft industry serving a dynamic global operator base. [Operators/ carrier fleets, weather and operator-related delays, and scheduled and unscheduled maintenance]

• Need for re-imagination of current systems of acquiring, cleansing, harmonizing, and analyzing the enormous volume of aircraft sensor data across multiple fleets. [One aircraft has 100,000+ sensor; one aircraft engine alone has 40,000+sensors]

• Lag time created by manual processes used to analyze unstructured data from disparate sources. [Text files, aircraft logbook, maintainance notes used across supply chain, operations,maintainance]

## Challenges Resolved
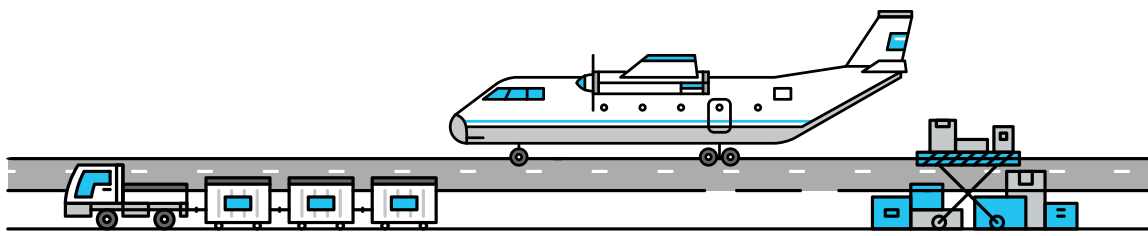
■ **Define and implement new business processes and performance metrics**
• Develop standards and practices aligned to new processes and technologies across a global organization
• Reimagine the current processes of data flow to enable real-time processing and analytics leading to 'fastest-path-to-answer'

■ **Build and deploy change the business strategy with minimal disruption to internal and external customers**
• Integrate new technologies with internal solutions across the customer base
• Re-train workforce to use advanced analytics

## How we did it

HCL adopted the Agile Analytics approach to achieve results quickly. The team selected three use cases applied to client pain points and completed three agile sprints making them navigate the entire life cycle multiple times.

| Data Management | Predictive models | Capability deployment support |
|---|---|---|
| Seamless data acquisition, cleansing and harmonization | Service event related data grouping | Methodology Consulting |
| Data correlation and analysis capability building | Combination of text and sensor data | Infrastructure architecture and implementation |

## IoT WoRKS Impact

■ **Improved performance metrics for reliability and service management**

• Established advanced analytics process to continuously improve the 97.9% reliability rating
• Reduced the defect identification process from weeks to hours

■ **Established Analytics-as-a-Service**
• Reduced time to insight from 30-90 days to one day
• 75% initial accuracy achieved in identifying service actions and related interruptions

■ **Established Data -a-Service to reduce time and cost of time delays in identifying service interruption factors**

■ **Establish Infrastructure-as -a-Service to reduce time and cost to acquire, process, and analyze data**

■ **Establish capability for new revenue generation services**
• Data Analytics-as-a-Service model
• Proactive predictive diagnostics for fast detection of potential failures and maintenance schedule mapping
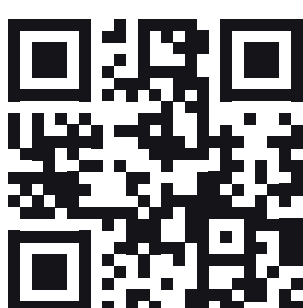
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