





Condition Monitoring& Big Data Analysis

Finbar Hughes, GE Digital

EuALF 2018 European Artificial Lift Forum 13-14 June 2018, AECC, Aberdeen, UK

June 27, 2018

Copyright 2018 Baker Hughes, a GE company, LLC ("BHGE"). All rights reserved. The information contained in this document is company confidential and proprietary property of BHGE and its affiliates. It is to be used only for the benefit of BHGE and may not be distributed, transmitted, reproduced, altered, or used for any purpose without the express written consent of BHGE.

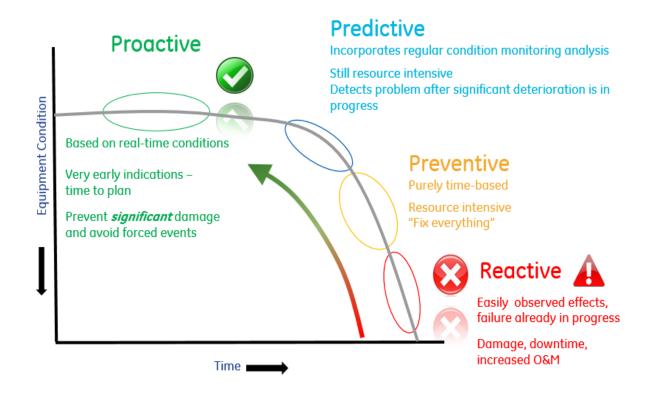
Contents

- Ultimate goal of predictive analytics
- How asset performance management is different from traditional techniques
- APM fundamentals
- GE Digital industrial managed services
- ESP case studies
- What's next

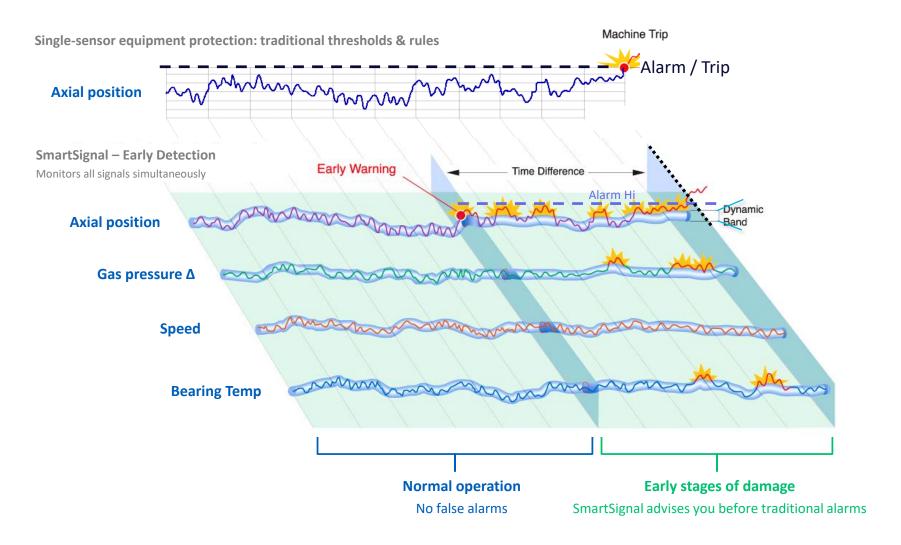
Ultimate goal of predictive analytics

PROACTIVE MAINTENANCE WITH APM RELIABILITY

Move up the curve, stay ahead of the game

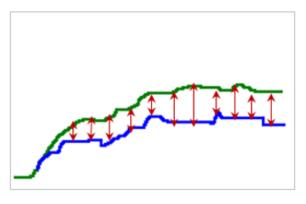


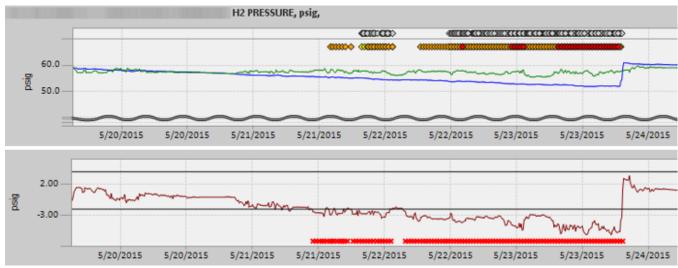
How APM reliability is different



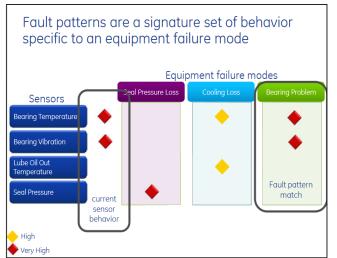
APM reliability fundamentals

- Green (estimate) is GOOD
- Blue (actual) is TRUE
- Red is RESIDUAL





APM reliability fundamentals



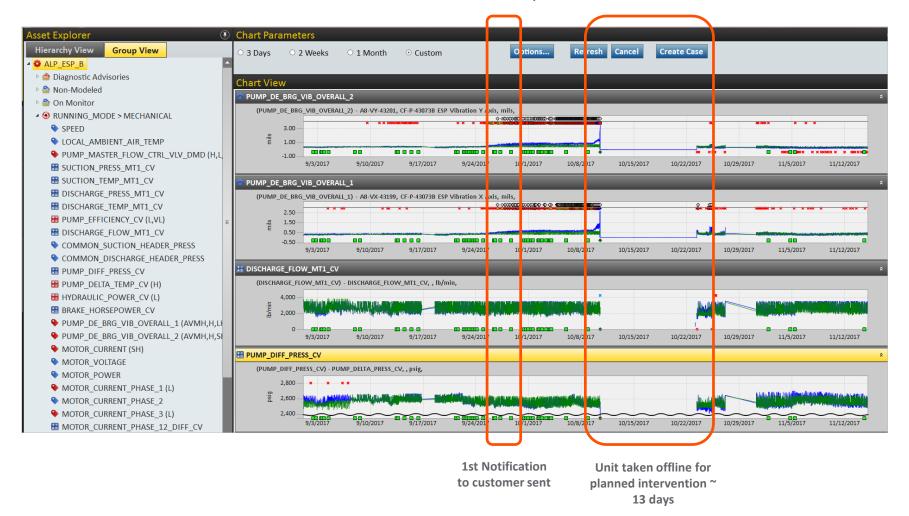


GE Digital industrial managed services



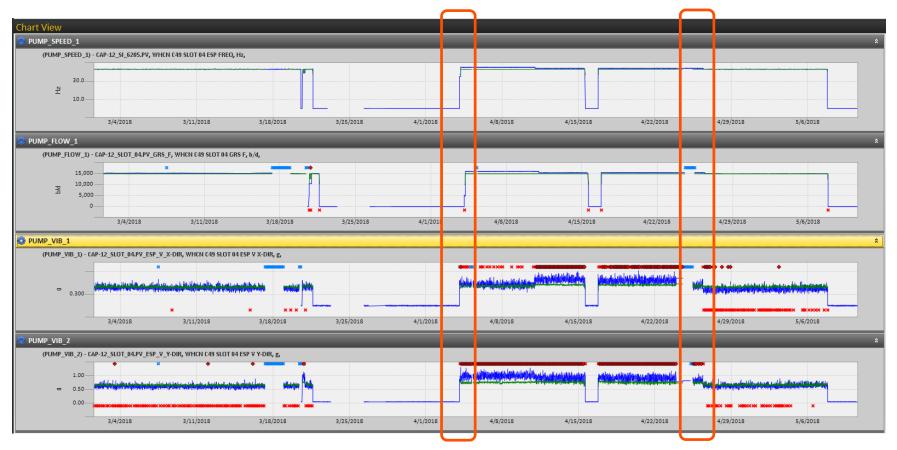
ESP case study

Customer mobilisation of replacement ESP



ESP case study

Customer starts to make adjustments to frequency and choke valve position



1st Notification to customer sent

Final adjustment takes frequency and flow back to model reducing vibration amplitude by 40%

What's next?

PREDIX ASSET PERFORMANCE MANAGEMENT

APM Health

- Health Manager
- Rounds
- Calibration Management

APM Reliability

- Reliability Analysis
- Digital Twin Blueprints
- Predictive Diagnostics
- Root Cause Analysis

APM Integrity

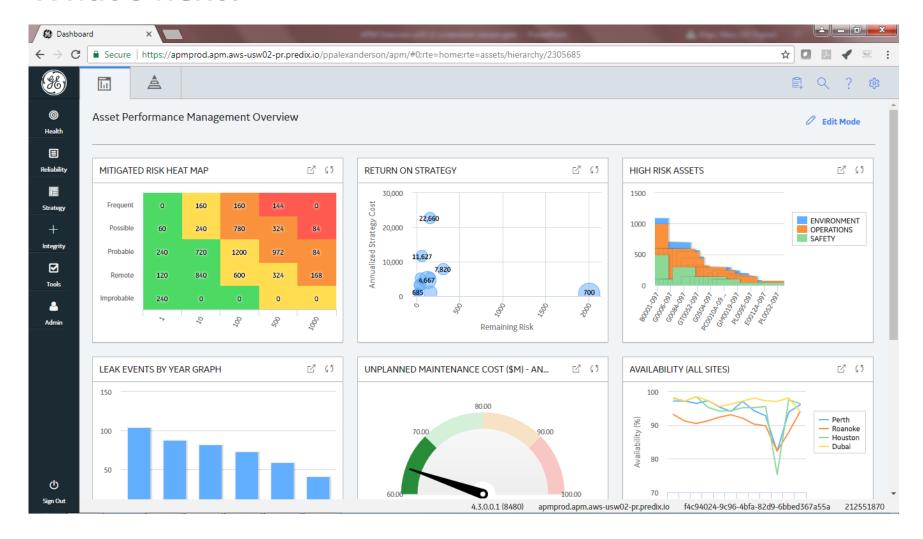
- Risk Based Inspection
- Inspection Management
- Thickness Monitoring
- Hazard Analysis
- Management of Change

APM Strategy

- Criticality Analysis
- Reliability Centered Maintenance
- Failure Mode and Effects Analysis
- Strategy Manager
- Lifecycle Cost Analysis

Predix Platform

What's next?



BAKER HUGHES a GE company

