Watson IoT™

IBM® Maximo Asset Health Insights

A true view of asset health, powered by cognitive analytics and IoT data

Understand the status of critical business assets, eliminate downtime and reduce maintenance cost with the power of Maximo and the Watson IoT Platform.

Most of the time, assets fail randomly. Very few failures follow an age-degradation pattern and many are not prevented with traditional time-based PM strategies. The best way to maintain assets is based on their relative health. Usage data or gauge values can provide part of the picture, but insight on past maintenance occurrences, weather incidents, the age of the asset and historical investment enhance the 'sensed conditions' with real insight.

Solution

Watson IoT helps businesses make smarter decisions about asset management by augmenting IoT data with powerful cognitive insights. Existing Maximo customers can now use Asset Health Insights to join condition assessment readings from assets to historic information from work and equipment records and other influences such as weather incidents. The resulting dashboard display of health scoring provides evidence on which to base operational decisions. New customers join a peer group of innovative businesses leveraging industry-specialist asset management software combined with powerful cognitive analytics.

Maximo Asset Health Insights represents a new way of maintaining equipment – one based not only on current condition-based readings coming from the equipment, but also informed by other influences like age, maintenance history, weather incidents and subcomponents with their own historical context. These data sources are analysed by the Watson IoT Platform which feeds results back to Maximo in the Asset Health Insights work centre, providing users an overall assessment and score of asset health.

As an extension to Maximo and with integration to the Watson IoT Platform, Maximo Asset Health Insights lets businesses capture knowledge about how asset health is assessed and then use these insights to perform maintenance only when needed.
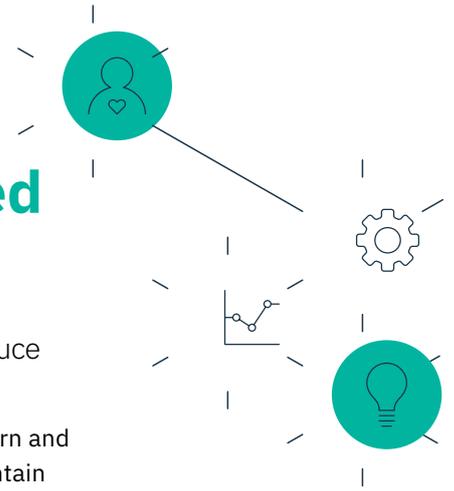
Challenges

Today, as much as half of your preventive maintenance investments have zero effect on uptime.[1] Studies indicate that time-based preventive maintenance practices do little to prevent failures:

– **30 percent** of preventive maintenance activities are carried out too frequently[2]

– **40 percent** of preventive maintenance costs are spent on assets with negligible effect on uptime[3]

– **45 percent** of all maintenance efforts are ineffective.[3]

Benefits

Get Full Visibility into Asset Status
Real-time sensor data, alerts from SCADA systems, historical trends, maintenance and failure history combine with environmental data to give you a complete picture of asset health, so you can make smarter decisions about repairing and replacing assets.

Reduce Maintenance Costs
Monitoring and analysing asset health data–both historical and real time–can help you reduce maintenance cost by up to 25 percent.[4] Maximo Asset Health Insights lets businesses plan asset maintenance based on actual condition rather than manufacturer recommendations, reducing the waste and the costs associated with ineffective maintenance practices.
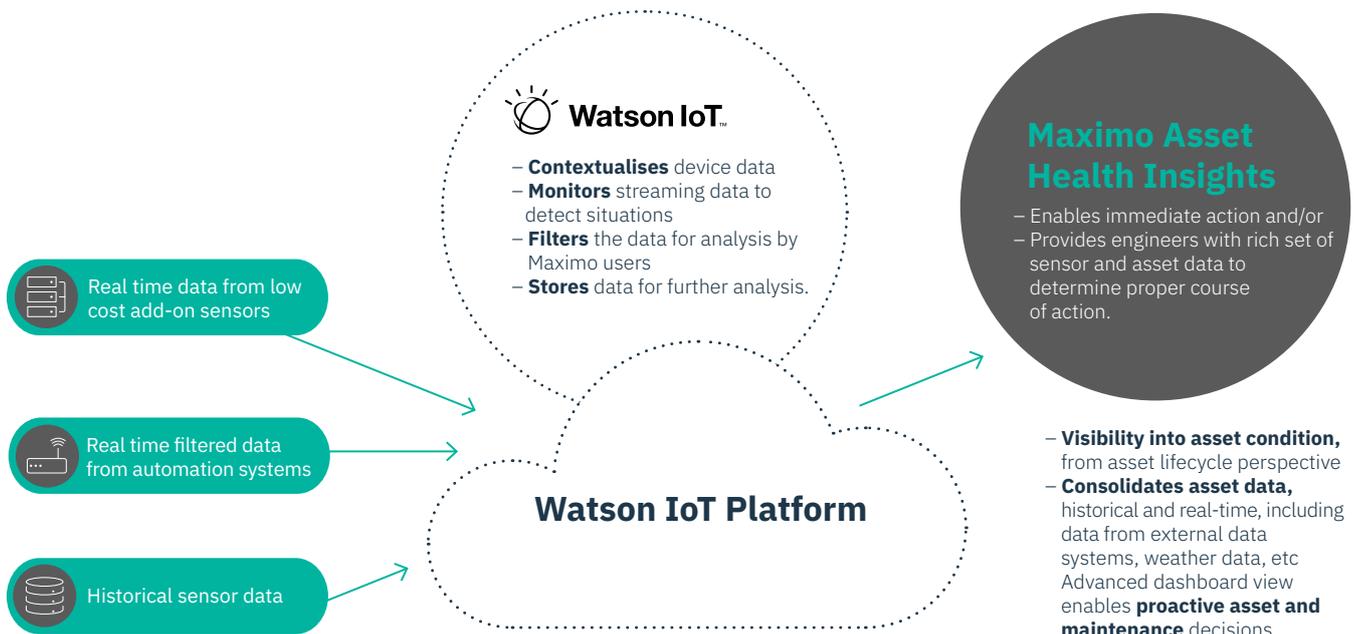
Avoid Unplanned Downtime
Prevent problems before they occur by alerting when conditions degrade and initiating appropriate responses to avoid failure. Instead of simply reacting to catastrophic failure, Asset Health Insights can let businesses schedule more of their maintenance activities, reducing overtime costs and the need for expensive spare parts on short notice.

Optimise Maintenance Schedules
Performing maintenance while the asset is working can reduce disruptions to operations. Optimising your preventive maintenance workload can reduce total preventive maintenance hours by 50 percent to 70 percent.[5]

Maximo and the Watson IoT Platform delivering value together

Watson IoT™

- **Contextualises** device data
- **Monitors** streaming data to detect situations
- **Filters** the data for analysis by Maximo users
- **Stores** data for further analysis.

Real time data from low cost add-on sensors

Real time filtered data from automation systems

Historical sensor data

Watson IoT Platform

Maximo Asset Health Insights

- Enables immediate action and/or
- Provides engineers with rich set of sensor and asset data to determine proper course of action.

- **Visibility into asset condition,** from asset lifecycle perspective
- **Consolidates asset data,** historical and real-time, including data from external data systems, weather data, etc Advanced dashboard view enables **proactive asset and maintenance** decisions.

How it Works

Streaming data from sensors is collected and sorted by its value to the operation. High-value data is sent to the platform making it possible for the operating algorithms to consume the new value and recalculate the dynamic meters representing how the machine is working. These meters are continually compared, in real time, to the optimal performance meters defined by your organisation based on historical readings.

The dynamic, streaming data and the performance signatures derived from it are combined with static information coming from Maximo about each of your assets including age, preventive maintenance history, weather events and more. Once Watson IoT Platform has analysed these myriad data sources, you'll see an overall assessment and score of asset health in your Asset Health Insights work centre, letting you take context-based actions to optimise preventive maintenance.

Learn More About Maximo Asset Health Insights and Watson IoT Platform

Watch videos, read case studies, explore demos and more at our website: ibm.com/internet-of-things/iot-solutions/asset-management/

[1] Maintenance & Reliability Best Practices Second Edition, published by Industrial Press, NY, page 162
[2] T.A. Cook, Maintenance Efficiency Report 2013, August 2013.
http://uk.tacook.com/fileadmin/files/3_Studies/Studies/2013/T.A._Cook_Maintenance_Efficiency_Report_2013_En.pdf?tracked=1
[3] Oniqua Enterprise Analytics, Reducing the Cost of Preventive Maintenance, http://www.plant-maintenance.com/articles/PMCostReduction.pdf
[4] Source: Fortune http://fortune.com/2015/07/22/mckinsey-internet-of-things/
[5] IDCON Inc., Optimise your Preventive Maintenance, http://www.idcon.com/resource-library/articles/preventive-maintenance/528-optimise-preventive-maintenance.html