Where, When and Why to use wireless technology in a process plant?

Steven Van Hoof – BDM Wireless & Solutions Benelux

EMERSON

Emerson’s Strength Is Our Technology…

Data Management


Reservoir Modeling


Operations & Alarm Management


Advanced Process Control


Planning & Scheduling


Plant Asset Management


Control Engineering


Training & Simulation


Real-time Optimization


Energy Management


Asset Integrity Management

ENGINEERING & DESIGN

CONTROL SOFTWARE

PRODUCTION MANAGEMENT

ASSET RELIABILITY & PERFORMANCE

Control

PROCESS CONTROL & SAFETY SYSTEMS

WELLHEAD CONTROL

MODULAR CONTROL

MACHINERY HEALTH

Field Devices

MEASUREMENT & FLOW

ANALYTICAL

SOLENOIDS & PNEUMATICS

FINAL CONTROL

…People, and Ability to Create Value for Our Customers

World-class People and Expertise

55,600
Automation Solutions Employees

3,200+
Engineering & Development

12,200+
Salespeople

100+
Industry Consultants

5,100+
Project Services Personnel

5,100+
Lifecycle Services Professionals

400+
Service Centers

Solutions Enabling Top Quartile Performance

Project Certainty

Enable customers to eliminate cost, reduce complexity, and accommodate late changes on capital projects.

Operational Certainty

Help customers optimize production, improve reliability, minimize emissions, and ensure safety.

INDUSTRY 4.0

Automation and the Industrial Internet of Things

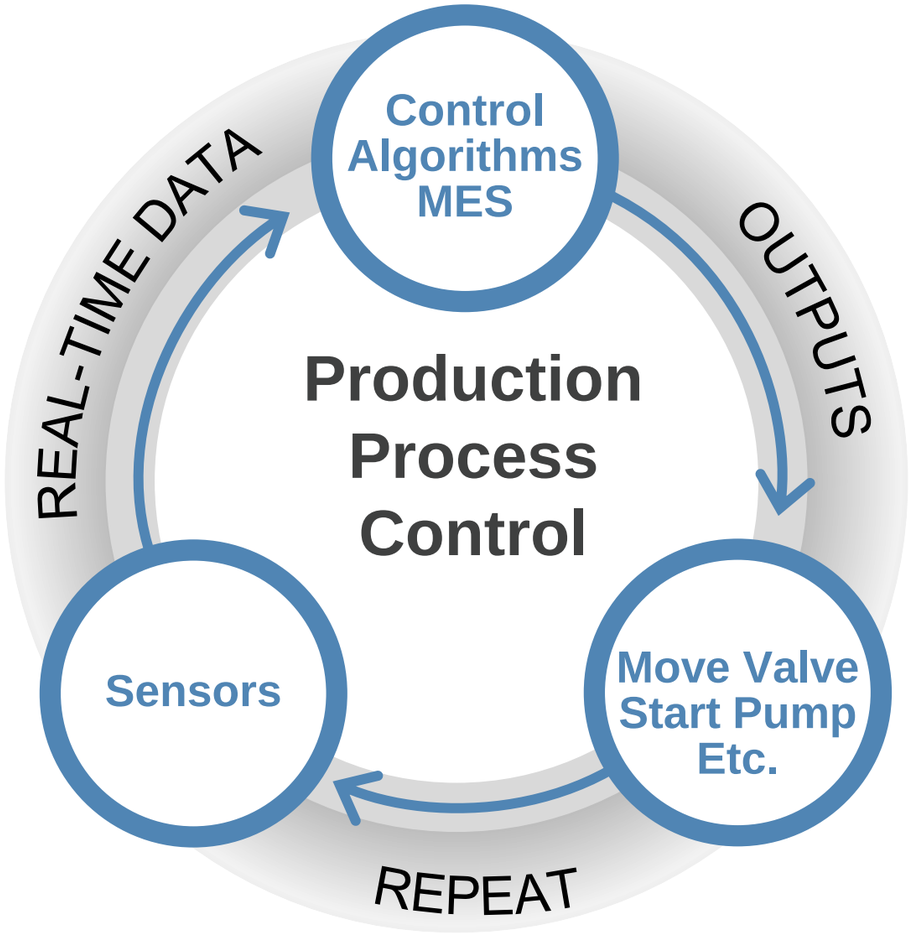
Why is everyone talking about it?

Improved sensing technologies

Cost-effective, secure connectivity

Advanced computing and analytical methods

Digital Transformation Enables Companies to Achieve & Sustain Top Quartile Operational Performance



Closed Loop

Frequently Open Loop

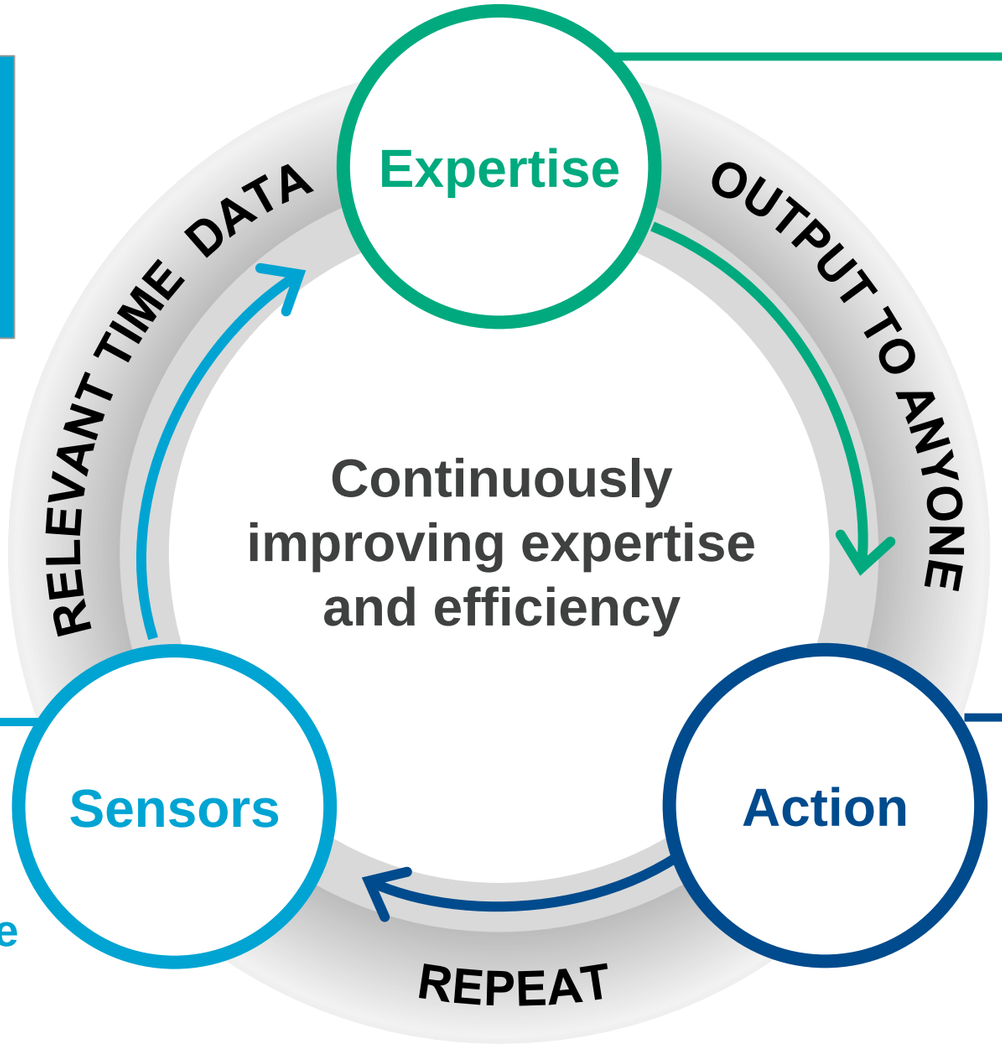
Digital Transformation “Closes the Loop” in New Areas

Distributed across the globe via the Internet to anyone – IIoT is an evolution, not revolution

SEE

Energy, Reliability, Safety, Optimization

Digital and repeatable



DECIDE

Digital Twins

Embedded domain expertise

Machine Learning

Diverse, rich data sets

“Unlimited” storage and processing (Cloud)

ACT

Mobility tools on multiple platforms to access alerts, information, and prescribed actions

Automating & Optimizing Operational Processes with Technology *is* Digital Transformation

Pragmatic Adoption of Digital Transformation Follows a Simple, Effective Deployment Model

Data

Adopt **innovative sensing technologies** that are easy and cost effective to install and maintain

Connectivity

Implement a set of **architectures** that ensures **security** of operational data, and allows secure interaction with **IT** and **cloud** applications

Analytics

Deploy **scalable analytics applications** to deliver actionable insights and automate manual workflows

Services

Deploy **new monitoring solutions, consulting,** and **implementation services** ensure operational outcomes

You Can’t Improve What You Don’t Measure

PERVASIVE SENSING

Innovative sensing strategies for cost-effective monitoring and optimization, enabling improved operational visibility to solve new problems

BUILDING ON THE INDUSTRY’S BROADEST SENSING PORTFOLIO

CORRLOG
ROXAR

NON-INTRUSIVE
CORROSION & EROSION

VIBRATION

VALVE
POSITION

PARTIAL
DISCHARGE

LOCATION

RADAR
LEVEL

LEVEL
SWITCH

DISCRETE

FLOW
TOTALIZER

PASSIVE
TEMPERATURE

PLUNGER
ARRIVAL

NON-INTRUSIVE
TEMPERATURE

PRESSURE
GAUGE

PRESSURE

TEMPERATURE

TOXIC GAS

ACOUSTIC

POWER
MODULES

THUM
ADAPTER

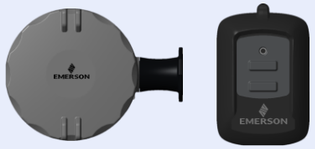
POWER METER

DAM MONITOR

RECENT ENHANCEMENTS

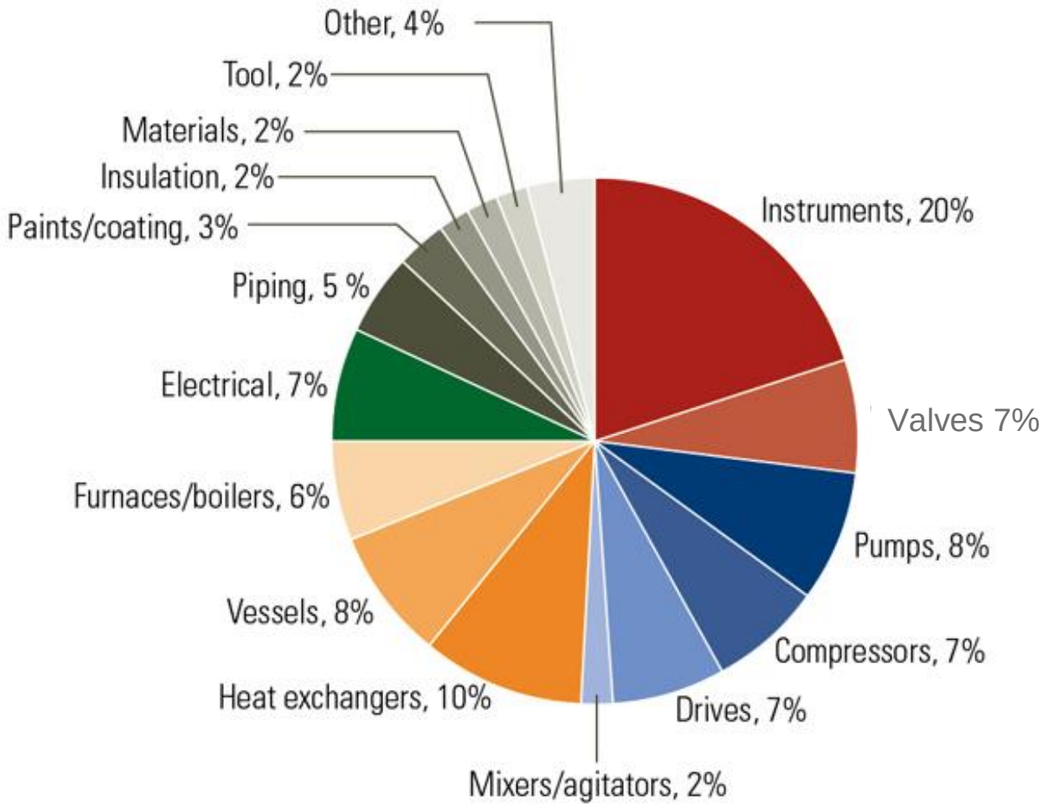
LOCATION AWARENESS

Digitally transform facility safety with *Wireless*HART™-based Location Awareness system



SAFETY SHOWER MONITORING WITH COMPLETE WIRELESS SOLUTION

Maintenance Spending



27% of maintenance spending is on instruments and valves

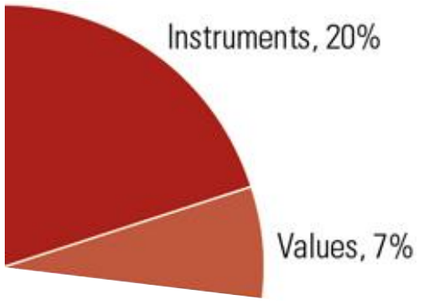
KEY:

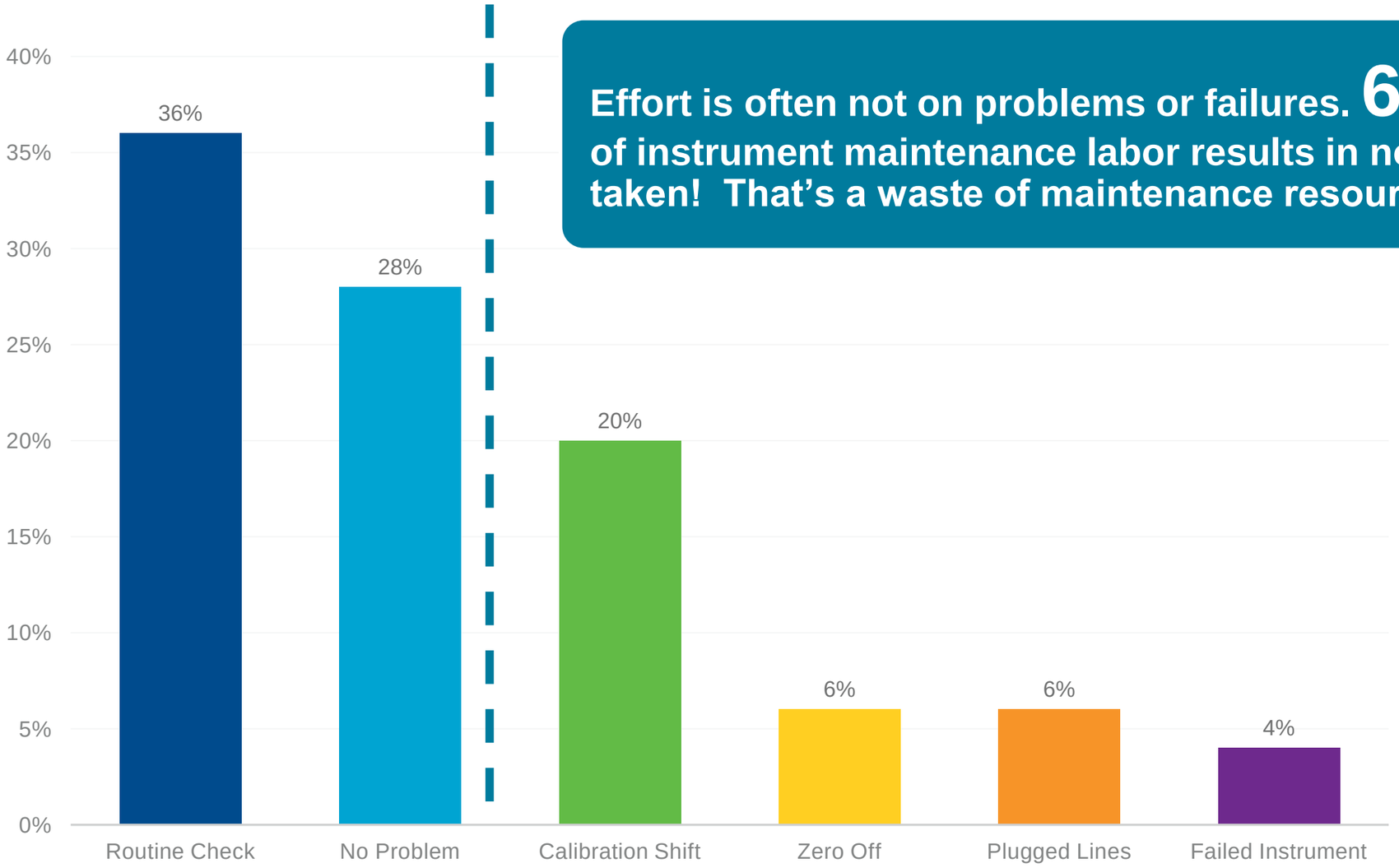
- Mechanical Equipment
- Process Equipment
- Instruments & Valves
- Electrical Equipment

Source: HPI Market Data 2003
Gulf Publishing Company

EMERSON

A Look at Maintenance Tasks





Effort is often not on problems or failures. 63% of instrument maintenance labor results in no action taken! That's a waste of maintenance resources.

Source: Multi National Chemical Co.

Now Think About Your Process…

Do you use those intelligent devices at their full capacity?

- Consider the Number of Instruments and Valves in your Process?
- Do you use the HART capabilities of each device, or just 4 – 20 mA for process control?
- If you want to add new sensors, how much IO capacity do you still have left?
- Is that IO HART transparent? Or do you use install multiplexers?
- What about wiring, isn't it expensive?
- How much time does it take to add new sensors?

Many essential assets are now within economic reach with IEC 62591 "WirelessHART"