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

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

*Source: American College of Cardiology 2020
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.
Insights Into:
- Misalignments
- Imbalances
- Bearing Defects
- Soft Foot
- Mechanical Looseness
- Electrical Faults
- And More
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
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.