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The Future of Machine Health Diagnosis Using Pi-Based Condition Monitoring

Terry Siggins, Managing Director, Sales and Marketing | October 25th 2023



Brüel & Kjær Vibro

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ISETPPOINT®

The Future of Machine Health Diagnosis using AVEVA™ PI System™ Based Condition Monitoring

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How healthy do you believe you are?

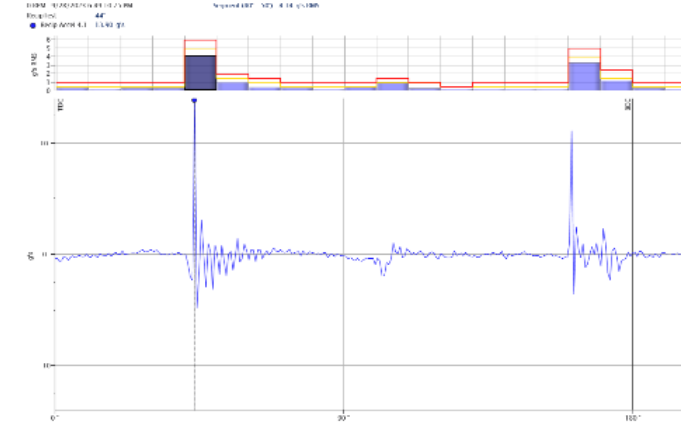
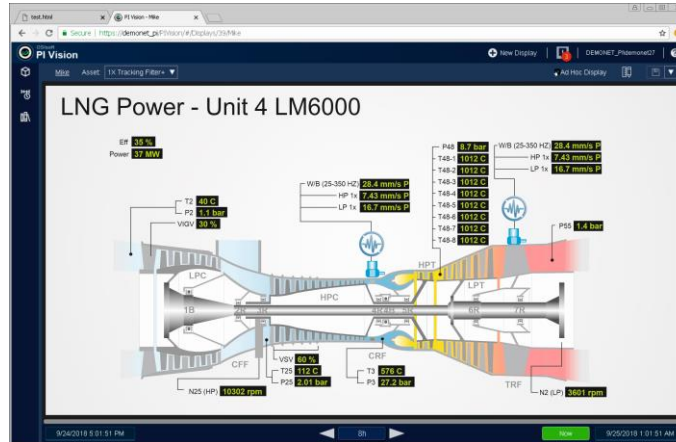
Most of us only visit a doctor when we have symptoms of ill health

20-45%*
of heart attacks
are “silent”

*

*Source: Wake Forest Baptist Medical Center Study 2023

Are you treating your machines like you treat your health?



Most predictive maintenance programs fail because of complexity!

Only **30%** *

of manufacturing companies know
the exact condition of their assets

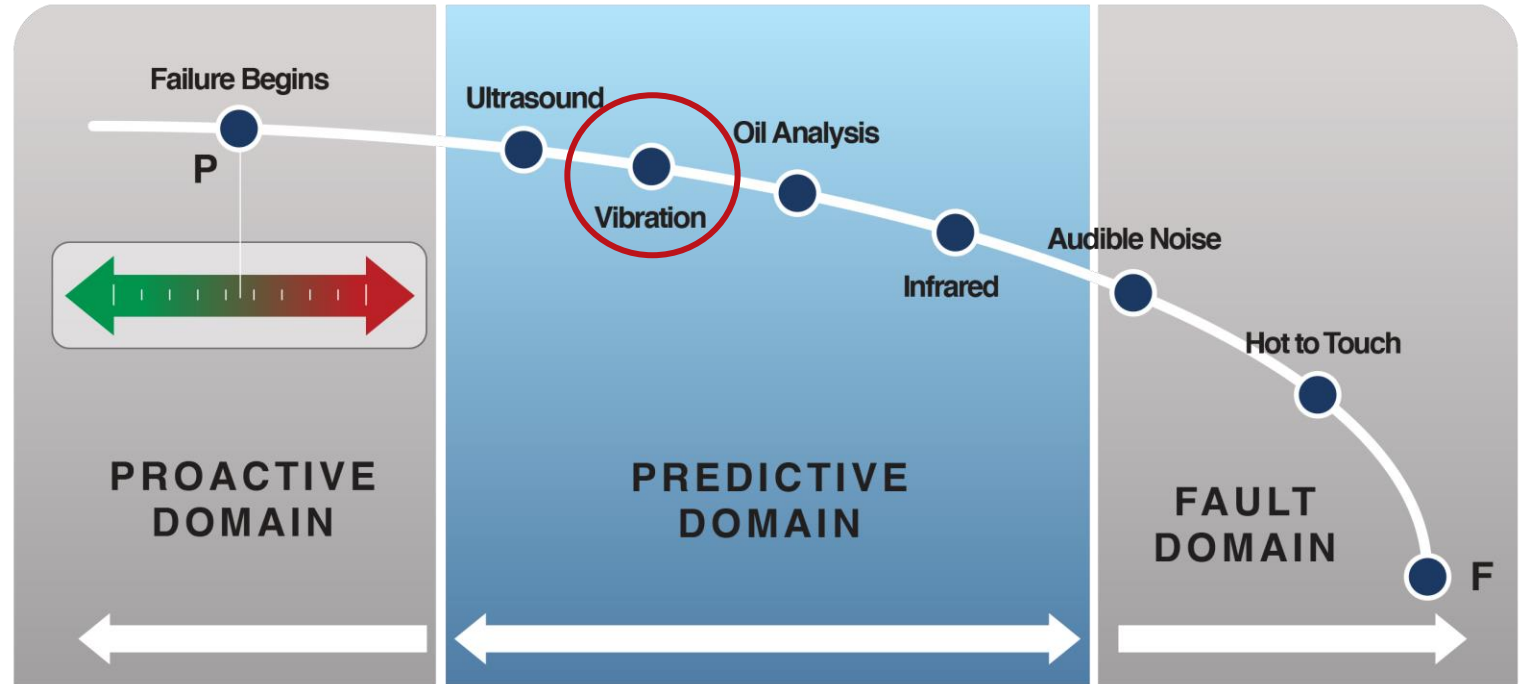
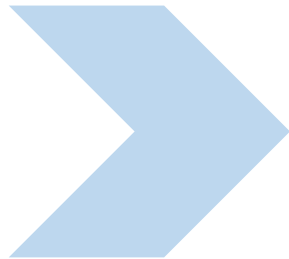
One-hour breakdown of a
machine can cost a company up

to **\$260,000** *

*Source: Vanson Bourne &ServiceMax 2021

Benefits of Condition Monitoring – through Vibration

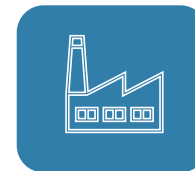
CONDITION MONITORING
FROM DETECTION TO DIAGNOSIS



I-P-F curve showing early indicators of potential bearing problems on rotating equipment. Source: Adrian Messer



Eliminate Safety Risks



Extend Asset Life



Increase Uptime

Do you listen to professional advice?



Just tell me – how long have I got and what's the next step?



**The are approx. 25, 000
Cardiologists in the U.S.A.**

**There are < 25, 000
CAT IV Vibration
Analysts worldwide**

Brüel & Kjær Vibro – The Company

A pioneer in asset optimization and protection solutions for rotating equipment

Founded in
1942

Workforce of
213
employees

Network of
76
channel partners

2

main manufacturing /
logistics facilities

3

diagnostic and surveillance
expertise locations

5

commercial offices
worldwide

With over

35,000

wind turbines instrumented

With over

800

hydro turbines instrumented

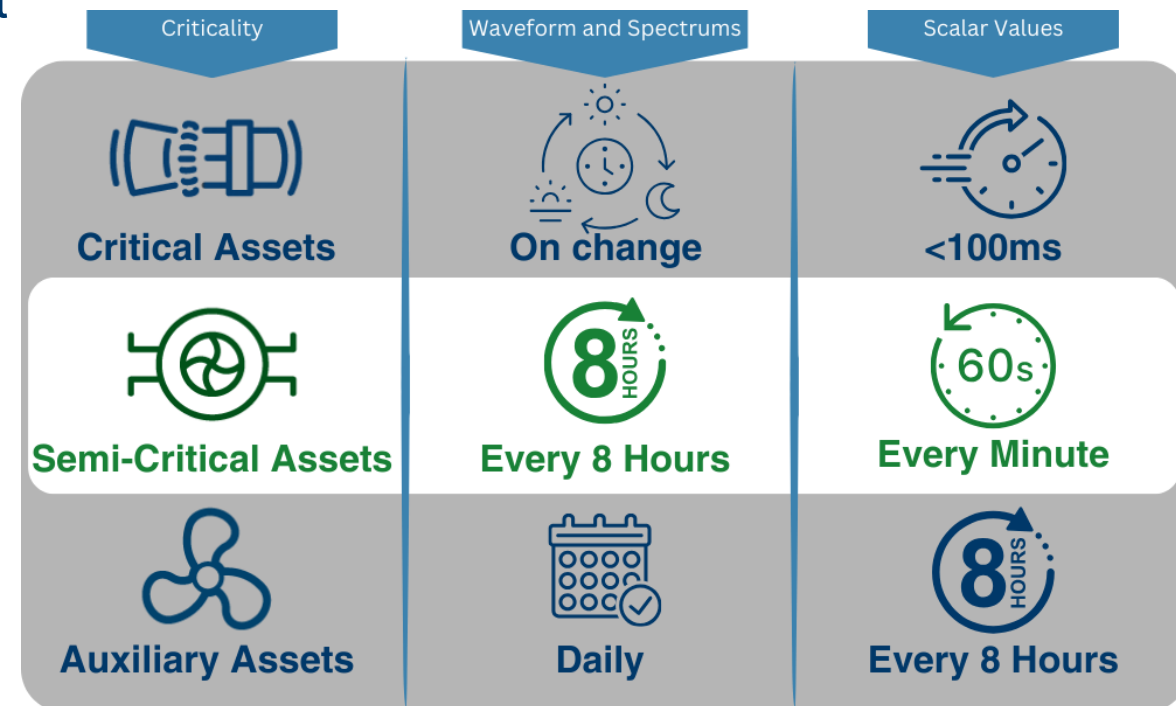
With over

10,000

hydrocarbon-processing
machines instrumented

What is needed to create actionable insights?

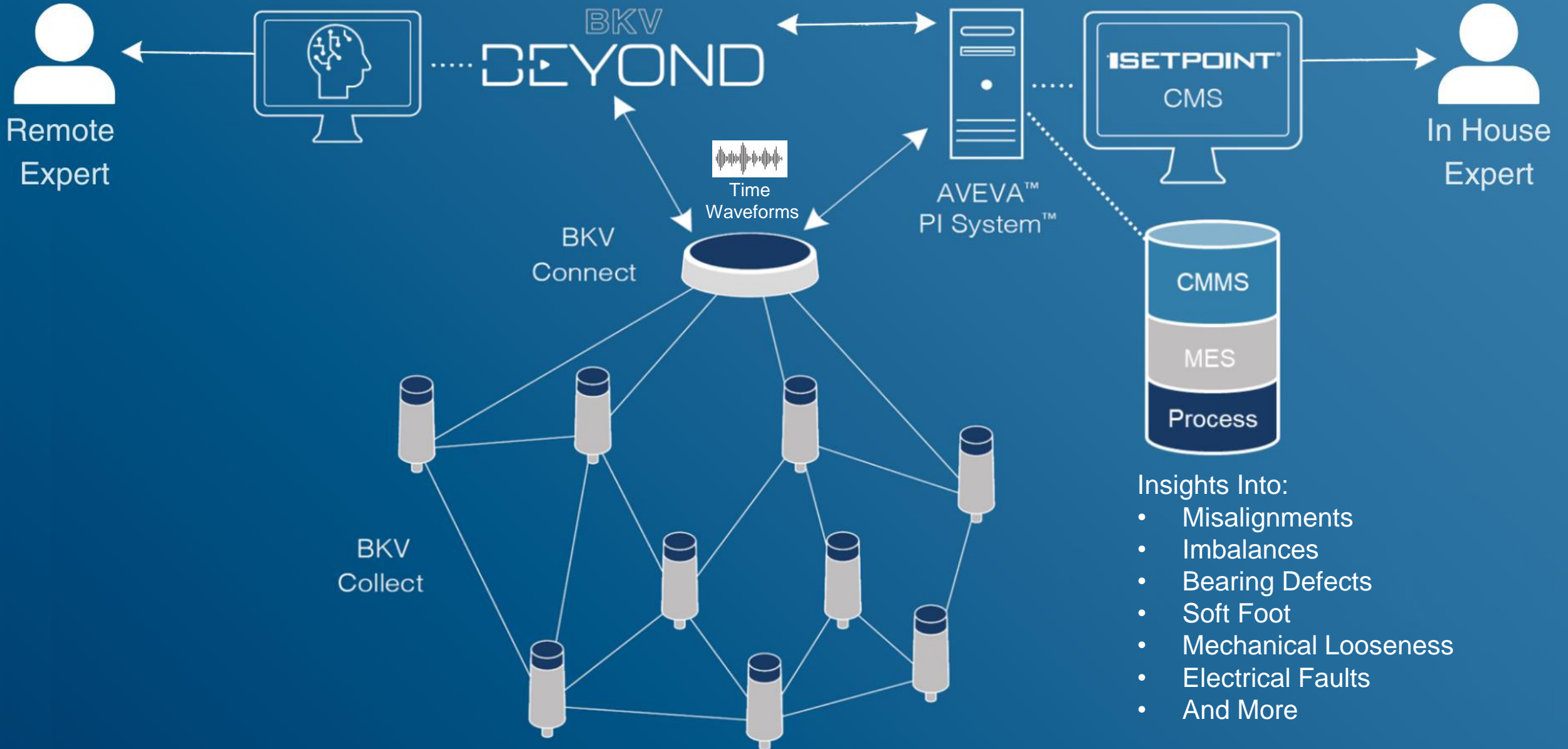
- **Criticality Analysis** - Collect data at the correct frequency, based on expected faults and criticality.
- **Filter Measurements** - Only collect meaningful data to identify specific conditions and complex issues
- **Provide Context** – Avoid creating data silos (using AVEVA™ PI System™) so that data can be viewed in context with other plant data to build actionable insights
- **AI versus HI** – Although AI can look for patterns, human expertise still has a role to play





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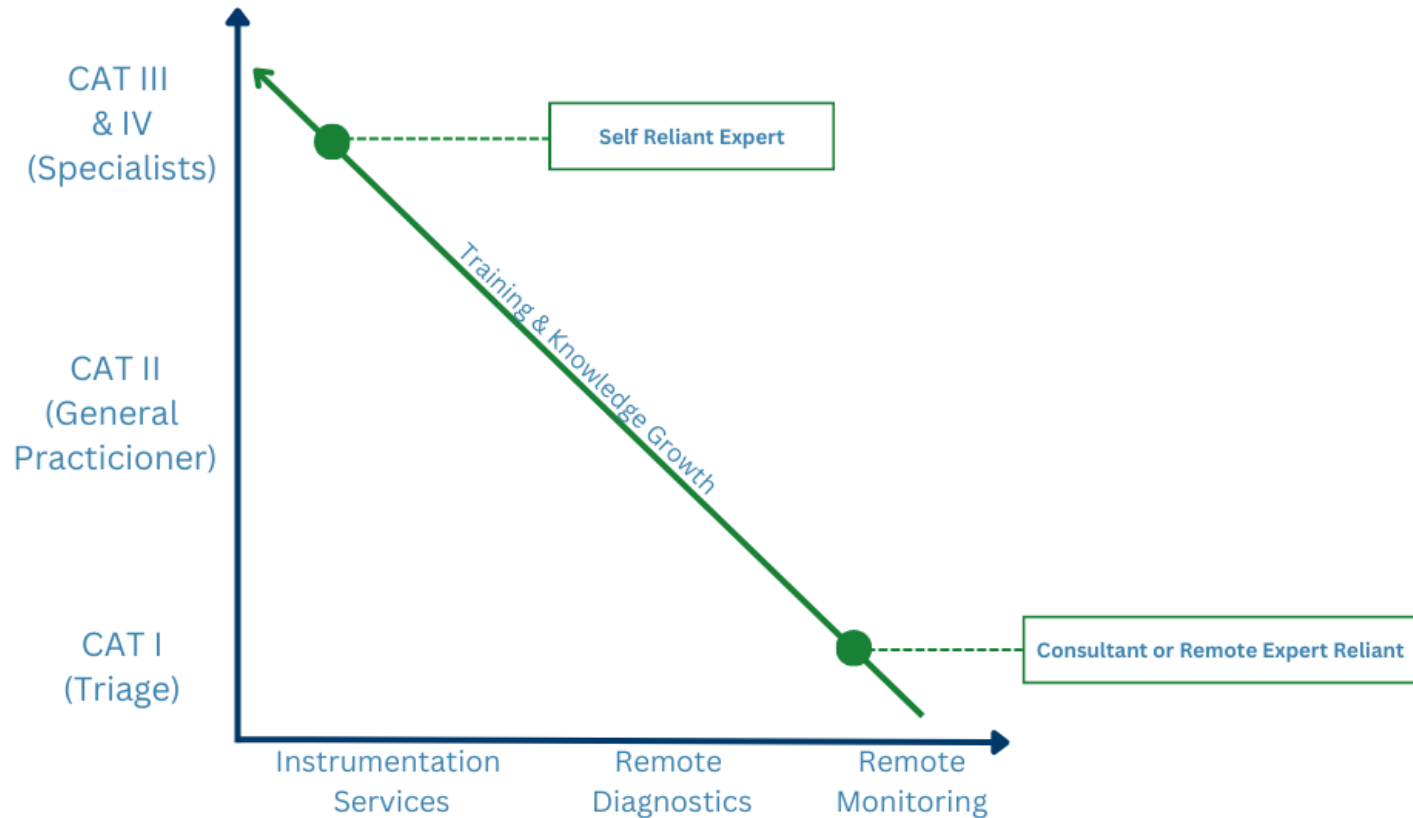


Who should deliver machine healthcare?

Choose your monitoring strategy using the AVEVA™ PI System™

- Build in-house expertise
- Outsource expertise and reap the benefits of AI/ML
- Use a “hybrid” approach

Migrate from External CMS to Self-reliance as experience and expertise grows





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When your production depends on it, would you be comfortable with exploratory surgery, or would you like to know exactly what needs to be fixed?



Questions?

If you have a health challenge that you'd like to discuss, please come to our stand at **Booth #36**.

If I can't diagnose it personally, with me today are some of the finest machine medics that money can buy.



Thank you for listening.