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IIoT and the Power of Real-Time Data

Overcoming Data Silos and Information Saturation Across the Enterprise

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Introduction

The industrial Internet of Things (IIoT) has created a new breed of data that impacts every level of the manufacturing ecosystem. From manufacturing operations to service, IIoT helps organizations transform all aspects of their business with solutions that are simple to create, easy to implement, and accelerate time-to-value.

Organizations big and small can now connect insights across the enterprise. This massive datafication has created high volume and high velocity information that is changing how decision-makers view their value chain. But without an infrastructure that helps focus the information excess, all this newly tapped data can be overwhelming—slowing down important decisions, instead of streamlining them.

"Real-time visibility into logistics routes and material flow across the supply chain increases the efficiency of your production and inventory management . . . Easy access to a high volume of near real-time data enables the improvement of current analytics and the development of innovative applications."

—Smart Factory Applications in Discrete Manufacturing: An Industrial Internet Consortium White Paper
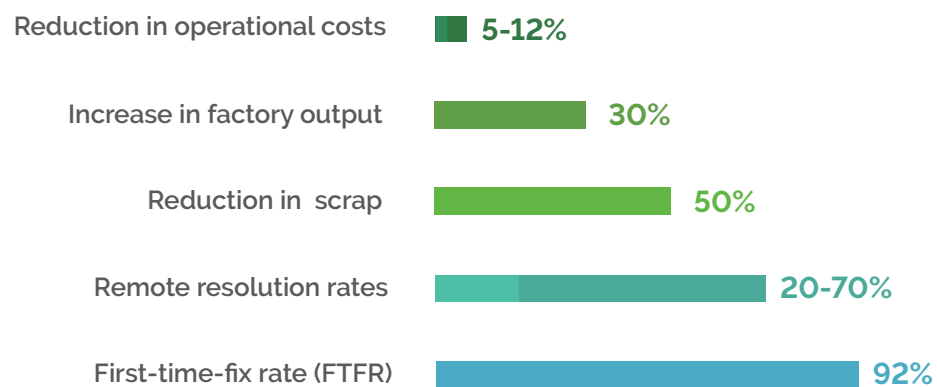
Real-Time Data for Unlocking Value

Accessing and connecting real-time data—which leads to in-depth analytics—naturally improves real-time decisions.

Valuable insights are driven by data, sourced across connected products, people, and processes. Companies that effectively incorporate analytics are able to make smart, real-time decisions that save time and money while building stronger customer connections and providing new insights based on the most correct, clean data available.

Actionable, up-to-date data analytics create many new benefits.

REPORTED RESULTS FROM BUSINESSES INCORPORATING
REAL-TIME DYNAMIC DATA FOR BETTER ANALYTICS

Reduction in operational costs	5-12%
Increase in factory output	30%
Reduction in scrap	50%
Remote resolution rates	20-70%
First-time-fix rate (FTFR)	92%

Source: PTC customer data

Benefits of Data-Driven Analytics

BENEFIT	HOW IT WORKS	OUTCOME
Maximized Revenue & Innovation	In-depth analytics unlock new business models and realize value-add opportunities.	Product-as-a-service, the ability to scale to new markets, and improved throughput. Reduce **overhead** by 5-10%
Improved Quality & Uptime	Real-time performance analytics provide prescriptive information to enable quick-fixes to quality issues, ensuring it's a one-off—or prevented entirely—rather than an enterprise-wide issue.	Secure and scalable product, service, and factory operations. High-quality final product—whether that product is service-based or output-based. Reduce **unscheduled downtime** by 30%
Increased Productivity	Analyze large volumes of complex IoT analytics for actionable insights, predictions, and recommendations.	Connected devices, systems, and control processes run on optimal performance for peak productivity. Increase **operator productivity** by 60%
Improved Efficiencies	Delivery of contextualized, actionable information via role-based views, applications, and tools.	Solutions to complex business problems via data capture and processing, manifesting insights that promote efficiencies such as reduced technician time on site or on a machine. Reduce **time on site** by 80%
Optimized Scalability	Enables new service contracts, easily integrated new plant floor assets, and other opportunities without vendor lock-in.	Accelerate time-to-value and ROI of industrial IoT initiatives. Reduce **new product introduction (NPI) time** by 30-90%

Source: PTC customer data

Actionable Analytics Across the Enterprise

Accessing real-time data insights for the benefits listed above is a start. But integrating and measuring analytics provides a fuller picture—especially when looking to that data for critical metrics and KPIs. Real-time data-driven analytics is the best way to overcome information overload and ensure your insights remain integrated and actionable at all levels and across all roles.

With IIoT, manufacturers and service organizations can unlock data from every single asset, across every remote location, and deliver it to every employee. But Controls Engineers, Operations Engineers, Maintenance Managers, Continuous Improvement Engineers, service technicians, and all the other wide variety of roles across the enterprise have very different responsibilities—and they rely on different types of data. By incorporating custom apps that create a single point of access for different roles—whether a plant floor operator is gaining visibility to identify equipment issues before they impact production or a service technician is getting real-time data insight to pinpoint problems before they impact a customer—the user can better understand their data and the reality it depicts.

Focused Analytics for Specific KPIs Across the Enterprise

Controls Engineers gain the ability to remotely visualize, monitor and troubleshoot industrial data and machine connectivity in real-time—without needing to sift through data dumps or manually input the data they really need. And service organizations leverage real-time visibility into equipment status and health. Accessing the voice of the product enables technicians to identify problems—before they impact the customer.

While IIoT has created real-time data, the ability to funnel data insights to the right person is the next step in creating real-world results—such as a more informed, performant and productive plant floor and more efficient service. Real-time visibility into production status, data connectivity, maintenance issues, operational efficiency, product quality, asset status and health, and other KPIs is useless if the right people can't access the right data.

"Data-driven prescriptive analytics across the value chain is one of the use cases Industrial Transformation leaders are deploying. Leveraging this approach, manufacturers can predict asset maintenance and operational bottlenecks across multiple plants, and gain insights to prevent or resolve the issues."

—Plant Data and Connectivity: Strategic Building Blocks for Industrial Transformation, LNS Research. Published by PTC, accessed July 2020.

Thinking Beyond Data Access: Harness More Powerful Insights and Analytics Now

An IIoT platform used to be the next generation of technology—now it's just the start to ensuring you have actionable information in real-time. Purpose-built, IIoT analytics software is crucial for integrating raw data from the unprecedented number of connected data flows and turning it into reliable information. The ThingWorx IIoT Solutions Platform provides end-to-end capabilities to connect disparate devices and systems, build complex solutions, analyze data, manage device performance, and engage with devices and processes for actionable information that accelerates your digital transformation.

With the real-time data, Controls Engineers have more capabilities to perform condition-based monitoring and draw attention to problems before they impact production or cause data loss. They can troubleshoot in real-time, watching the results even as they experiment with a solution.

Service technicians also leverage real-time remote data that reveals potential equipment failure before it impacts the customer—enabling them to reduce costs, provide more efficient service, and improve customer satisfaction.

For more information on how ThingWorx is driving performance for the industrial enterprise across service and production, read the Analyze: Unlock Actionable Insights in Your Operational Data with Powerful IIoT Analytics Capabilities brochure.

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