Left
brain

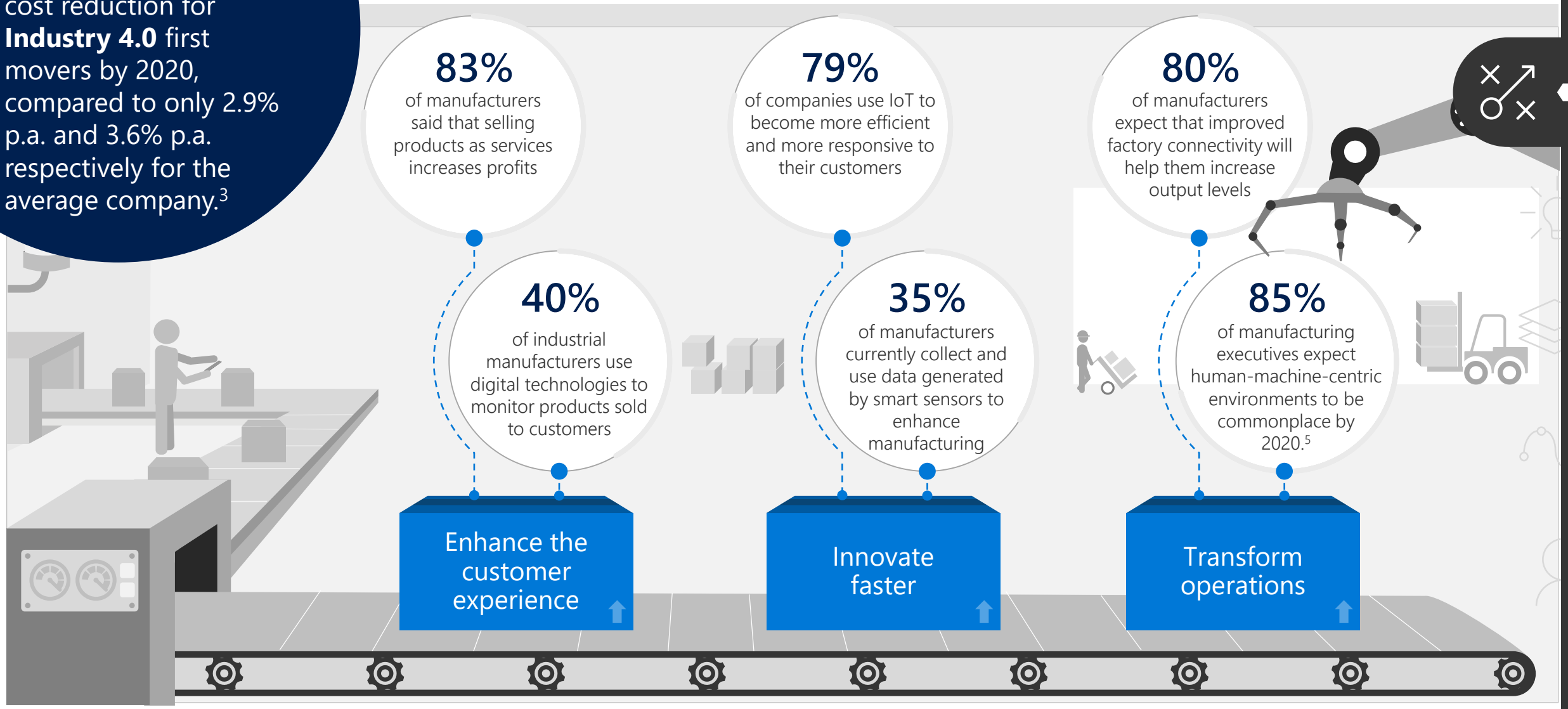
I am the left brain.
I am a scientist. A mathematician.
I love the familiar. I categorize. I am accurate. Linear.
Analytical. Strategic. I am practical.
Always in control. A master of words and language.
Realistic. I calculate equations and play with numbers.
I am order. I am logic.
I know exactly who I am.

Right
brain

I am the right brain.
I am creativity. A free spirit. I am passion.
Yearning. Sensuality. I am the sound of roaring laughter.
I am taste. The feeling of sand beneath bare feet.
I am movement. Vivid colors.
I am the urge to paint on an empty canvas.
I am boundless imagination. Art. Poetry. I sense. I feel.
I am everything I wanted to be.

Industry 4.0 is transforming business

30% simultaneous revenue increase and cost reduction for **Industry 4.0** first movers by 2020, compared to only 2.9% p.a. and 3.6% p.a. respectively for the average company.[3]



83% of manufacturers said that selling products as services increases profits

40% of industrial manufacturers use digital technologies to monitor products sold to customers

Enhance the customer experience

79% of companies use IoT to become more efficient and more responsive to their customers

35% of manufacturers currently collect and use data generated by smart sensors to enhance manufacturing

Innovate faster

80% of manufacturers expect that improved factory connectivity will help them increase output levels

85% of manufacturing executives expect human-machine-centric environments to be commonplace by 2020.[5]

Transform operations

This infographic is based on Microsoft analysis of third-party data. Sources include: 1. http://www.gartner.com/newsroom/id/3482617 2. IDC FutureScape: Worldwide Digital Transformation 2017 Predictions Jan 2017 Doc # US42259317 Web Conference By: Michael Versace. 3 PWC 2016 Global Industry 4.0 Survey; Dr. Reinhard Geissbauer, Jesper Vedso and Stefan Schrauf. 4. What's ahead for fully autonomous driving: Consumer opinions on advanced vehicle technology. Deloitte. February 2017. . 5. Eric Schaeffer et al., Machine Dreams: Making the most of the connected industrial workforce. Accenture. February, 2017. 6. Accenture Strategy: Digital Factory, Cracking the code. to success Russ Rasmus and Jason Nichols, 2016. 7. Daniela Costa, Head, European Capital Goods Equity Research, Goldman Sachs Research; Forrester Research. January, 2017. 8. (Connected business transformation: how to unlock value from the Industrial Internet of Things. Accenture. February, 2017.)

Despite the great technology

60% of all initiatives stall at the PoC stage

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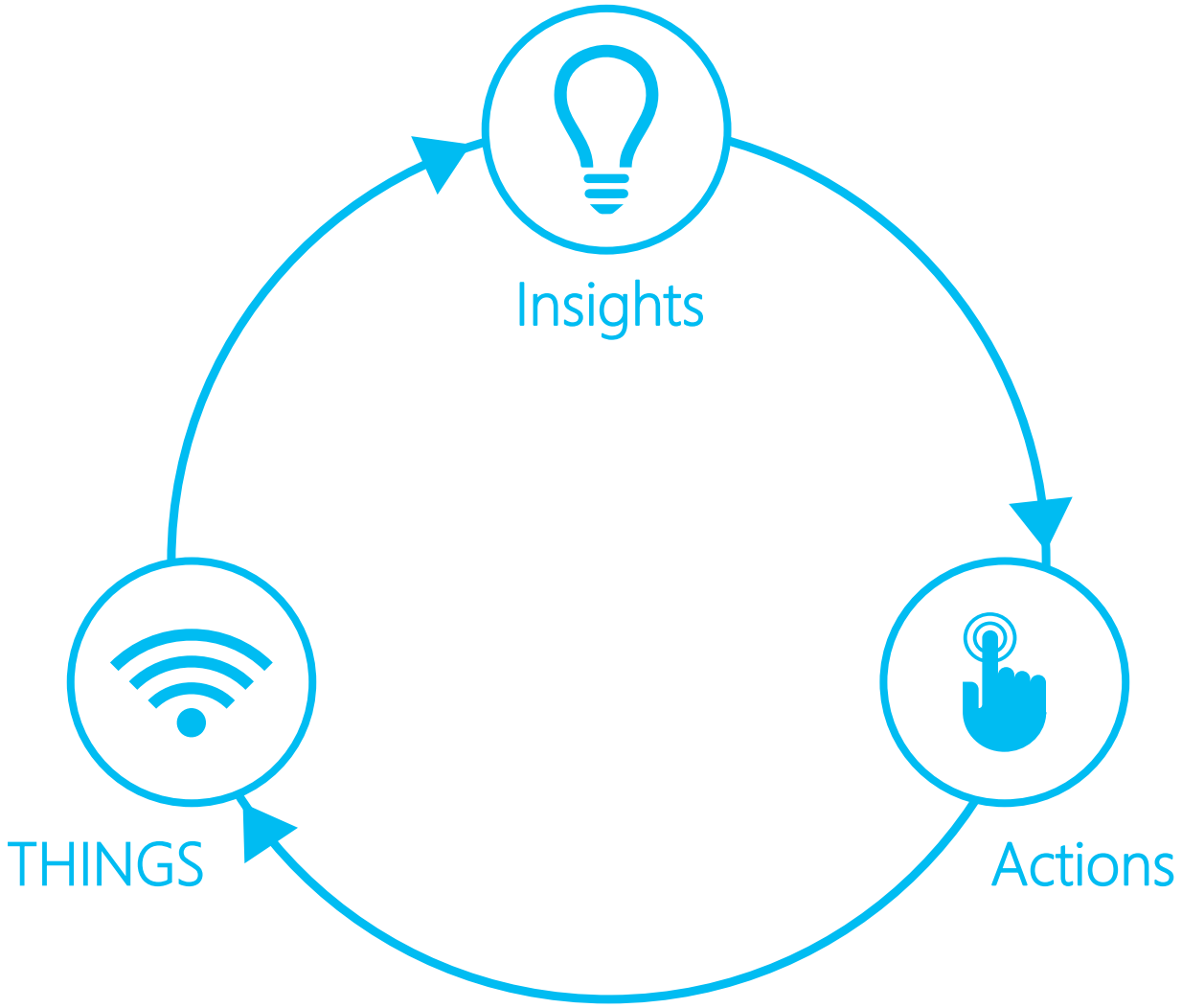
A Simple View of an PdM Solution



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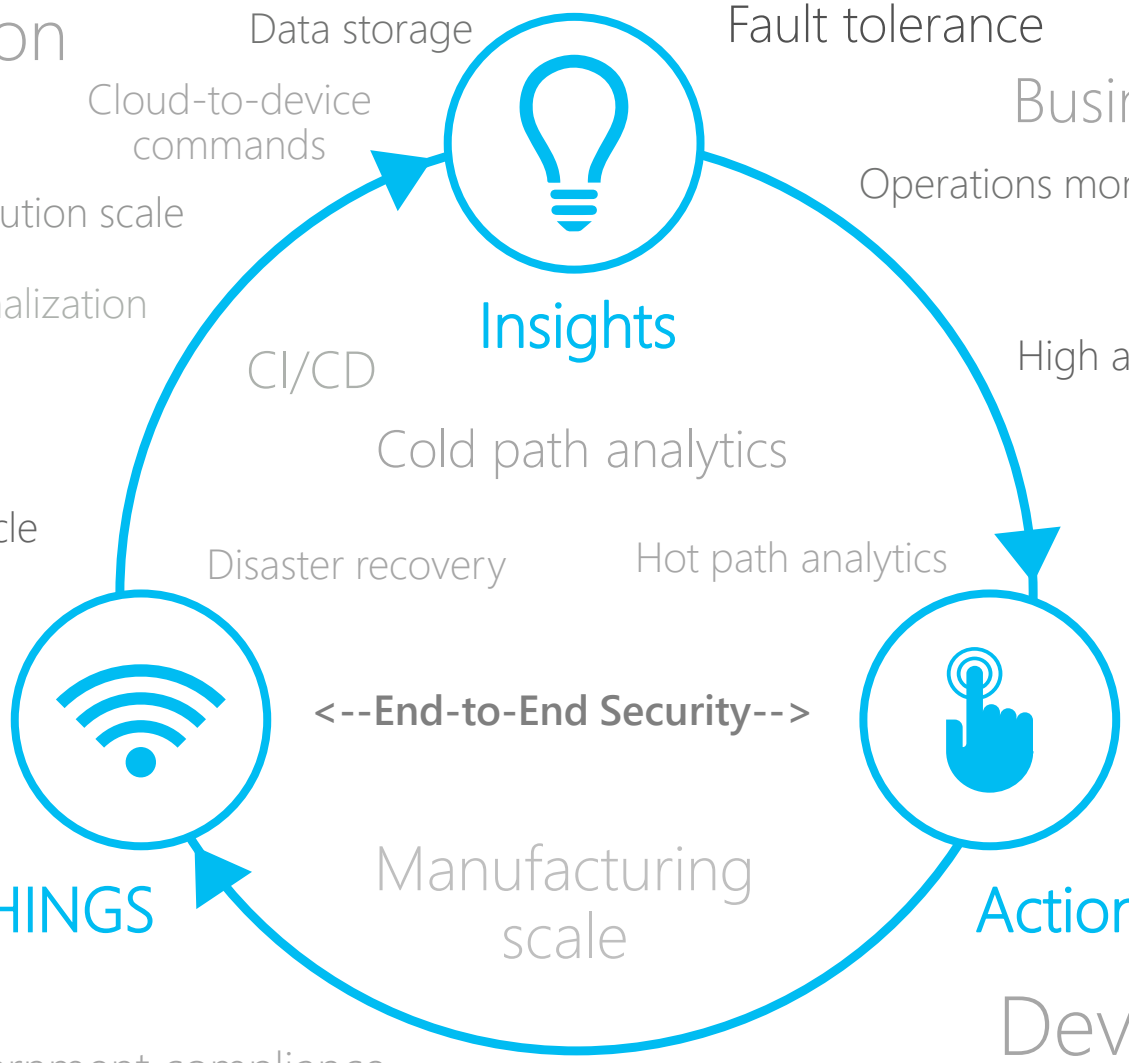
Enabling the Digital Feedback Loop Can Be Challenging



Enterprise integration

Fault tolerance

Business process integration

Operations monitoring

Device recovery

Cost management

High availability

Updating devices

Provisioning devices

Device lifecycle

Warm path analytics

Data ownership

Device commercialization

Transport protocols

On device analytics

Data visualization

HW certification

Drivers

Securing data

Device updates

Industry and government compliance

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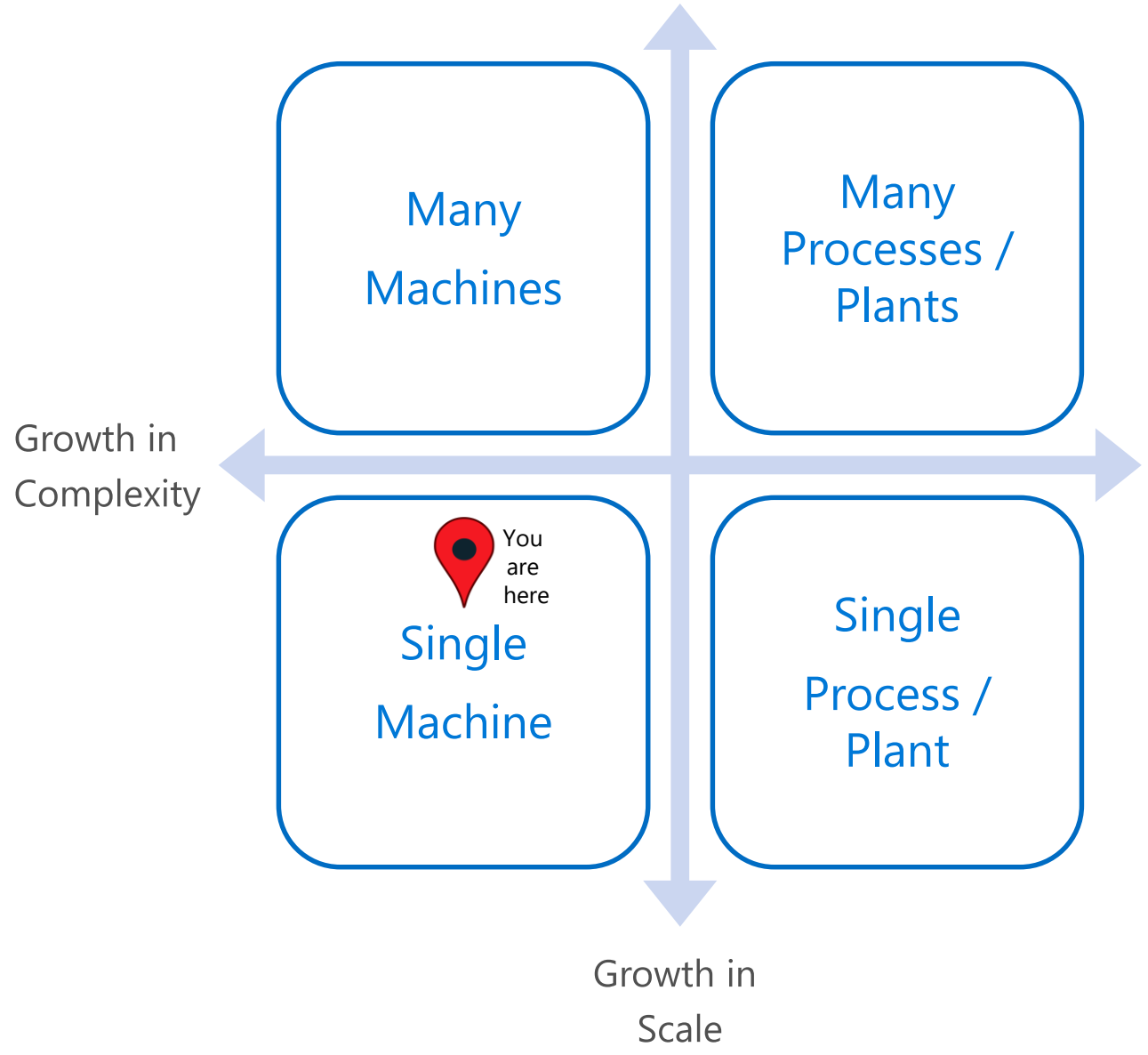
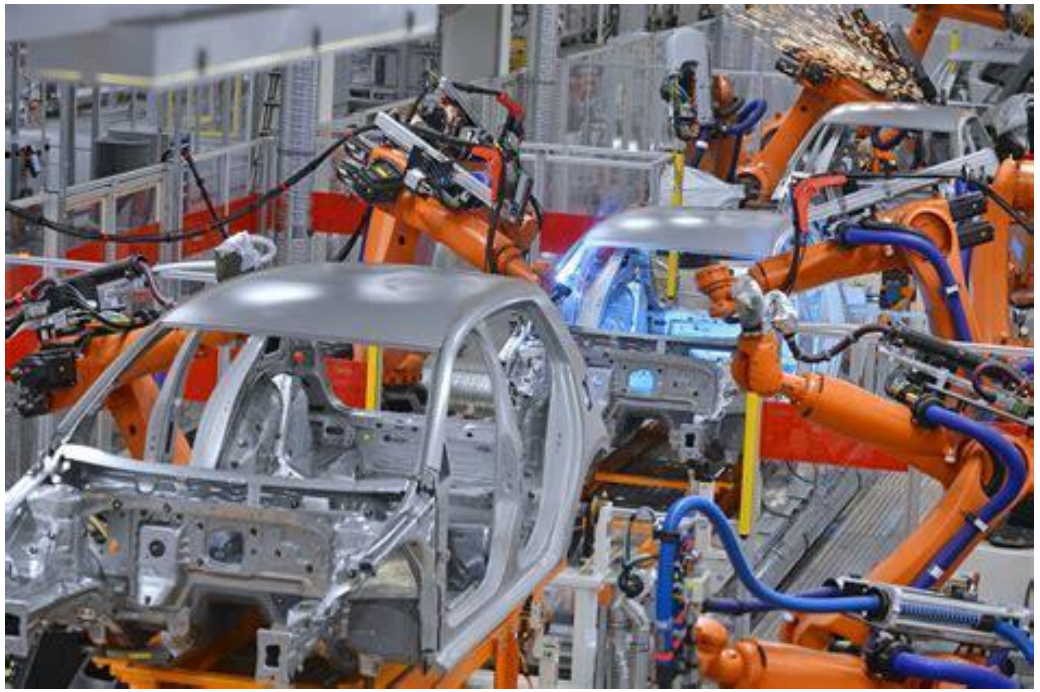
Why is it so difficult to scale Predictive Maintenance solutions?

1) Exponential growth in data sources and related data quality issues.
2) Exponential growth in modelling complexity, resulting in a need for additional techniques.
3) Exponential growth in user requirements and applications.



From Art to Science



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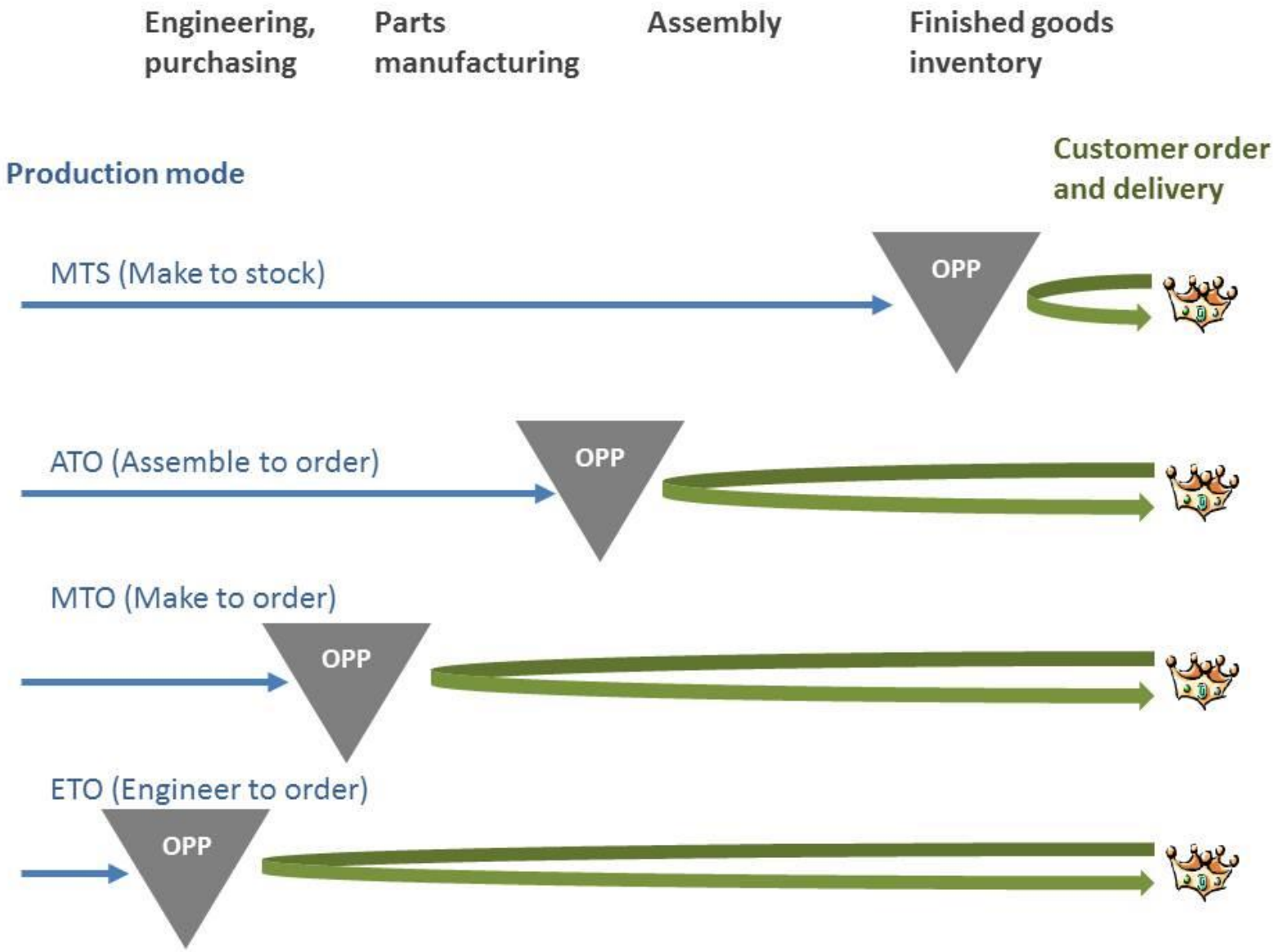
Think 'Data as an Asset' – Customer Order Decoupling Point



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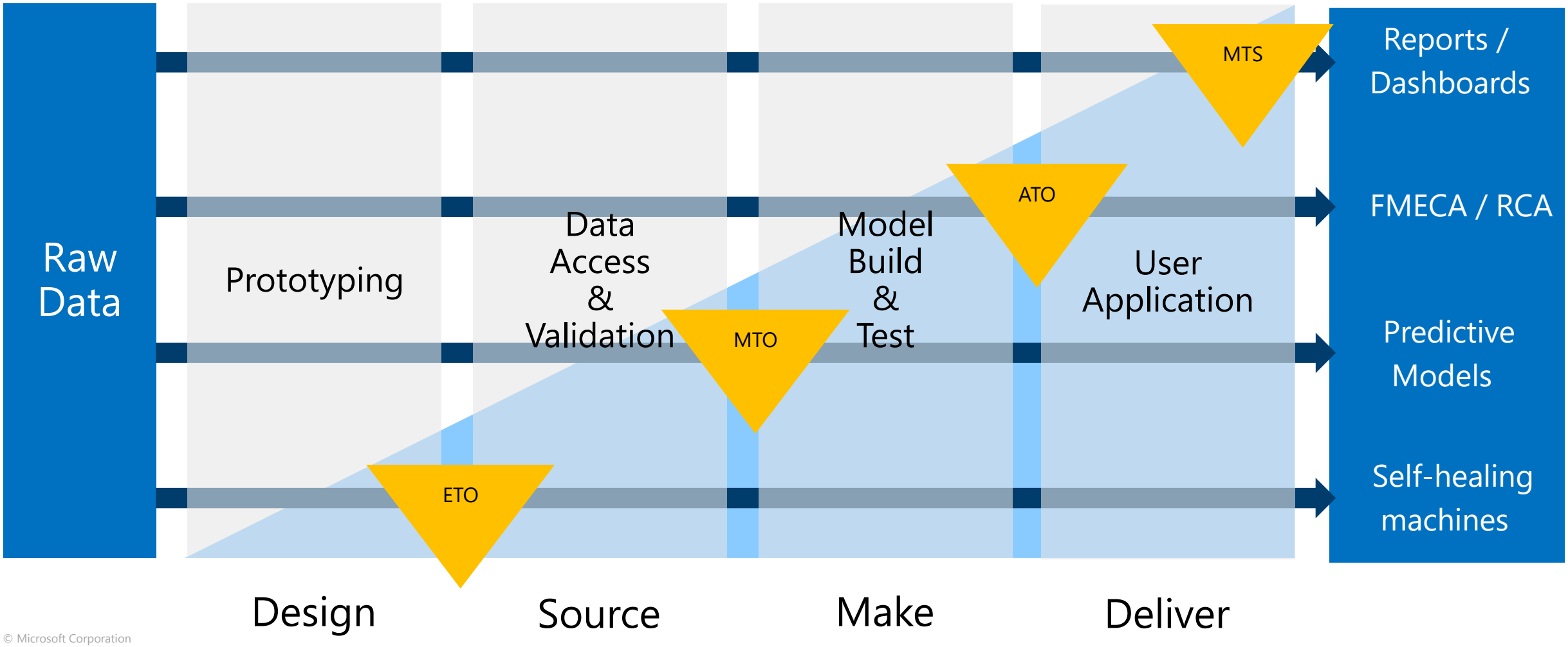
Decoupling point for Data Products



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Aligning Maintenance Activities by Failure Mode

Reliability Centered Maintenance: Systematic approach for understanding the function of the manufacturing system and the failure modes of the components, and choosing the optimal course of action to prevent or to detect them before occurring.[1]

Reactive	Preventative Maintenance	Condition based Monitoring	Predictive Maintenance	Cogitative
• Small items • Non-critical • Inconsequential • Unlikely to fail • Redundant	• Root Cause Failure Analysis • Age Exploration • Failure Modes and Effects Analysis • Acceptance testing	• Random failure patterns • Not subjected to wear • Predictive Maintenance included failures	• Subject to wear-out • Consumable replacement • Failure pattern known	• Self-healing machines • Capital assets • Failure patterns known; repair procedures are automated

Having a Business-First mindset

- Before starting an PdM project, *focus on one and only one business problem*
- *Think ahead* of the next steps and deployment models
- *Begin with a why* and play down the "cool factor" in projects

So what is Microsoft doing - Building the Intelligent Cloud

Digital Agents

Transform engagement with customers and employees

Intelligent Apps

Create future business applications

Business Processes

Transform critical business processes

Azure Intelligent Cloud Services

Bot Services | Data and Analytics | Cognitive Services | Machine Learning

LOB

CRM

Image

Social

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Let's look at some of our customers…

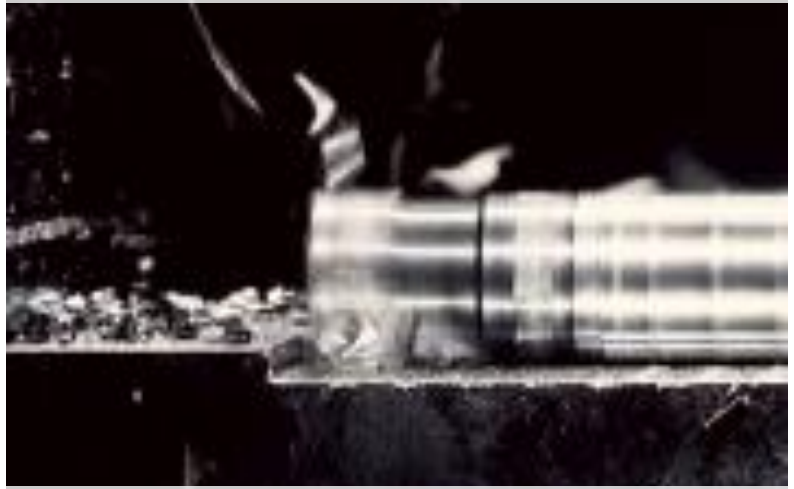
Rockwell Automation

Moving from action to insights

Reduced development time and cost by 80% by gathering and analyzing data more efficiently and increasing automation across the company.

Click to learn more

SANDVIK



Optimizing the factory floor

Used IoT, machine learning, artificial intelligence, and CRM to optimize processes, planning, and predictive maintenance scheduling to avoid downtime.

Click to learn more

Rolls-Royce

Filtering the signal from the noise

Used analytics to discover actionable insights around fuel usage, predictive maintenance and stop unscheduled delays.

Click to learn more

https://www.youtube.com/watch?v=hm0qPwJh-Pw

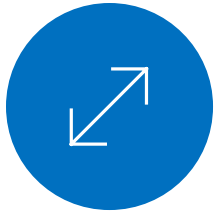
In Conclusion

Microsoft is creating the Data Factory by simplifying IoT and doing the heavy lifting to make it…

Secure
end-to-end

Fast
start in minutes

Open
connect anything



Scalable
grow effortlessly

Thank You!
Stay tuned and learn more..

https://aka.ms/IoTShow

https://aka.ms/IoTSchool

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