



eBook: Factory Insights as a Service empowers manufacturers to quickly capture impact at scale

At PTC, Rockwell Automation, and Microsoft we've seen firsthand how digital transformation is reshaping manufacturing operations. In partnership with Forrester, we surveyed industry executives to examine both the trends shaping the world of manufacturing and the challenges that many organizations face. This eBook is the culmination of our research and experience. It's designed to show strategic decision makers how Factory Insights as a Service empowers manufacturers to deliver as much as 20% performance improvement across their production networks.



Digital transformation is critical to success in a changing industry

Disruption isn't new to manufacturing, but the market is changing faster than ever before. Unprecedented supply disruption and demand volatility are the result of numerous factors, including COVID-19, global competition, a dynamic geopolitical landscape, and a demand for more personalized products.

With these factors affecting revenue, operating costs, and asset utilization, it goes without saying there is a major impact on profit and loss. Manufacturers are under pressure to maximize throughput at the lowest cost without sacrificing quality.

Digital transformation initiatives are mission-critical to remaining competitive. Done right, they unlock the breakthrough levels of performance needed to succeed in today's challenging environment and emerge stronger in a new normal. In fact, **leading manufacturers are seeing a double-digit improvement in performance**, as well as significant advancements in the agility and resilience of their production networks.

Stay focused on the fundamentals.

➤ Focus on financial impact

In this challenging environment, the focus should be on top-line and bottom-line impact. As always, this means increasing revenue, lowering costs, or better utilizing existing assets.

But sharpen your competitive edge.

➤ Take an agile approach to digital transformation

Gone are the days of rip and replace. In comes a new era of wrap and extend—applying Industry 4.0 disruptive technologies and prescriptive solutions to the data and investments you already have. This agile approach enables manufacturers to pursue the most pressing opportunities with minimal disruptions. It leads to value attainment in weeks and months, not years.

➤ Embrace resilience

Manufacturers need to be hyper responsive to rapid shifts in both supply disruption and market demand. By enabling digital operations, manufacturers can quickly recalibrate the production network in order to optimize company P&L.



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67% of manufacturing decision makers report struggling with scale, making it the top challenge to digital transformation.¹

72% expect a significant return on their digital transformation initiatives, but only in two or more years.²

82% of customers say they want to go faster with their digital transformation initiatives.³

^{1, 2, 3} "Drive Transformational Outcomes at Scale: Breakthrough pilot purgatory and capitalize on impact, with speed and at enterprise scale," a commissioned study conducted by Forrester Consulting on behalf of PTC, Microsoft, and Rockwell Automation, December 2020

Many manufacturers are struggling to quickly capture impact at scale

Real transformation is only possible when impact is captured at network scale. However, a recent Forrester Consulting study commissioned by PTC, Microsoft, and Rockwell Automation found that while manufacturers are reporting success with use cases deployed at individual sites, few have effectively scaled those efforts across the production network. A properly invested digital transformation program requires achieving multi-site scale within one to three years—the typical attention span of a CEO.

There are several common factors that lead to scale purgatory.

- ① Focusing on technology rather than financial impact
- ② Lacking executive sponsorship, organizational alignment, and resources
- ③ Selecting technology and resources that aren't scalable or Industry 4.0-capable
- ④ Failing to build a program design plan and governance structure for rapid, multi-site scaling
- ⑤ Taking a do-it-yourself approach to technology and solutions development

Key considerations for quickly capturing impact at scale

Focus on proven, repeatable use cases linked to financial outcomes

The C-suite is focused on driving meaningful impact with the speed and scale that unlocks transformational outcomes. The key: proven, high-value, and repeatable use cases deployed on a scalable architecture.

Embrace a hybrid cloud architecture and edge computing

Site-by-site on-premises deployments require more investment and effort to scale. By strategically leveraging a proven, hybrid Industry 4.0 solutions platform, manufacturers get the flexibility, speed, and security needed to deploy standard use cases across the edge-to-cloud network.

Leverage unified IT/OT digital platforms

Digital transformation doesn't require ripping and replacing current systems. It begins with implementing Industrial Internet of Things (IIoT) capabilities to wrap and extend the IT and OT systems already in place. Existing data can be normalized for consumption throughout the enterprise, helping unlock insights from existing investments.

Consider enterprise program design and governance

Think through the timeline and sequence of scale: starting in one factory with a repeatable use case, establishing infrastructure requirements, and designing a roll-out program for 10 – 30 plants may take two years. In addition, moving from first proof of value to capturing impact at scale within a reasonable timeline requires implementing change management strategies, such as securing executive sponsorship and cross-organizational alignment.



Manufacturers who put financial impact at the center of their transformation and implement scalable technologies achieve the greatest long-term results throughout their business.

Factory Insights as a Service fuels unprecedented speed to impact at scale

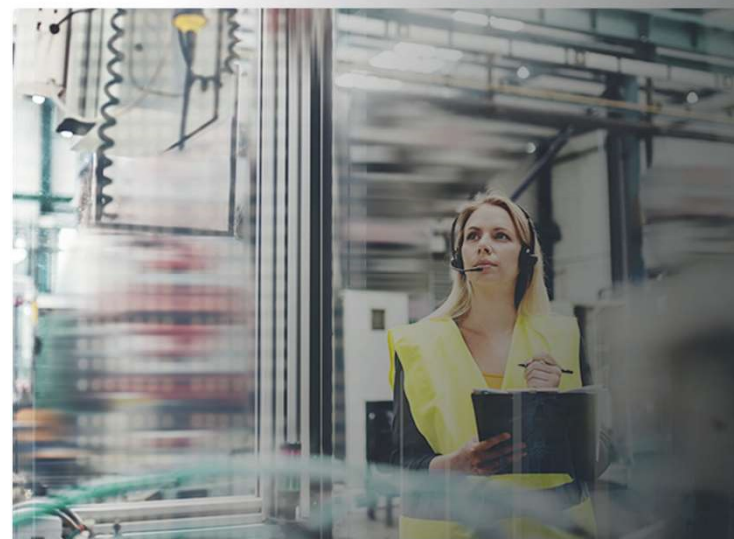
Factory Insights as a Service is a SaaS-based solution that enables manufacturers to achieve transformational impact with unprecedented speed and scale.

This breakthrough digital transformation offering leverages today's best-in-class technologies—including IIoT, AI, and mixed reality—to unlock transformational outcomes in the form of four proven, no-regret manufacturing use cases.

The offering is the result of a combination of Industry 4.0 technologies and capabilities from PTC, Rockwell Automation, and Microsoft. It leverages solutions from PTC and Rockwell Automation's FactoryTalk InnovationSuite®, such as PTC's industry-leading ThingWorx, Kepware, and Vuforia products, deployed on Microsoft Azure with IoT Hub and IoT Edge.

This combination of proven solutions deployed on an edge-to-cloud architecture enables manufacturers to rapidly connect individual sites and efficiently scale projects across their enterprise network. Customers save time and money by reducing the complexity inherent to most IIoT implementations and broader digital transformation efforts.

Factory Insights as a Service empowers manufacturers to realize a double-digit impact through proven, high-value use cases and lay the foundation for digital transformation and continuous improvement for decades to come.



Lay the foundation for industrial transformation with Factory Insights as a Service

^{1, 2, 3} Internal PTC research based on customer results.

Up to
90+%

reduction in development time and cost ¹

As much as
70%

reduction in time to value ²

3x

sites implemented in two years ³

Deliver business impact

1. Enable proven, scalable use cases to maximize impact across a broad production network.
2. Foster a closed-loop management system that empowers people, processes, and machines.



Speed time to value

1. Leverage a rapidly deployed and configurable SaaS-based solution, saving time and money by removing coding and technology complexity.
2. Quickly take advantage of investments in existing assets and systems using a wrap and extend approach.



Capture impact at scale

1. Accelerate enterprise scalability and security with the Azure IoT cloud.
2. Access a global ecosystem of services and technologies.
3. Future-proof your journey leveraging the portfolio and investments of recognized market leaders.

Factory Insights as a Service unlocks breakthrough levels of performance

Performance insights

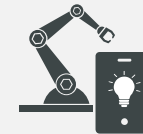
Digital Performance Management (DPM) gives you a real-time, holistic view of operational performance.



Increase volume by up to **20%**
Decrease operating hours up to **20%**
Increase service level by up to **20%**

Asset insights

Asset monitoring and utilization provides real-time visibility into asset performance, status, and overall utilization.



Reduce unplanned downtime by up to **20%**
Decrease energy cost by as much as **13%**

Workforce insights

Connected work cells provide workers with a seamless experience while capturing operational execution data and empower teams to be more productive with less errors.



Decrease scrap by as much as **25%**
Increase productivity by as much as **40%***

Digital and augmented work instructions capture and transfer experts' knowledge and empower frontline workers.

*All statistics sourced from internal PTC research based on customer results.

What's next?

Learn more today at:

www.ptc.com/factory-insights-as-a-service

www.ptc.com/digital-performance-management



Customers around the world have successfully embraced digital transformation across discrete manufacturing, process manufacturing, and energy industries.

[Learn how PTC is accelerating digital transformation](#) for customers like Carlsberg and CIMC, helping them achieve breakthrough performance and double-digit impact at scale.

