

# PI tastes better with machinery health data inside



A look at how machinery health  
monitoring can improve your business



# Glatfelter has asked KCF Technologies to help proactively reduce maintenance and operations cost using continuous machinery health monitoring

- KCF Technologies Inc. is working with many companies to implement continuous machinery health monitoring in their PI System
- The Glatfelter paper company is an early adopter of this technology and have already experienced a positive ROI



G L A T F E L T E R



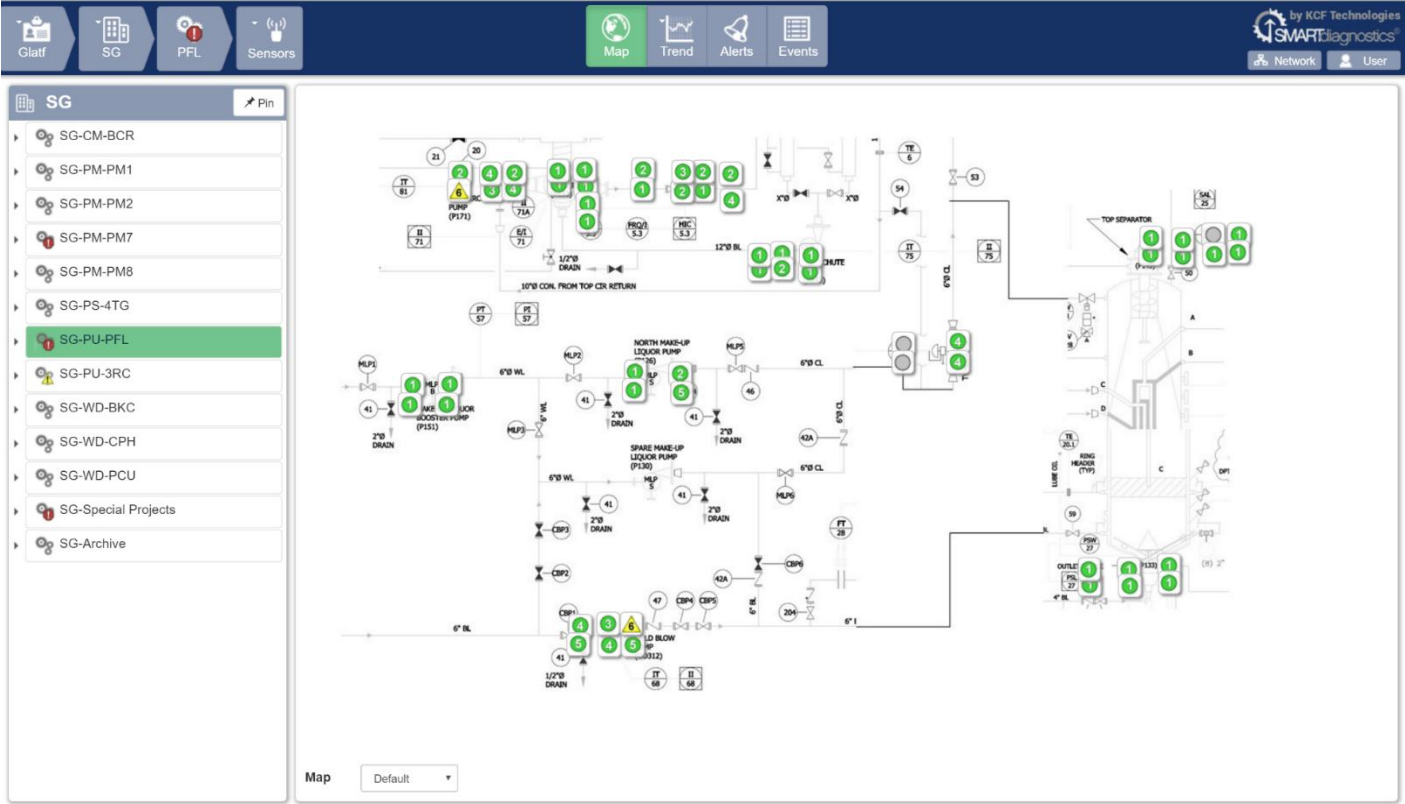
# The problem: Pulp digester clogging

- One of the more critical, and of course complex and temperamental systems, is a continuous pulp digester
- The digester breaks down wood chips into pulp
- If the digester becomes clogged with a plug in the outlet, the entire system needs to be drained
- The downtime and clean up could come at a cost of around a million dollars
- Even minor plugs can cause quality issues that are difficult to track and resolve

## THE PROBLEM

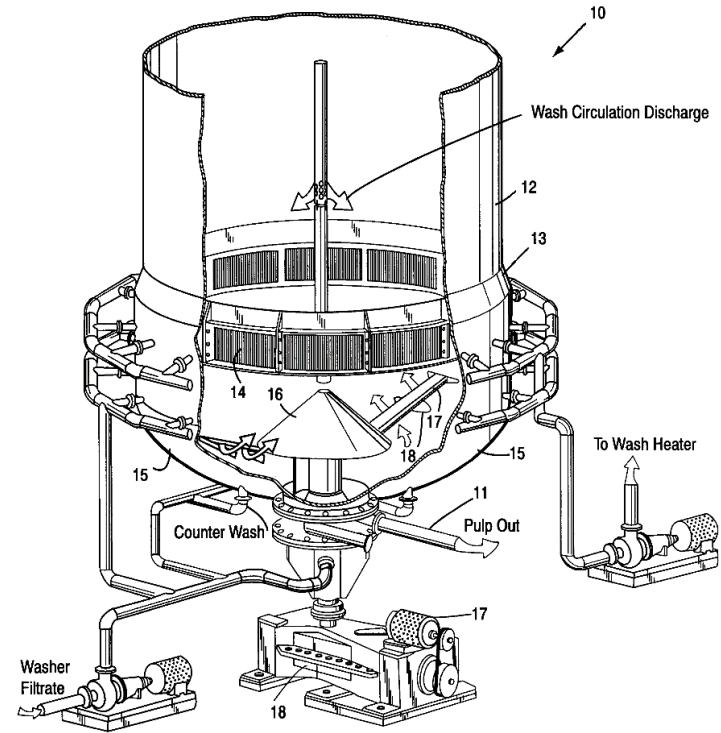


# Complex System: Pumps, Motors, Gearboxes, etc.



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# Old indicator vs. new indicator: Better, but still not perfect

- In the past alarming methods gave indications too late to correct without downtime
- Continuous vibration monitoring on the system's gearboxes was discovered to give a much earlier indication of a problem
- So, the good news is continuous vibration monitoring can eliminate a digester catastrophe
- But the bad news, still, is Operations doesn't have the time to continuously monitor only one set of data!
- A solution is needed that is real-time, dependable, *and* automatic to move us from being reactionary to predictive.

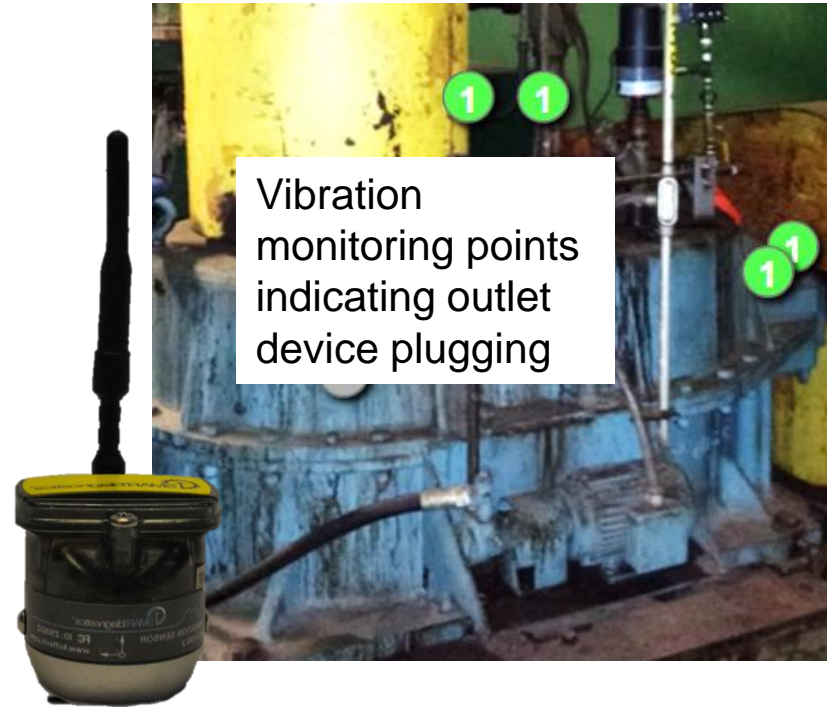
OLD INDICATOR VS. NEW INDICATOR  
BETTER BUT STILL NOT PERFECT





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# The solution: Integrate SmartDiagnostic continuous vibration monitoring with the PI System

- Vibration data and alarms that SmartDiagnostics generates are fed directly into Glatfelter's PI System
- The Operations team has been using PI for nearly 20 years and know its value
- Ops is able to rapidly and efficiently respond to these indications

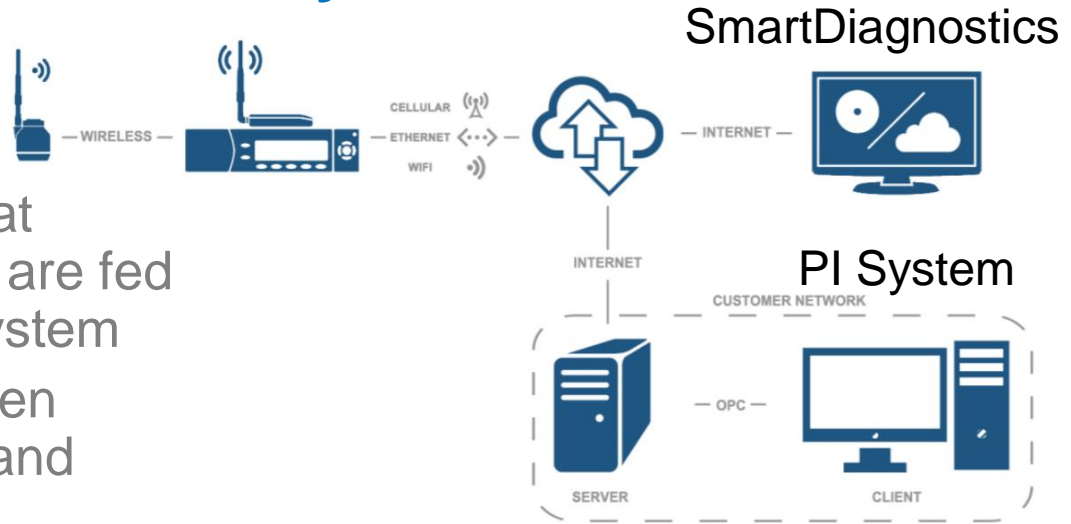
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# Business Impact: Real-time tool to avoid million dollar catastrophe

Wireless vibration technology combined with PI's analytics and notifications reduces downtime, and addresses anomalies that have plagued our industry for decades

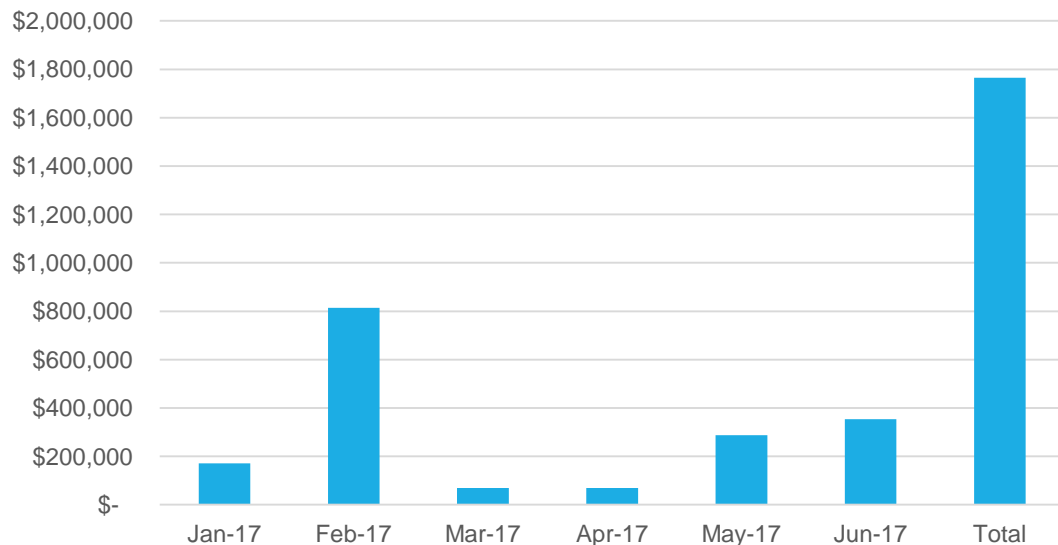
## IN CONCLUSION



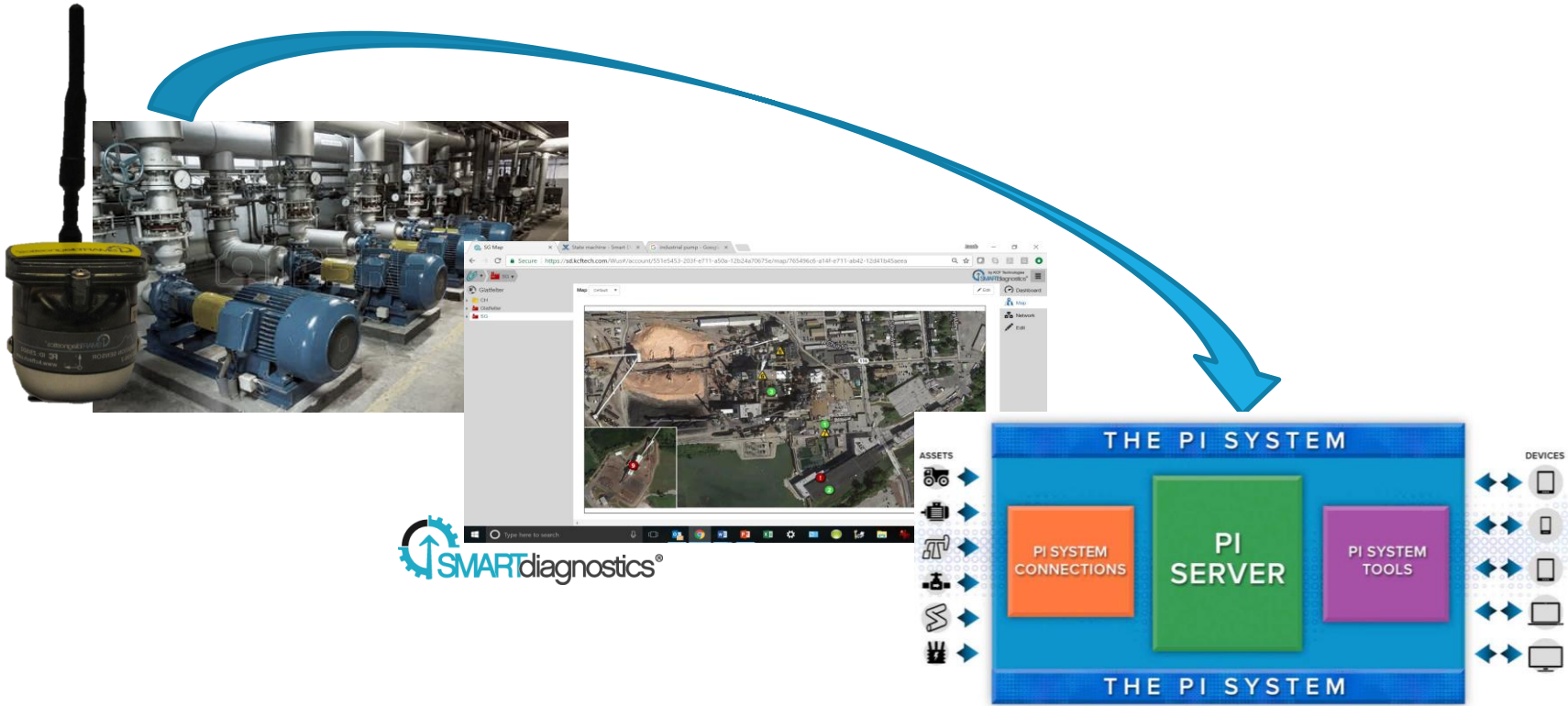
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Cost Avoidance using Continuous Monitoring



# Using a wireless and cloud-based vibration monitoring solution has enabled easy deployment at a low cost



# The SmartDiagnostics predictive vibration monitoring solution connects to the PI System using the PI Interface for OPC DA

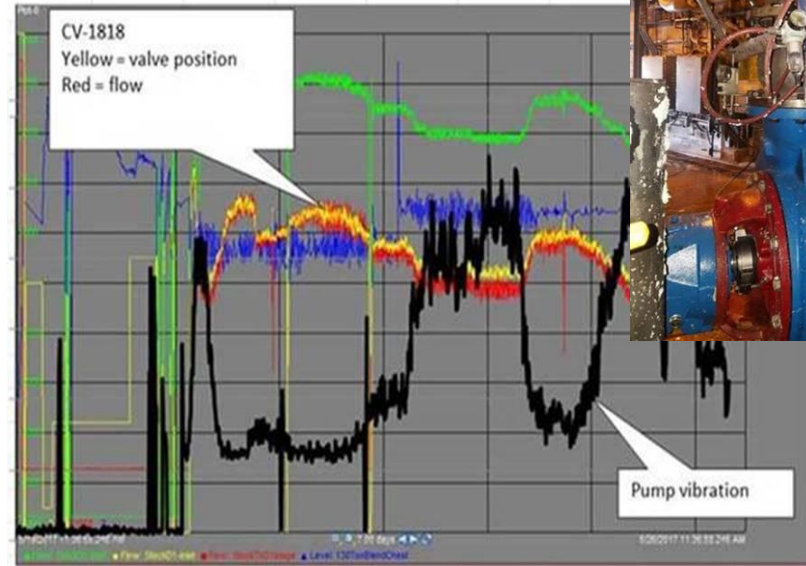


- OPC DA
- OPC tags are configured from within the SmartDiagnostics® software.
- OPC Server Requirements Windows Server 2008 R2 or newer Minimum 2GB RAM .NET Framework 4.5.1 An existing SmartDiagnostics® cloud account or local installation

~3500 Machine health tags at Spring Grove plant

# Promoting a culture shift to bring operations and maintenance together

Operations and Maintenance are now working together to solve difficult or “invisible” problems like pump cavitation





# Lessons learned

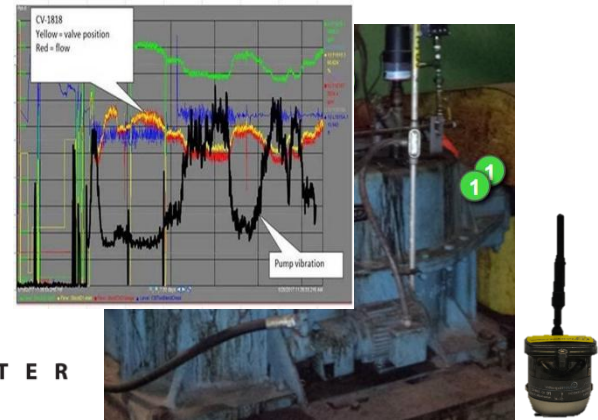
- Continuous machine health monitoring can detect faults but bringing machine health data together with process data can address the root cause before a problem unfolds
- Real-time monitoring of machine health changes the reaction time scales and enables a new level of process control
- Breaking down data silos can promote a cultural shift necessary to solve the most difficult and long standing problems



# Machinery health monitoring avoids downtime and increase machine life

## COMPANY and GOAL

The Glatfelter paper company has integrated machinery health monitoring into their PI System to avoid catastrophic breakdowns in real-time



## CHALLENGE

Enable the Operations team to identify and correct conditions that lead to catastrophic failure and premature machine wear out

- Operations has the ability to impact maintenance and reliability through controlling key variable but they often don't have the information necessary to make the needed adjustment

## SOLUTION

Key machinery health information from Glatfelter's SmartDiagnostics wireless monitoring system was integrated into the PI Screens using the PI Interface for OPC DA

- Wireless machinery monitoring is an easy way to continuously monitor critical aspects of machine behavior that indicate conditions of excessive wear or precursors to catastrophe

## RESULTS

At the Spring Grove site \$896k in cost avoidance was recorded over a 6 month period from January to June, 2017

- 12 fault conditions were identified and acted upon over a 6 month period
- Downtime and secondary damage cost avoidance

# Contact Information

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## Questions

Please wait for the **microphone** before asking your questions



State your **name & company**

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Event Survey



감사합니다

谢谢

Danke

Merci

Gracias

**Thank You**

ありがとう

Спасибо

Obrigado

