FLUKE® Reliability

# How to ensure quality data drives your maintenance practices

Connected Reliability Webinars

Accelix™ Webinar Series

# Kevin Clark

*Vice President, Fluke Reliability*

- A Fluke leader since 2016
- More than 25 years of experience in operations leadership focusing on engineering, asset management, IT, supply, manufacturing automation, and safety systems
- Previously held positions at Perficient, Caterpillar, Johnson & Johnson
- Longstanding member of the Society of Maintenance & Reliability Professionals
- Certified Maintenance & Reliability Professional since 2004

# Matt Midas

*Vice President, Performance Management, Cohesive Solutions, Inc.*

- Leader in maintenance and reliability for more than 30 years
- Held positions at Charleston Naval Shipyard, PSDI/MRO Software, Genesis Solutions, and Solufy/Prometheus
- Graduate of the U.S. Merchant Marine Academy
- Served aboard U.S. flag merchant vessels and was commissioned in the U.S. Navy serving aboard the USS Jesse L Brown, FF1089

# Cohesive Solutions company highlights

### Industry Best Practices
Deep industry subject matter expertise in business and work processes

### IBM Maximo
EAM implementations >20
One of the largest resellers and implementers of IBM Maximo in North America, with over 200 Asset and Work Management projects

### Rich Industry Experience
Utilities, Oil & Gas, Manufacturing, Facility Management, Aerospace & Transportation, Nuclear

### IBM Partner
Certified Maximo Consultants
Understand EAM systems and space

### Performance Management
EAM Assessments
Award winning solutions that enable organizations to continuously improve and Achieve Operational Excellence

# Rapid cultural shift …


- How many of you have been on one of these **TODAY**?
- How many of them worked perfectly?
- Who would have thought 3 weeks ago that this could be your **PRIMARY** or best option to interact?
- Who would have thought your couch would **BE** your new office?
- Who would have thought…?

# So, again … why is data quality important???

## Data Quality

"…data is generally considered high quality if it is "fit for [its] intended uses in operations, decision making and planning".[2][3] Moreover, data is deemed of high quality if it correctly represents the real-world construct to which it refers.

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***People's views on data quality can often be in disagreement, even when discussing the same set of data used for the same purpose.***

*Wikipedia*

# Data enriches a technician's experience and performance

Maintenance teams are pressed to **"do more with less"** more often than previously.
And more recently, **remotely**.

Disconnected data → Accessible data

Multiple systems → A single system of record

Data in the office/shop/plant floor only → Data accessible from any mobile smart device with internet connection

Too many screens → One screen to rule them all

# POLL QUESTION No. 1

## Where are you with condition monitoring?

**(Click only one answer)**

- Up and running and looking to expand
- Entering or planning a pilot program
- Considering it
- Love to do it, but struggling with support from leadership
- No consideration at this time





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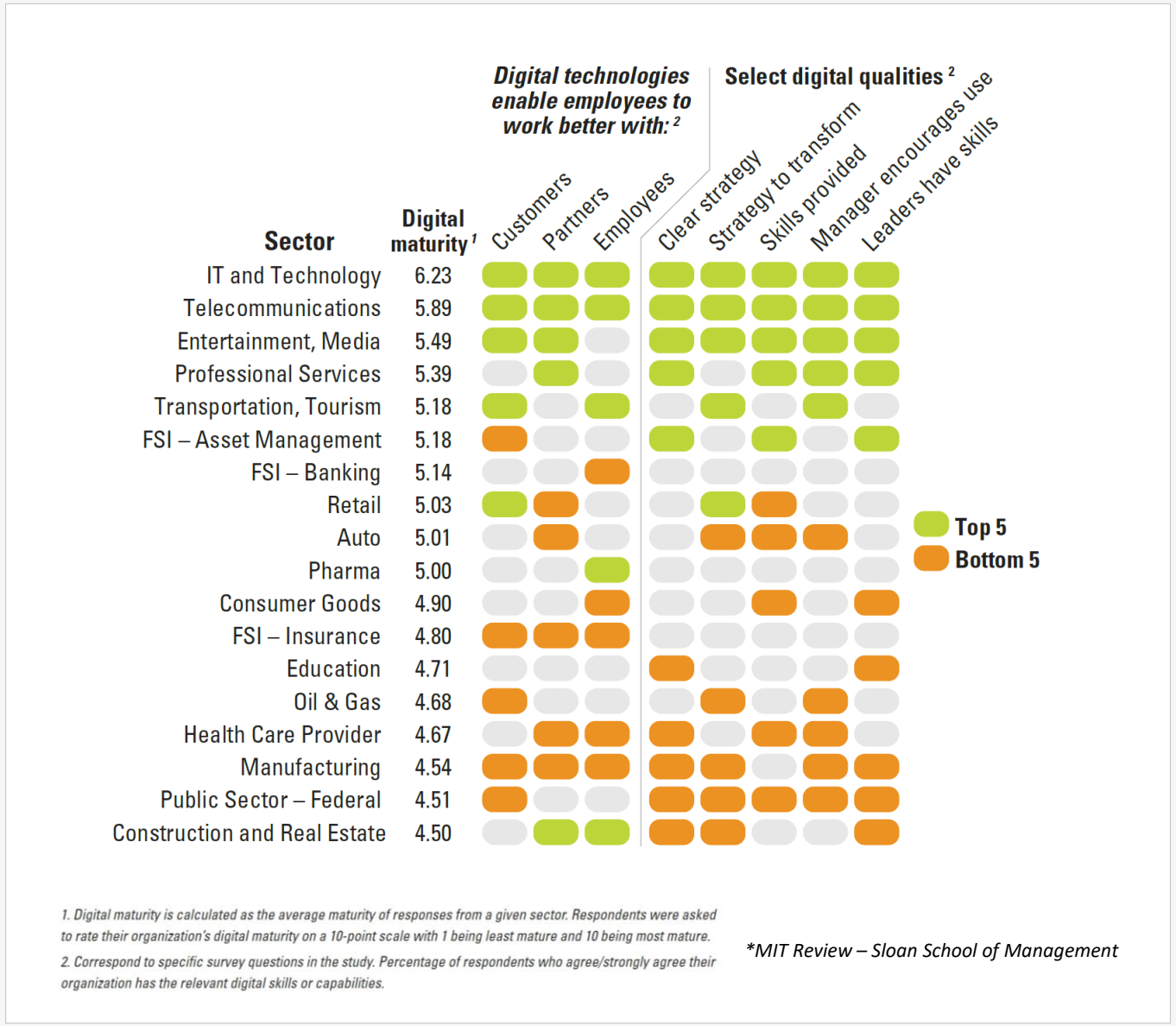
# So, how is Manufacturing doing??




*1. Digital maturity is calculated as the average maturity of responses from a given sector. Respondents were asked to rate their organization's digital maturity on a 10-point scale with 1 being least mature and 10 being most mature.*

*2. Correspond to specific survey questions in the study. Percentage of respondents who agree/strongly agree their organization has the relevant digital skills or capabilities.*

**MIT Review – Sloan School of Management*

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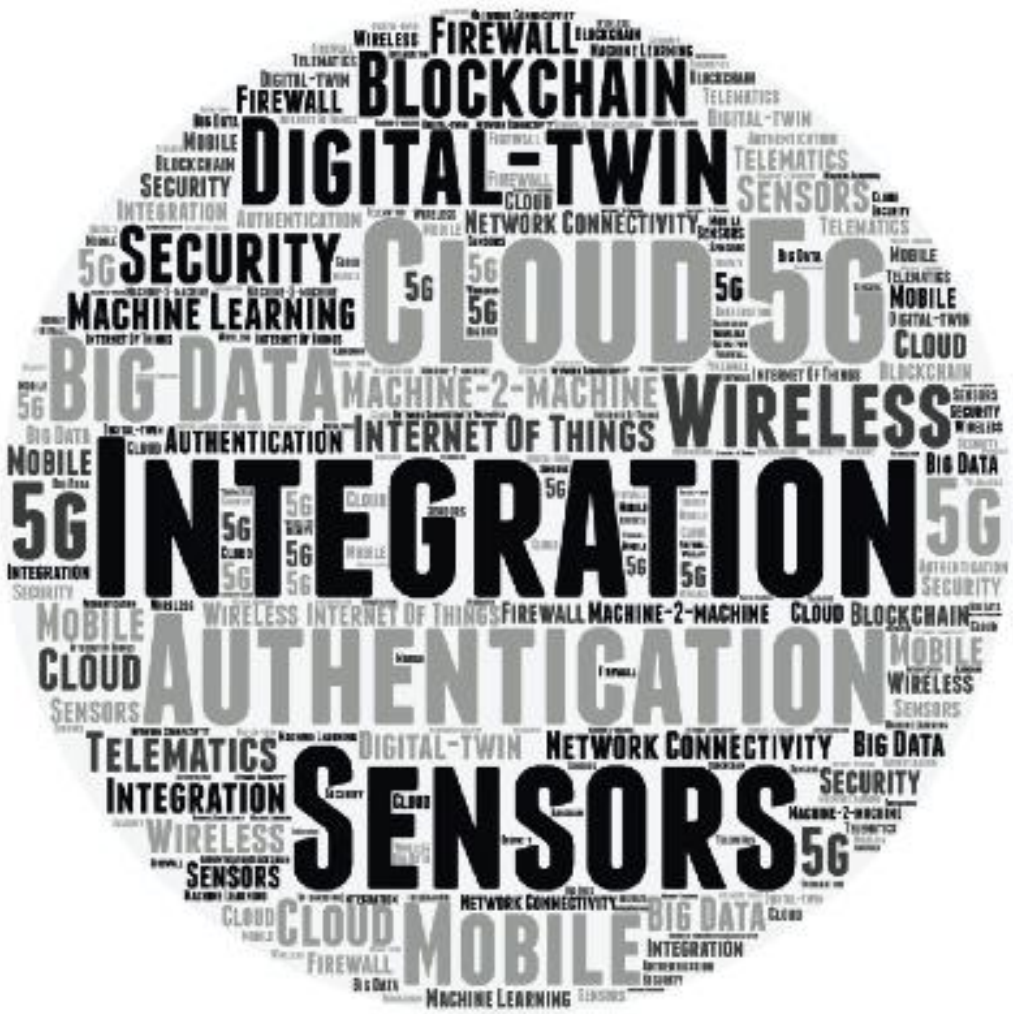
# BS in Intelligent Manufacturing??

- Additive Manufacturing
- Simulation
- Industrial Internet of Things
- AI & Big Data
- Cloud & Mobile Computing
- Augmented Reality
- Systems Integration
- Supply Chain
- Autonomous Systems
- Cyber Security

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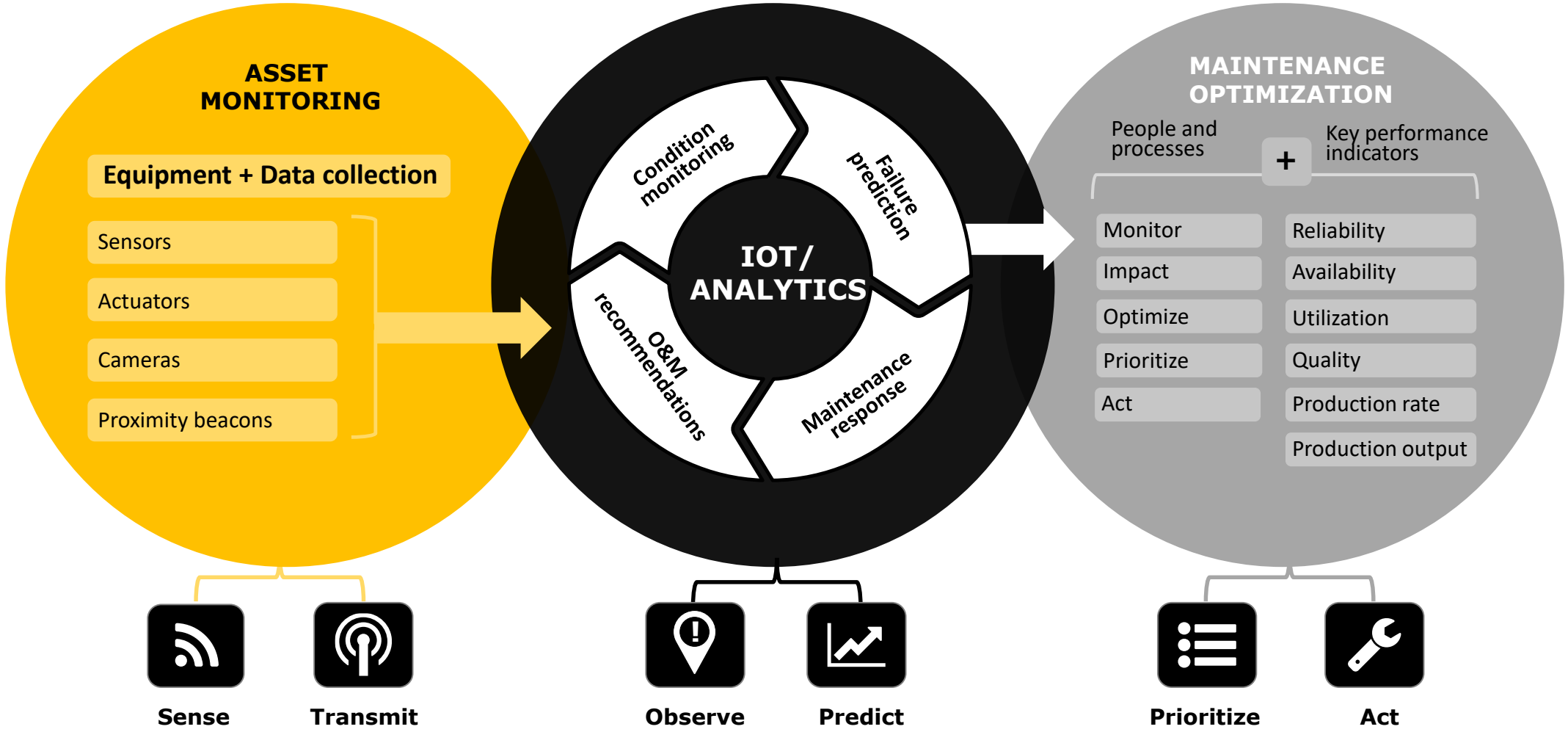
# How it all comes together...



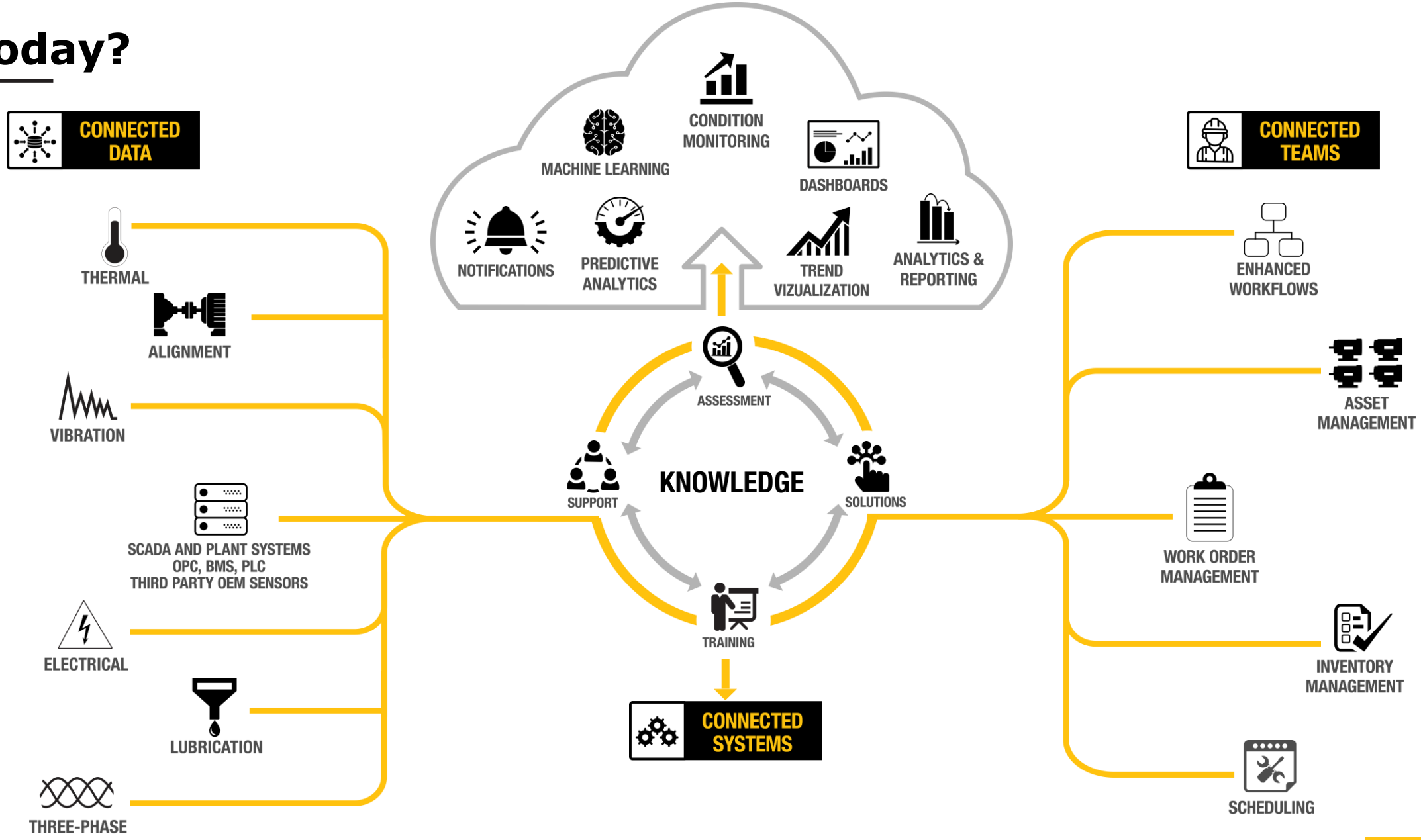
# How it all comes together

**Data connectivity:** This means all types and sources of data are combined into a usable location and state.

**System connectivity:** This enables the integration of asset health data with all the systems you currently use.

**Teams connectivity:** Now, all personnel have access to asset information, which allows for much more efficient maintenance actions.

# Today?





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# POLL QUESTION No. 2

**Is more remote monitoring or other remote maintenance work likely in your future? (Click only one answer)**

- Most definitely; we've always had a strong remote practice
- Yes, we've been moving in that direction anyway
- There's a good chance of it, based on what we're learning now
- Probably not





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# Food for thought

***From a recent article published by the MIT Sloan Management Review, titled,***
***"The Nuts and Bolts of Digital Transformation"***

- New technologies have immediate and direct effects on performance may be a myth.
- More likely, new technologies usually have, at best, an indirect effect on organizational performance.
- They change the way employees perform their tasks, which alters people's roles.
- Ultimately, these changes in roles are what drive improvement in key performance metrics.
- Using KPIs and metrics will help monitor the performance and drive improvements.

# Data quality and confidence

**84% of CEOs**
are concerned about the quality of the data they're basing decisions on,

*according to KPMG's "2016 Global CEO Outlook."*

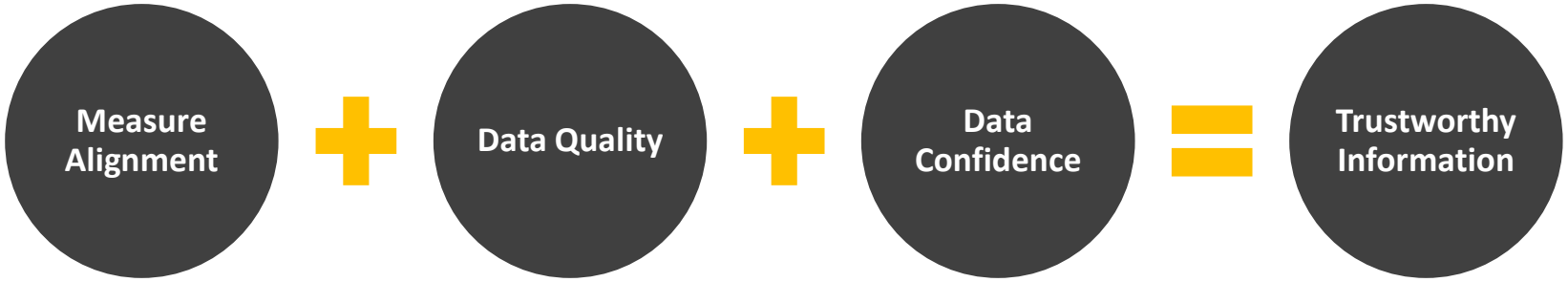
When there's a lack of trust in **data quality**, **confidence** in the results it provides is quickly eroded.

# Data quality and confidence

**Data quality** is the condition of a set of values of qualitative or quantitative variables. There are many definitions of data quality, but data is generally considered high quality if it is fit for its intended uses in operations, decision making and planning.

**Data confidence,** on the other hand, is the level of trust an organization can place in data based on characteristics such as System and Process Integrity, Completeness, Currency, and Governance. In other words, I may have the data to measure specific points, but does that data support the decisions I must make against the established objectives.

# Data quality and confidence



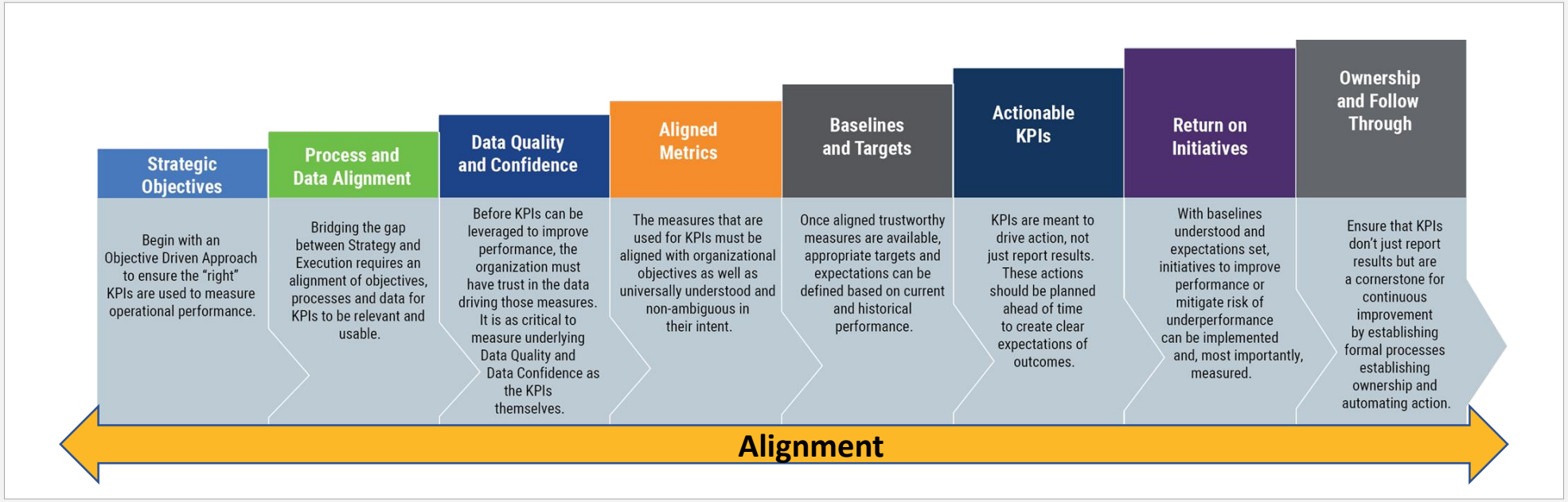

**Example Measure: Critical Work Orders Completed On Time**

| Alignment | Quality | Confidence |
|---|---|---|
| ▪ Excludes Non-Maintenance Work Orders<br>▪ Includes PMs as well as CMs | ▪ Has Scheduled Finish Date<br>▪ Has Actual Finish Date | ▪ Has Actual Labor Hours<br>▪ Has Priority |

*In God we trust; all others must bring data - W. Edwards Deming*

# How do you ensure quality data is driving your maintenance practices?

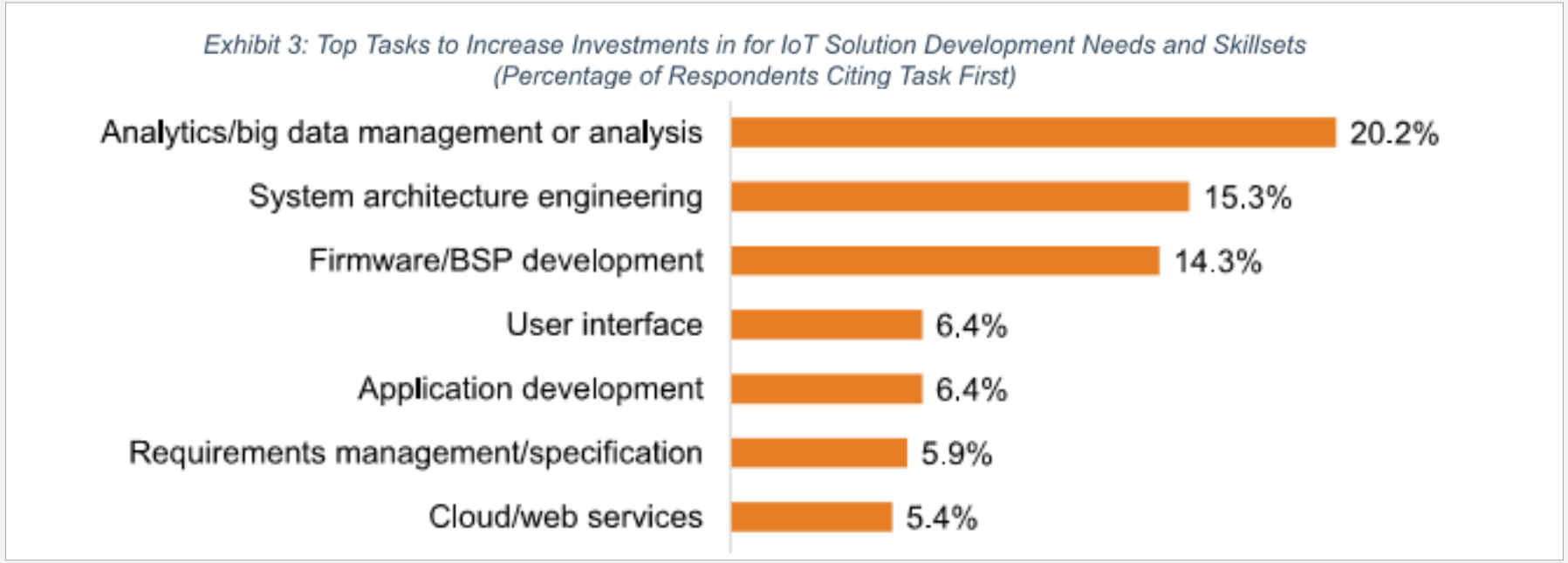
- Stated goals and objectives
- Clearly defined processes
- Process and data alignment
- Data strategy to drive quality and confidence
- Aligned metrics
- Baselines and targets
- Actionable KPIs
- Follow through



# Data, data, data

## With all the data out there

- You **need** a data strategy or a master data management plan
- You will need more powerful tools to display the data such that it is meaningful and actionable
- You will also need to have people who can manage and analyze the data more efficiently and effectively
- Static reports will not provide the insight you will need




Source: VDC Research





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# Data strategy

## Common challenges

- No formal plan on how to manage master data
- Lack of guidance from leadership on Master Data Management
- Increasing amounts of data with no objective or quality driven purpose
- Lack of confidence in the data available in the enterprise systems
- Lack of alignment of data requirements or organizational goals and business processes

# Data strategy

## How to ensure quality data

- Develop a data strategy or Master Data Management Plan
  - What data is needed
  - Definition of data elements
  - Value lists
  - Naming conventions
  - Continuous improvement process
- Identify what objectives and processes are critical
- Identify what data is needed to measure and monitor those objectives and processes
- Identify what a “good” record looks like
- Identify initiatives for improvement (continuous improvement)

# Manage your processes like they were assets

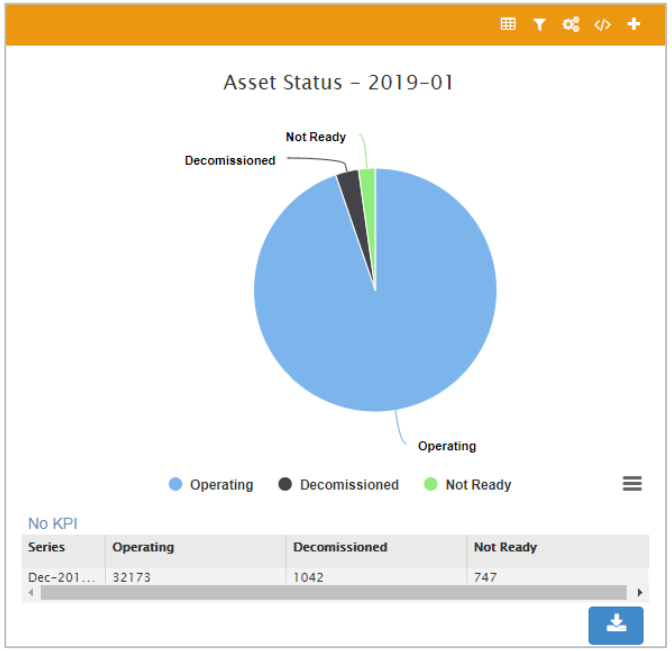
## Performance management

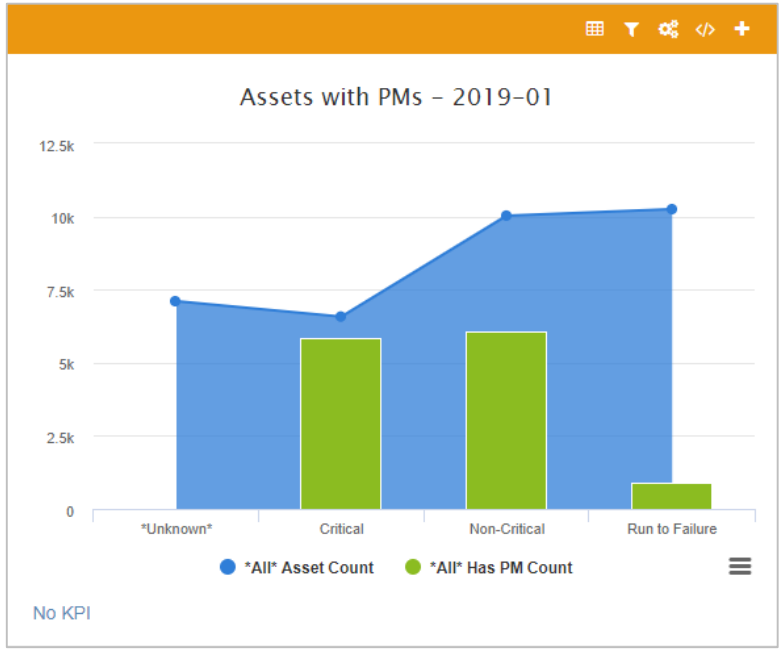
- Performance management is a process of ensuring that a set of *activities* and outputs meets an organization's *goals* in an effective and efficient manner.
- Can focus on the performance of an *organization*, a *department,* or the *processes* in place to manage particular tasks.
- Driven from the top

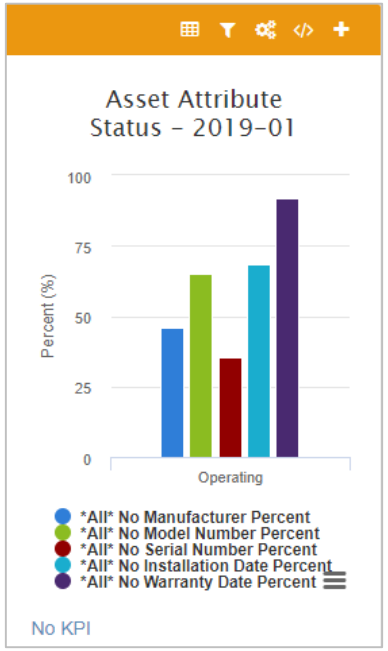
Source: Wikipedia

- It’s not just about measuring, it’s about taking action and looking for areas to improve
- Performance management is a key element of operational excellence

# Performance management dashboards



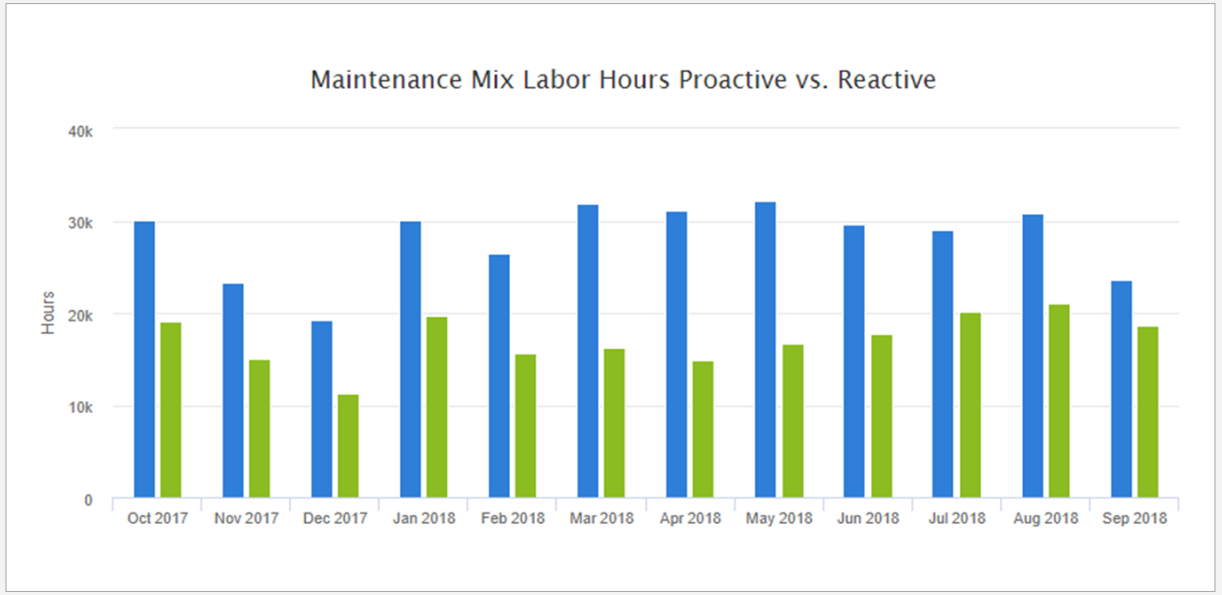

## Performance management dashboards

- Allow you to visualize your data
- Allow you to configure the views so that you can track your initiatives
- Allow you to take action based on the data

# Conclusion

## Ensuring quality data drives your maintenance practices

- Develop a data strategy or master data management plan
- Align people and processes with organizational goals and objectives
- Understand your current data and have a plan to improve it
- Transform *trustworthy* data into actionable information
- Define a process to review data on a regular basis (continuous improvement)
- Manage continuous improvement initiatives to achieve targets
- Operationalize and automate performance management



# Questions

# QUESTIONS?

## Thank you!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