



# Delivering the Future of IIoT Now

## REFINERY *of the* FUTURE

### Background

The global petrochemical industry is intensely competitive. Companies are constantly seeking ways to gain an edge. Yet there are few activities as demanding as operating a refinery with mission-critical concerns ranging from pump condition to personnel safety. The health of the workforce is of utmost concern, and variances in pump performance can impact the bottom line. Refinery operators are on the hunt for advanced systems that generate real-time insights, provide full automation and oversight, and reduce the risk of human error.

### Edge Innovations and Expert Integration

Texas toll manufacturer Texmark Chemicals is a crucial link in the petroleum product supply chain, and because it works with regulated hazardous materials, safety is a top priority. So Texmark turned to Hewlett Packard Enterprise (HPE), CBT and an industry leading Partner Consortium to build a Refinery of the Future (RotF).

Texmark's vision hinges on the promise of the Industrial Internet of Things (IIoT): sensed devices combined with advanced analytics to generate insights, increase efficiency, and reduce risks. More than a few companies claim they can deliver an IIoT project like this, but only CBT, HPE, and the RotF Partner Consortium have the track record to move beyond the proof-of-concept phase and deliver operational solutions in a live, petrochemical production environment like Texmark Chemicals.

CBT and HPE are paving the way to the RotF with cutting-edge analytics software and sensed devices. Currently, four solutions have been deployed to achieve next-generation innovation, efficiency, and safety. The resulting system combs through data and reveals how the entire plant is interconnected. If any part falls out of line, it is flagged for intervention. Each of these solutions uses the unique skills and technologies of a number of partners, supported by HPE's edge platforms and expert integration by CBT.



**Connected  
Worker**



**Asset Integrity  
Management**



**Video as  
a Sensor**



**Condition Monitoring  
& Predictive Maintenance**

# Return on Investment: RoIF Solutions



90

Percent reduction in time to file necessary compliance evidence



## **Solution: Connected Worker**

Handsfree wearable devices enable key functionalities (picture taking, audio inscription, remote transmission, instant electronic filing, etc.) via voice command.

75

Percent reduction in time to assess asset process condition



## **Solution: Connected Worker**

Centralized data repository queries and locates relevant asset info. Asset Integrity Software analyzes asset health and assigns red/yellow/green status.

75

Percent less time to identify asset malfunctions



## **Solution: Asset Integrity Management**

Asset Integrity Software retrieves documents digitally (manuals, asset drawings, inspection reports, etc.), shows a 3D rotational view of assets and obtains risk-based inspection graphs.

89

Percent decrease in standard pump inspection time



## **Solution: Condition Monitoring & Predictive Maintenance**

Moves inspection processes from the field to the control room, optimizing maintenance routes to focus resources on critical repairs.



## How We Work



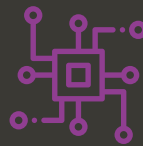
### **Start Lean**

Reduce risk & uncertainty before you invest, implement and integrate into your operations



### **Be Agile**

Employ agile-led thinking to help shape future experiences & innovate at speed



### **Drive with Data**

Data insights, use cases, user interviews & testing to make informed product decisions



### **Build for Scale**

Build an innovation & validation engine that anticipates enterprise scale & complexity