



# Asset Health for Transmission & Distribution

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# The asset performance challenges



**57%**



**\$350B**



**42 yrs**



**26+ B**



**70%**



**36%**

# Why do customers need Asset Health?

Aging infrastructure

Information challenges

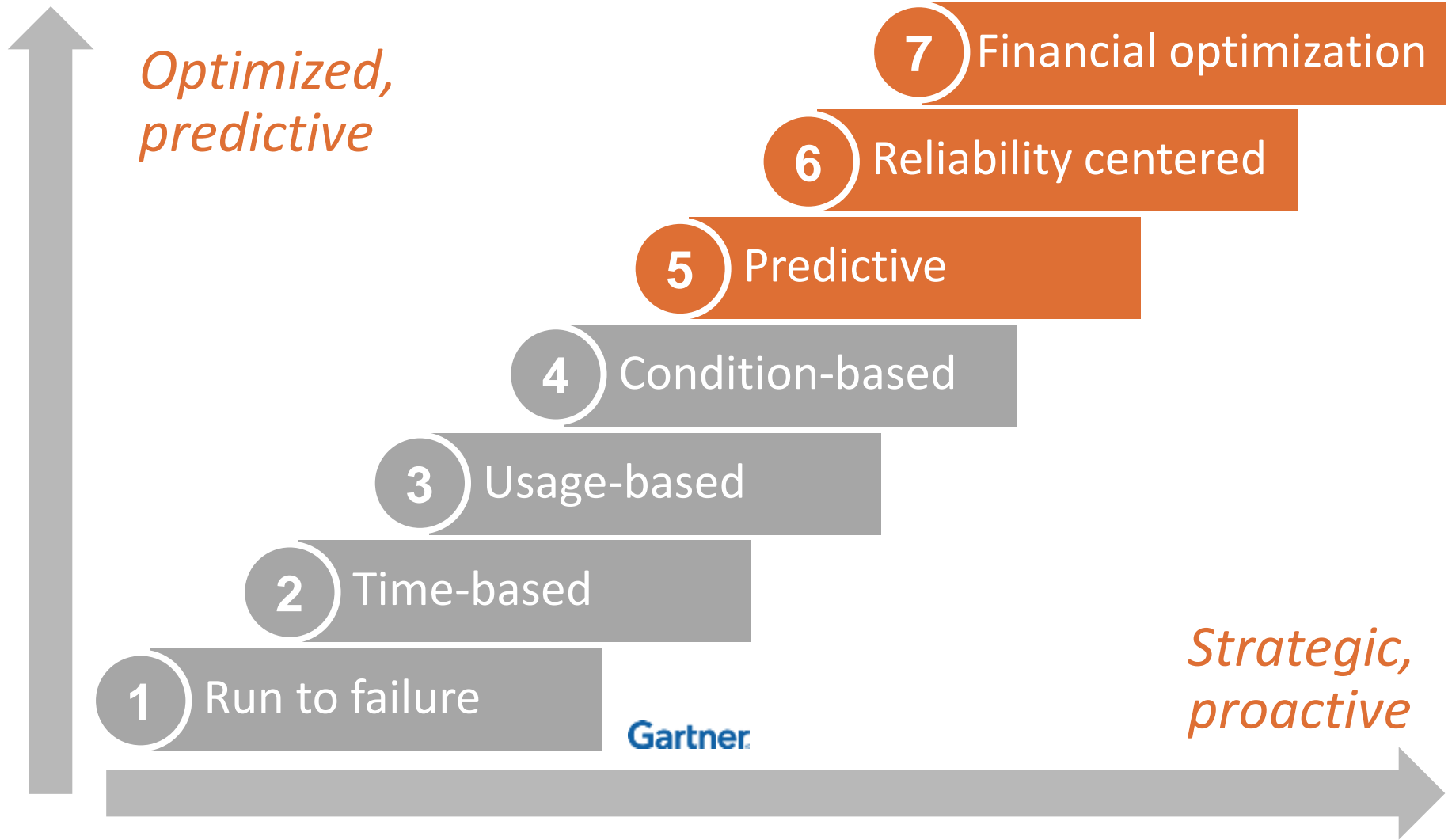
Aging workforce

Pressure for higher reliability

Defer or control capital expense

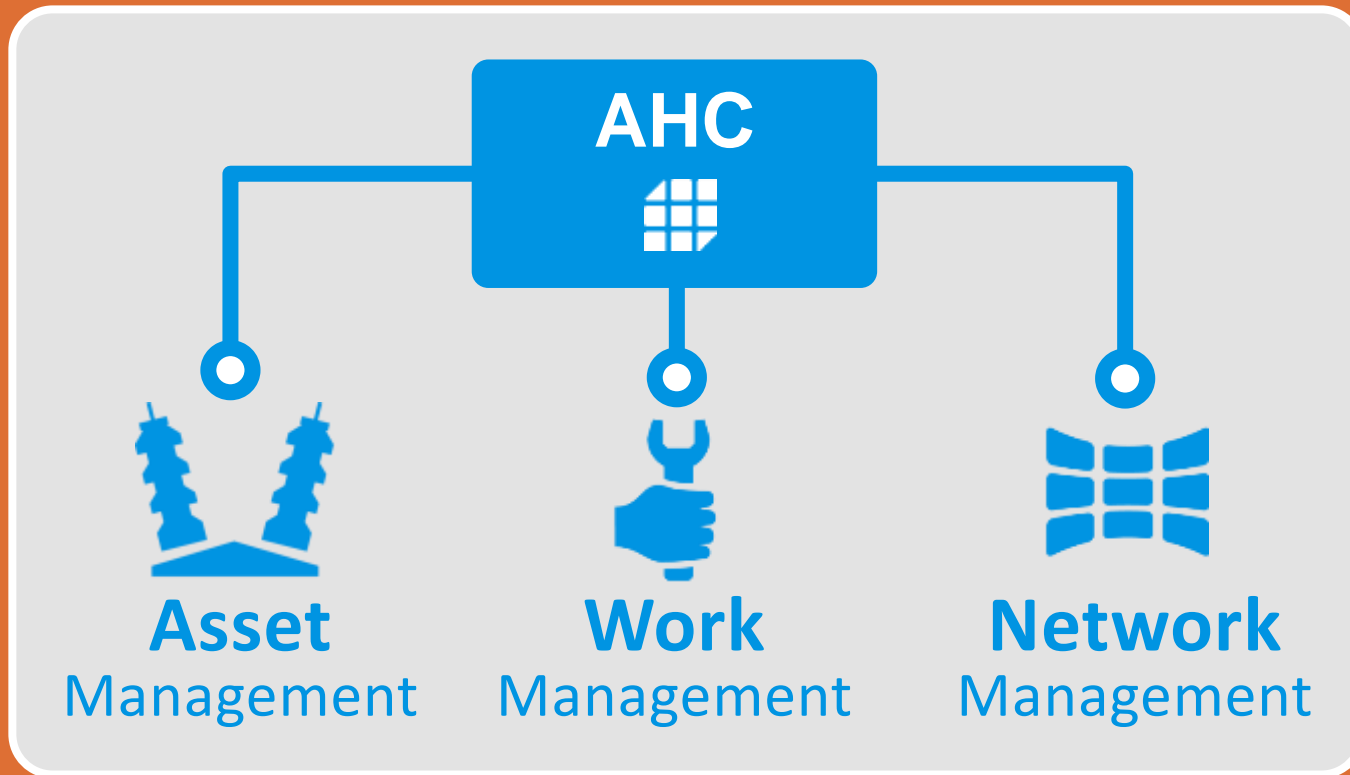
Flat O&M budgets

# Ventyx view of asset maturity

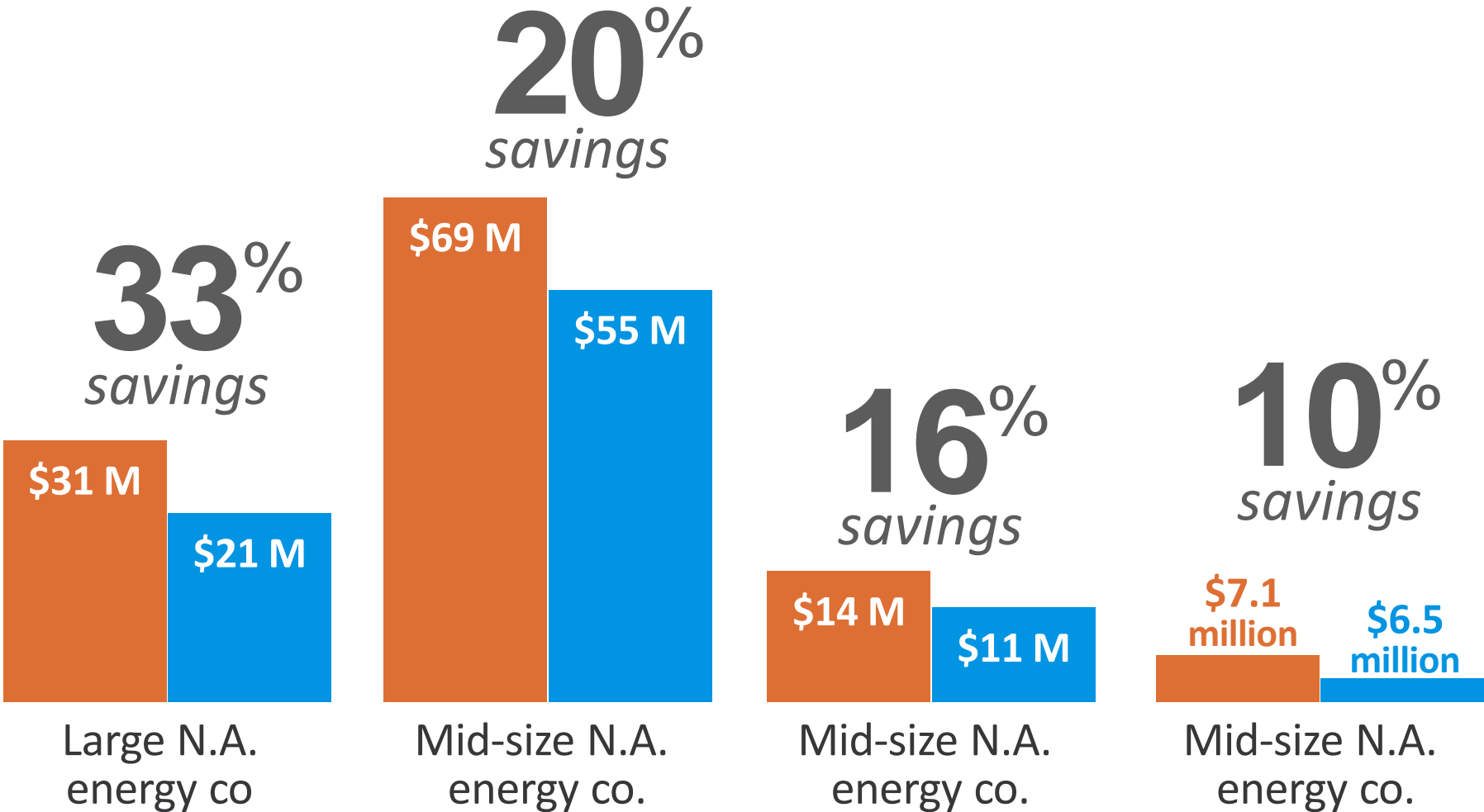


# A holistic approach to asset health

## ASSET PERFORMANCE MANAGEMENT



# Optimal maintenance yields significant savings



# Predictive analytics for asset performance

1

## Collect

Unified view of all asset data in proven analytics platform

Multi-manufacturer equipment data from condition monitoring and historians



Others

Data from enterprise systems (EAM, MWFM, asset reliability) and market



Others

2

## Predict

Algorithms codify experience to predict and prioritize risk

Mathematical algorithms codify years of industry experience to predict and prioritize risk



Client

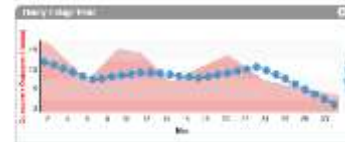


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## Review

Industry-standard approaches help confirm approach

Industry-standard approaches such as IEEE level comparison, historical data trending & fleet comparisons enable expert review and confirmation



4

## Act

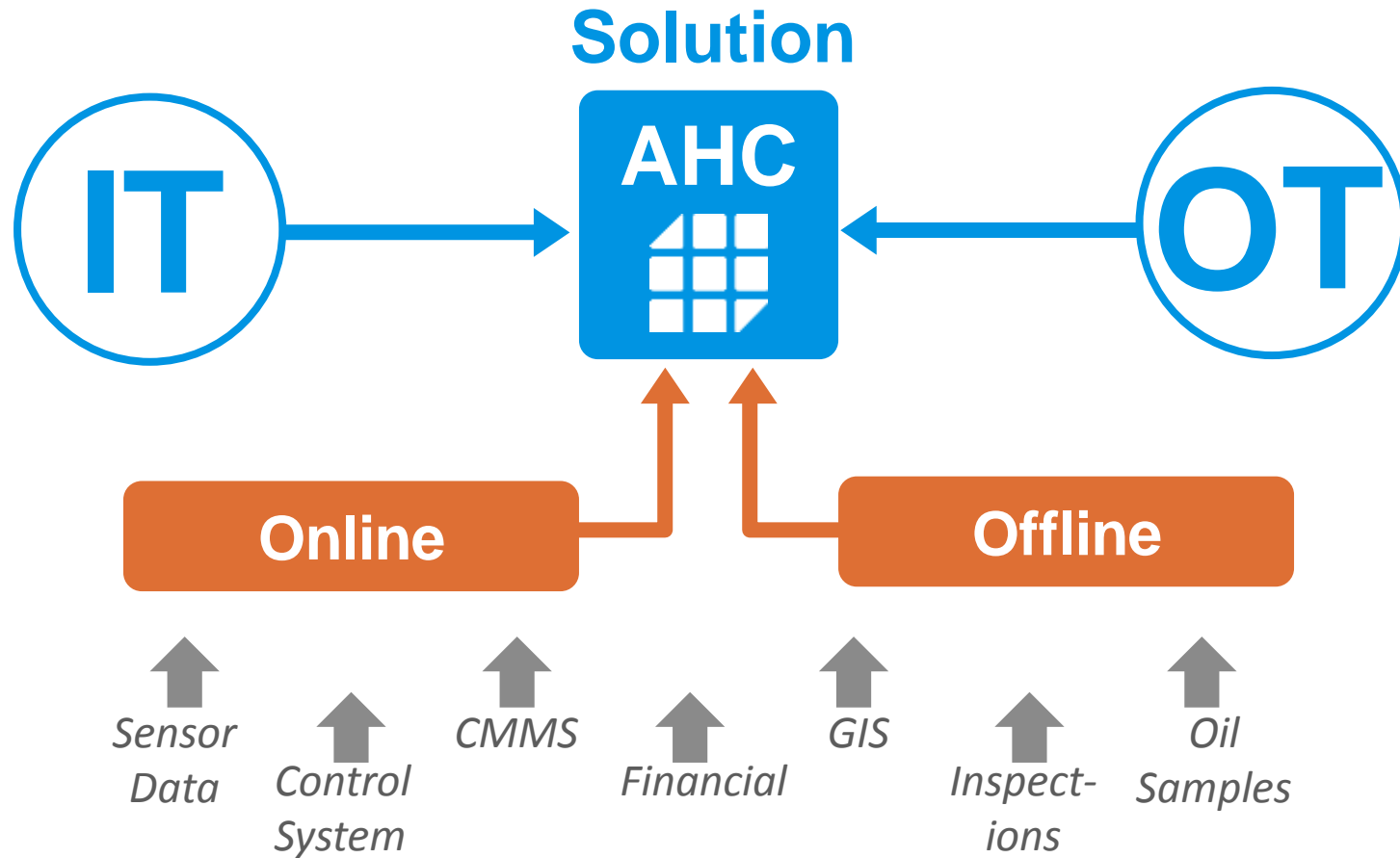
Holistic Asset Performance Management

Take action by integrating insights from predictive analytics into other Asset Performance Management and control software



1

# Collect intelligence

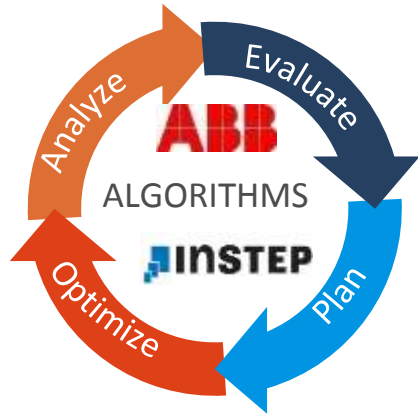




# Predict Failure

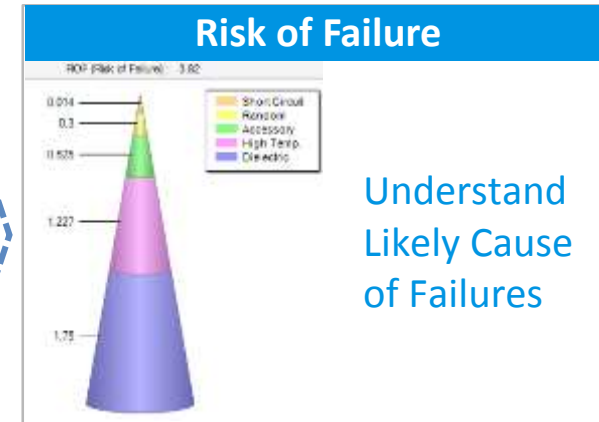
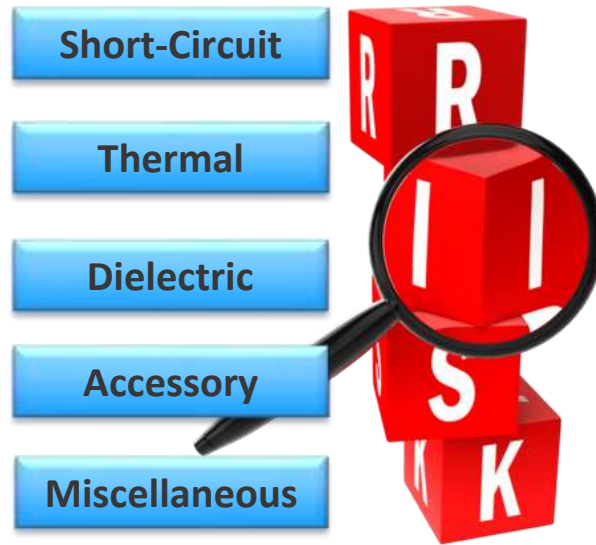
## Leverage Deep ABB and Partner Expertise

### 2 PREDICT



Industry expertise packaged in algorithms provide additional insights

**ABB** **INSTEP**  
ALGORITHMS



# Actionable Intelligence and Insight Applied

3

## REVIEW

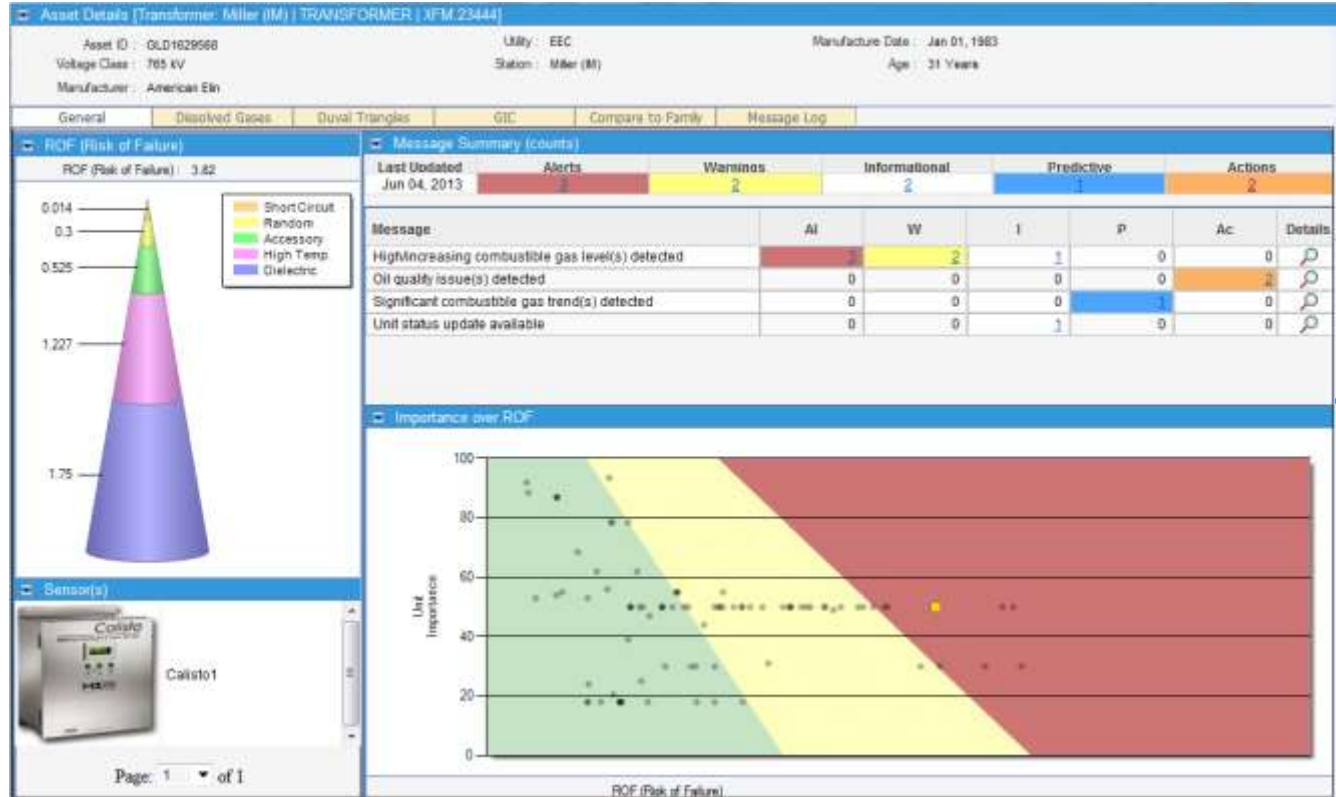
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INSIGHT

Provide visibility and increased awareness of potential failures.

Leverage trusted industry methodologies (IEEE, Duval Triangles, etc.)



Message Type	Detailed Message
Action	IMPORTANT: Combustible gases may be associated with serious issues inside the transformer. All precautions must be taken while investigating sensor out
Action	Several dissolved combustible gases have reached high or critical levels. Recommend minimizing load on this unit until issues can be addressed

# Actionable Intelligence and Insight Applied

4

ACT

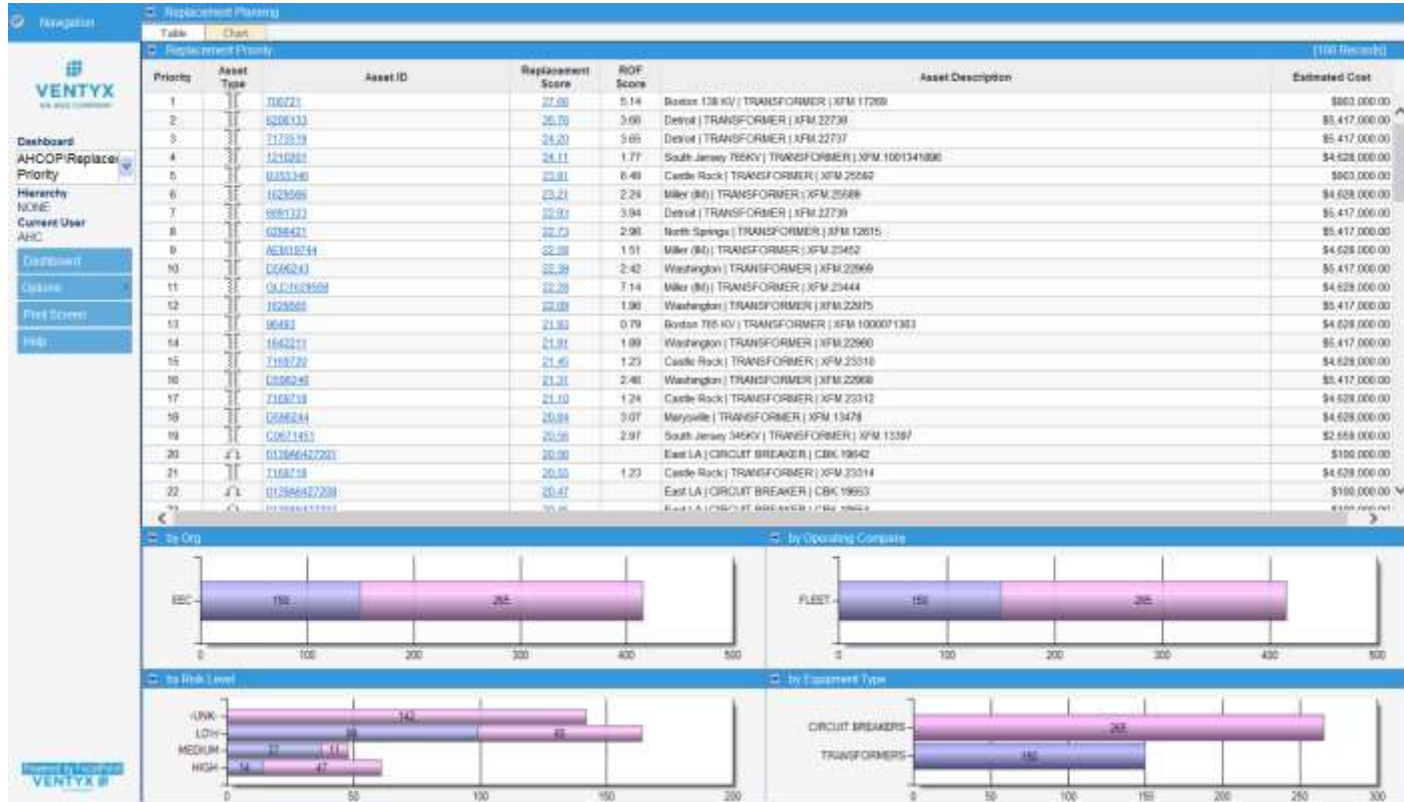
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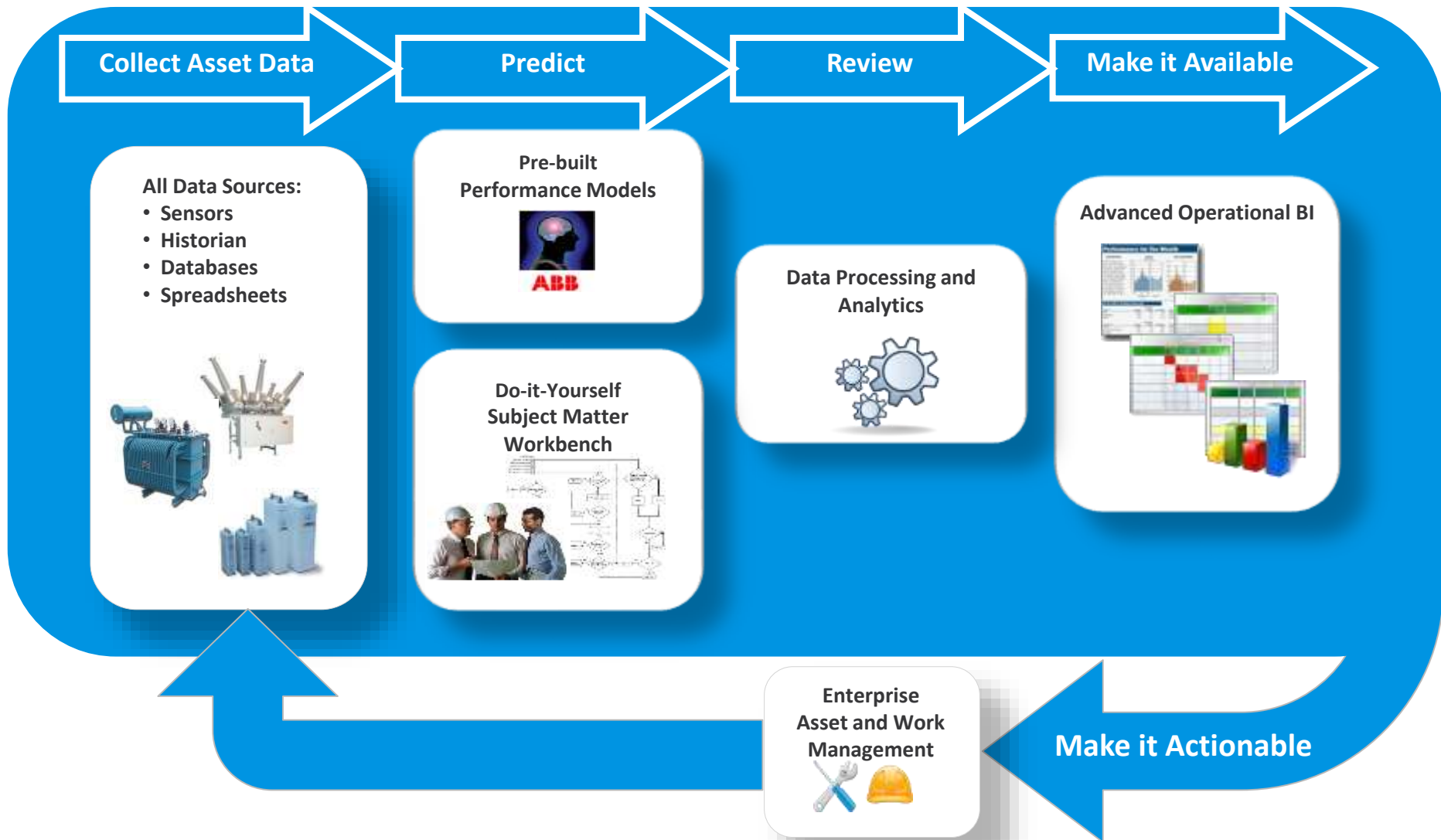
ACTION

Apply Predictive Maintenance Strategy to Asset Portfolio

Pass Actions directly to Enterprise Asset Management Systems



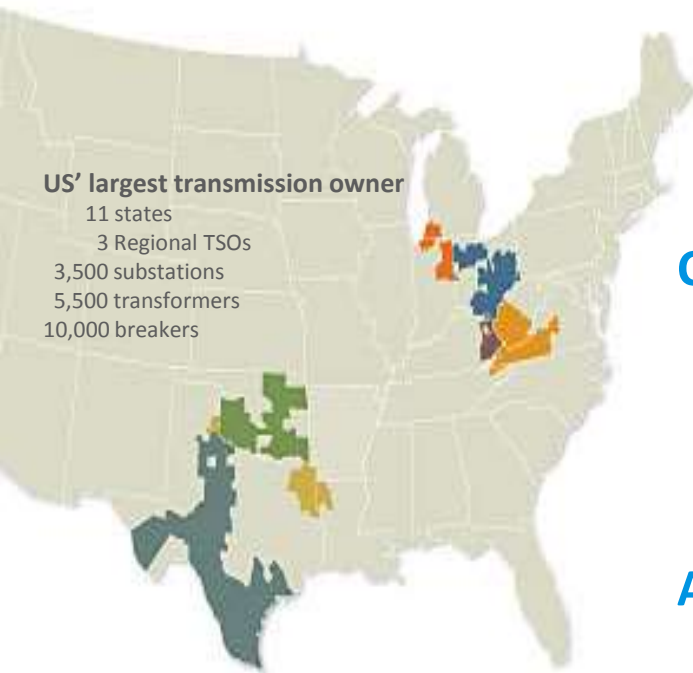
# Asset Health Center – Feedback and Analysis



# Case Study: American Electric Power



**Situation:** 33% of AEP transformers > 50yrs old  
18% > 60yrs old



**Challenge:** Prevent failures, optimize maintenance and support asset renewal prioritization

**Answer:** Ventyx Asset Health Center solution across all AEP transformers, breakers and substation batteries maintained by the transmission business unit



# Case Study

## Challenges

- Aging infrastructure
- Control O&M spend
- Reduce asset failures
- Prioritize asset renewals

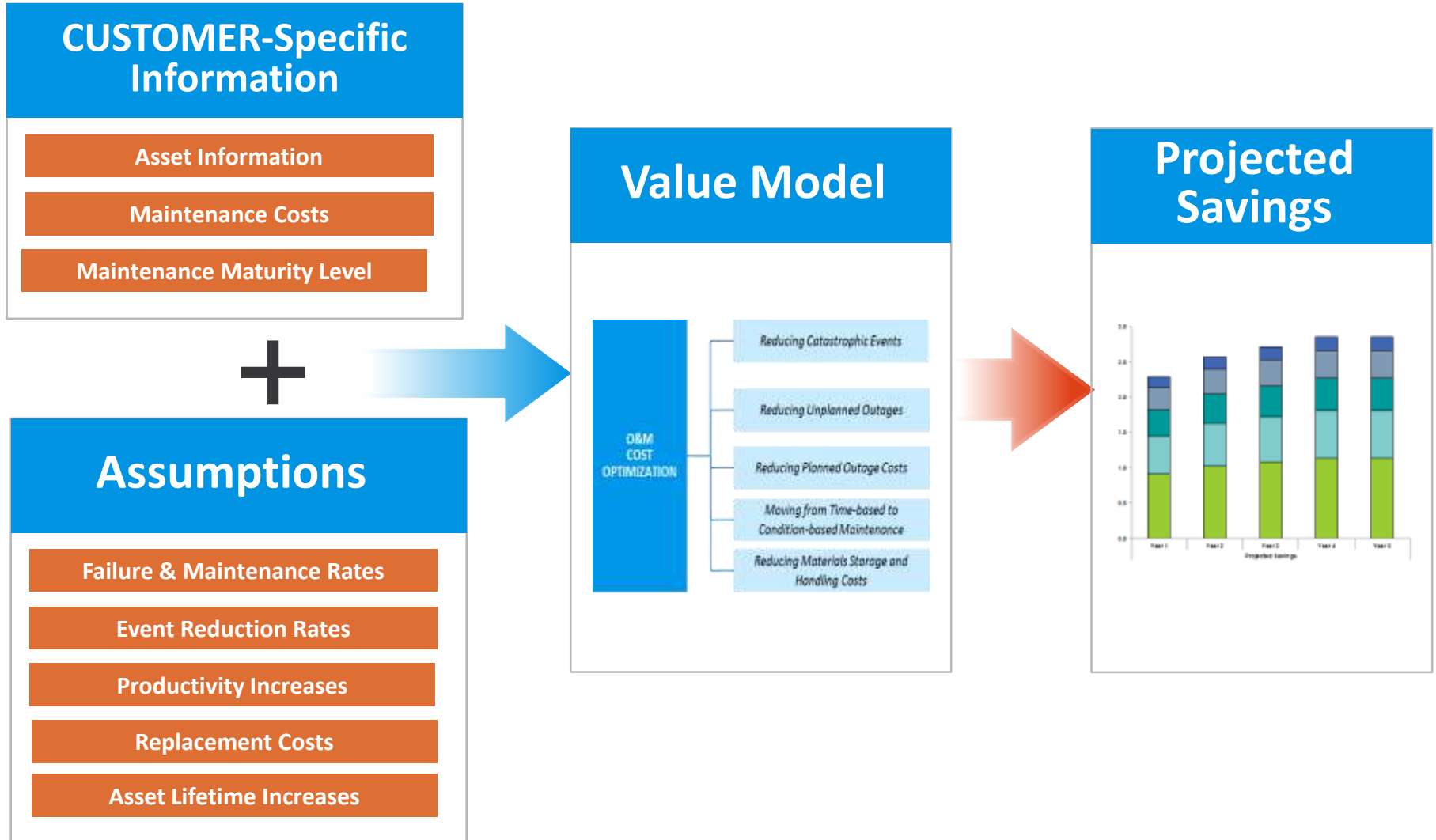
## Solution



## Benefits/results

- Optimized O&M spend
- Centrally-focused intelligence
- Predictive insights = prioritize response
- Informed repair / replace decisions
- Codify staff expertise
- No incremental platform costs

# Asset Health Value Modelling Process



# Key Benefits of Asset Health Center

Transform real-time and historical asset data into strategic insights on the health of your mission critical assets

## Top Benefits

Asset Condition  
Data Availability



Optimize use of  
Local Knowledge



Early Warning  
on Failures



Improve Asset  
Utilization



Condition-based  
Maintenance



## ABB Ventyx Can Help

Consolidate data on assets and their condition and make available to key stakeholders in timely manner

Deployment of advanced decision support tools

Provide visibility and increased awareness of potential failures to support operational decision making

Information availability enables maintenance to be delayed on healthy assets

Provide a path and strategy to applying condition-based maintenance strategy to asset portfolio



# Questions

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# Asset Health Center