Reducing Industrial Risk and Total Cost of Ownership by Integrating Condition Monitoring, Asset Management, and Vendor Expertise

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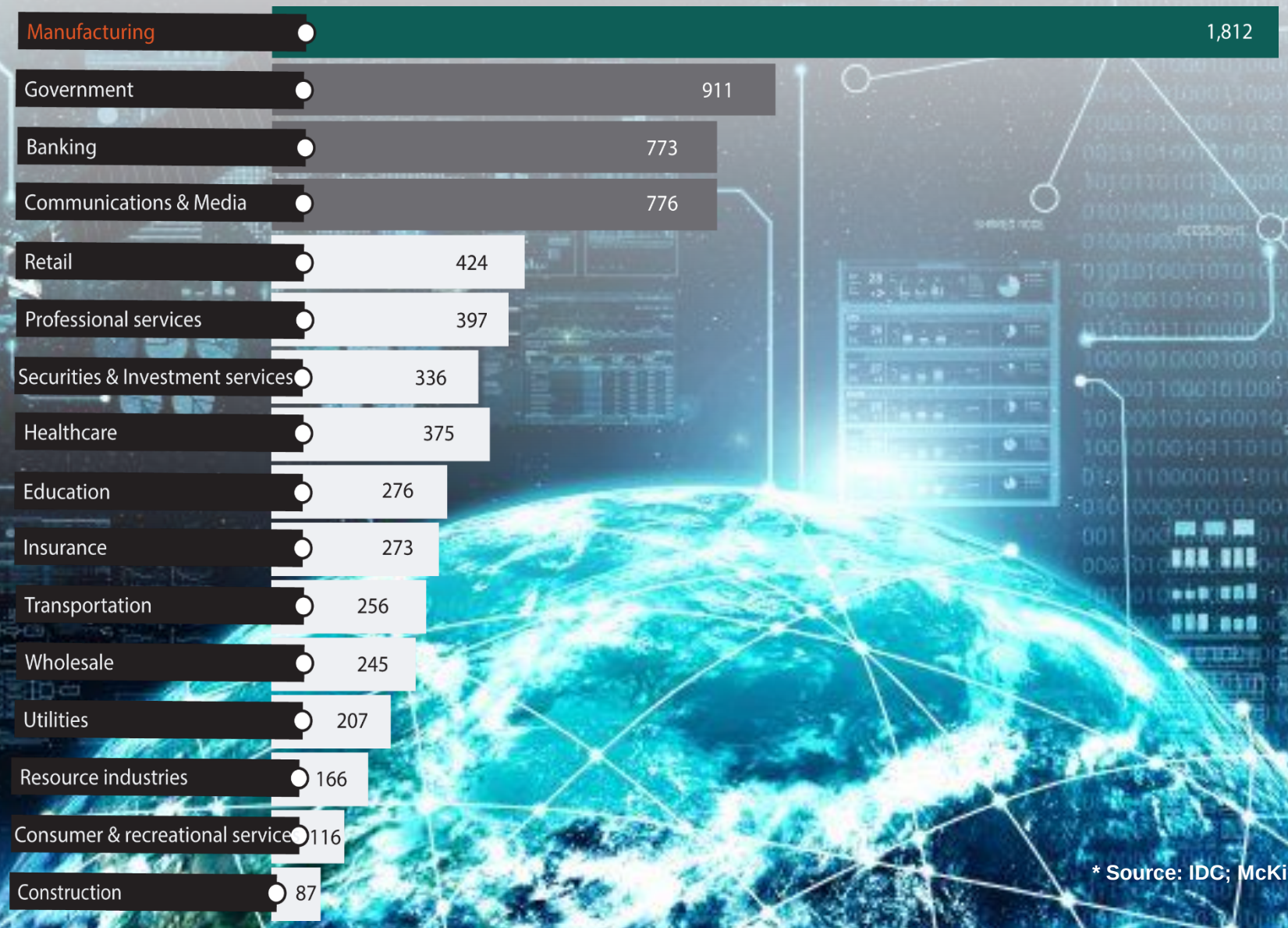
Manufacturing already generates more data than any other sector*



Measurement in Petabytes
1 Discrete manufacturing constitutes 1072 petabytes; process manufacturing 740 petabytes

*** Source: IDC; McKinsey Global Institute analysis 2010**

A typical process plant analysis

- 30% of controls in manual
- 20-40% of controllers oscillating
- 30% of valves with mechanical problems
- Control system is delivering sub-standard results
- Potential to improve control and reduce variability by 50% or more

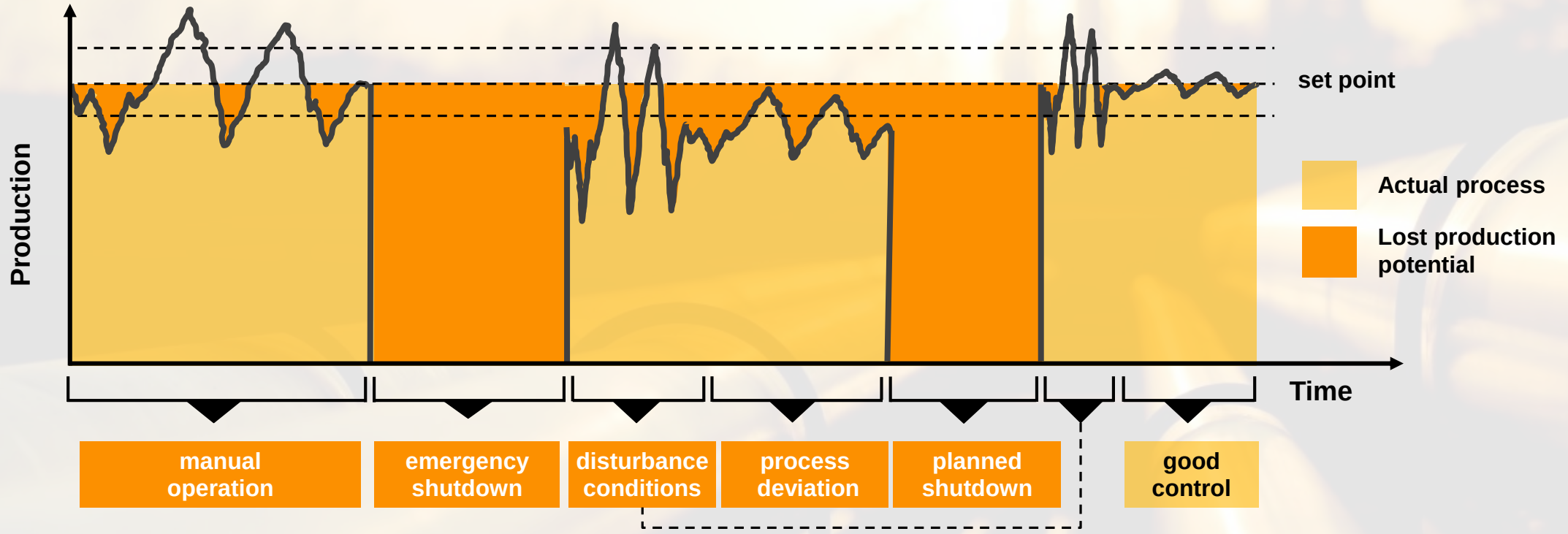
Chemical savings

Production increase

Quality improvement

Reduced energy costs

Sources of lost production



Three key levers to process improvement

1. Stabilize
Reduce process variability

2. Optimize
Increase production rate

3. Maximize
Asset availability & uptime

But what about the past setup of hardware & software tools and people in industry?

Hardware & Software tools

- Focus on **control**
- Flood of **monitoring data w/o classification**
- **Small number of smart devices**
- Black boxes
- Heavy maintenance **data historians**

People

- Few dedicated people
- Many device vendors to handle
- No predictive maintenance mindset
- Lack of local skills and training

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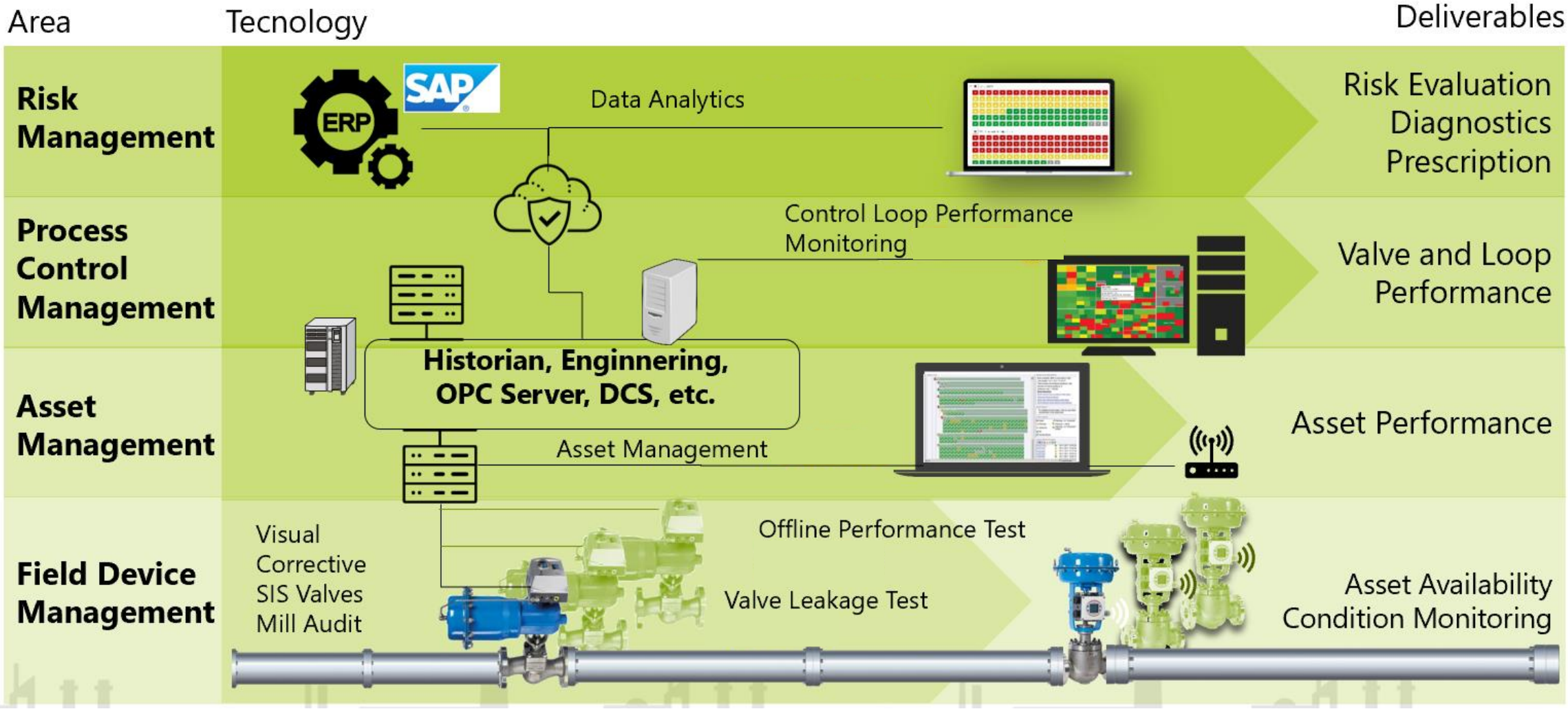
IIoT condition monitoring tools in all levels

Connected to the vendor expertise



A solution comes in 3 steps

Joint work with vendor to collect data, turn to information and take action

Data to

Information

to Action

Thousands pieces of data

Prioritized recommendations

Targeted actions

Example: **Data** to **Information**

Measuring valve stiction

Is loop in AUTO?

Is it Oscillating?

Does it have a valve?

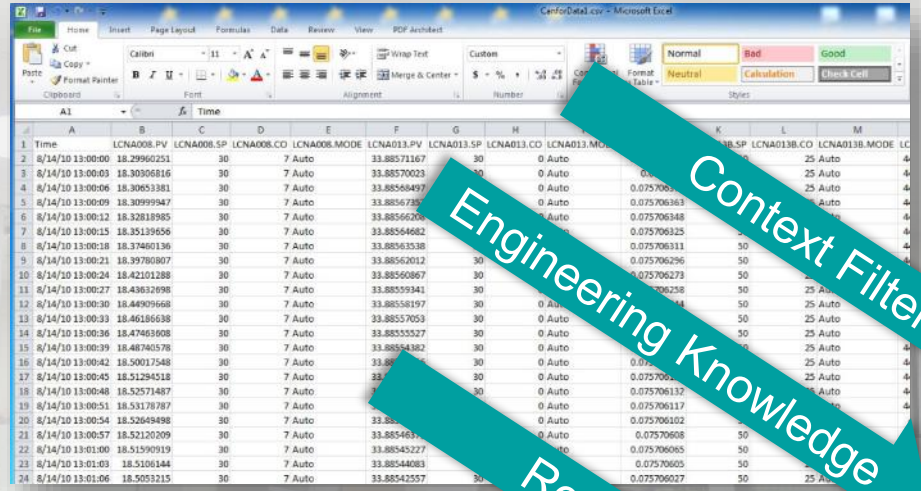
PV = Square Wave

CO = Saw Tooth

Peak-to-Trough of CO

Data to Information

DATA

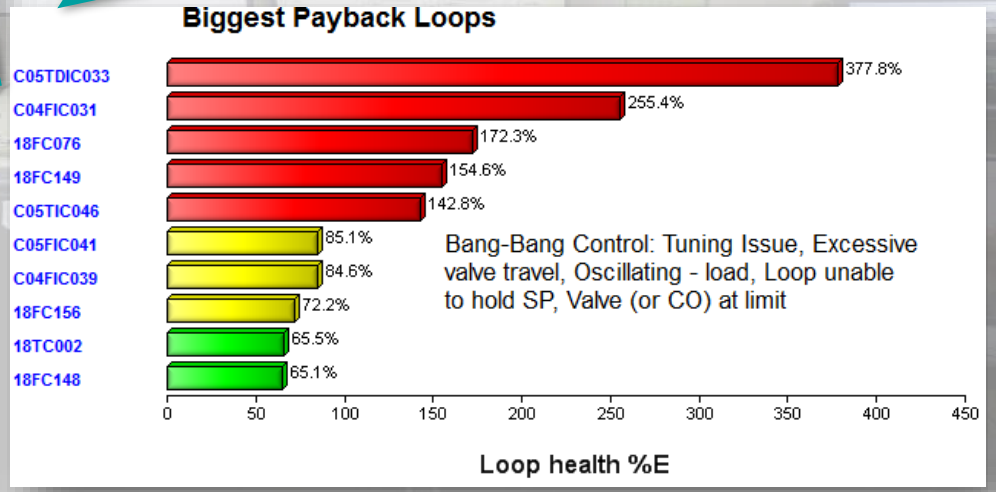


Context Filter

Engineering Knowledge

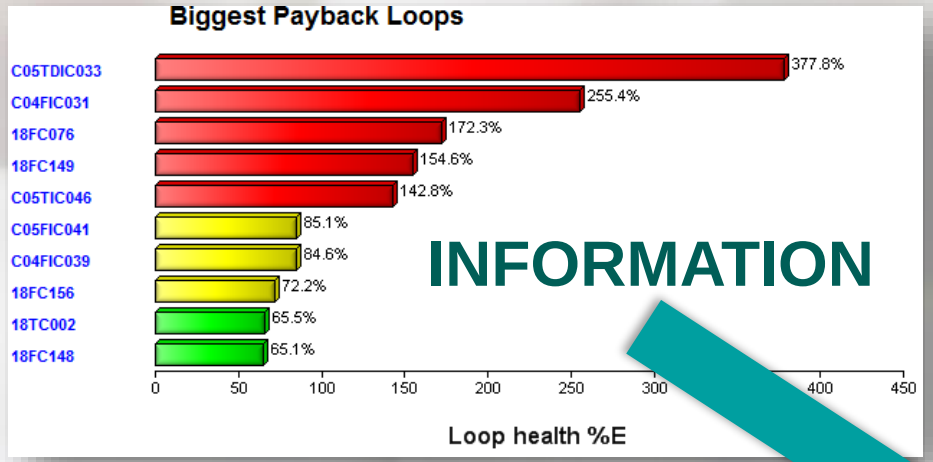
Reference

INFORMATION



Information to Action

INFORMATION



INFORMATION

ACTION

Getting started

What you **don't** need.

100% Smart Instruments

Full Sensor Network Infrastructure

Gateways

Parallel Networks

Tons of IT Knowledge

Common Architecture

Staffing

Million-dollar budget

Massive engineering study

Getting started

What you **do** need.

- Some justification – A goal
- Some connectivity
  - Historian
  - OPC
- Small amount of IT Support
- Training
- Right software tools
- Tracking and follow-up

Good news!

You already have the data!

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