ThingWorx Applications for High Impact Industrial Use Cases

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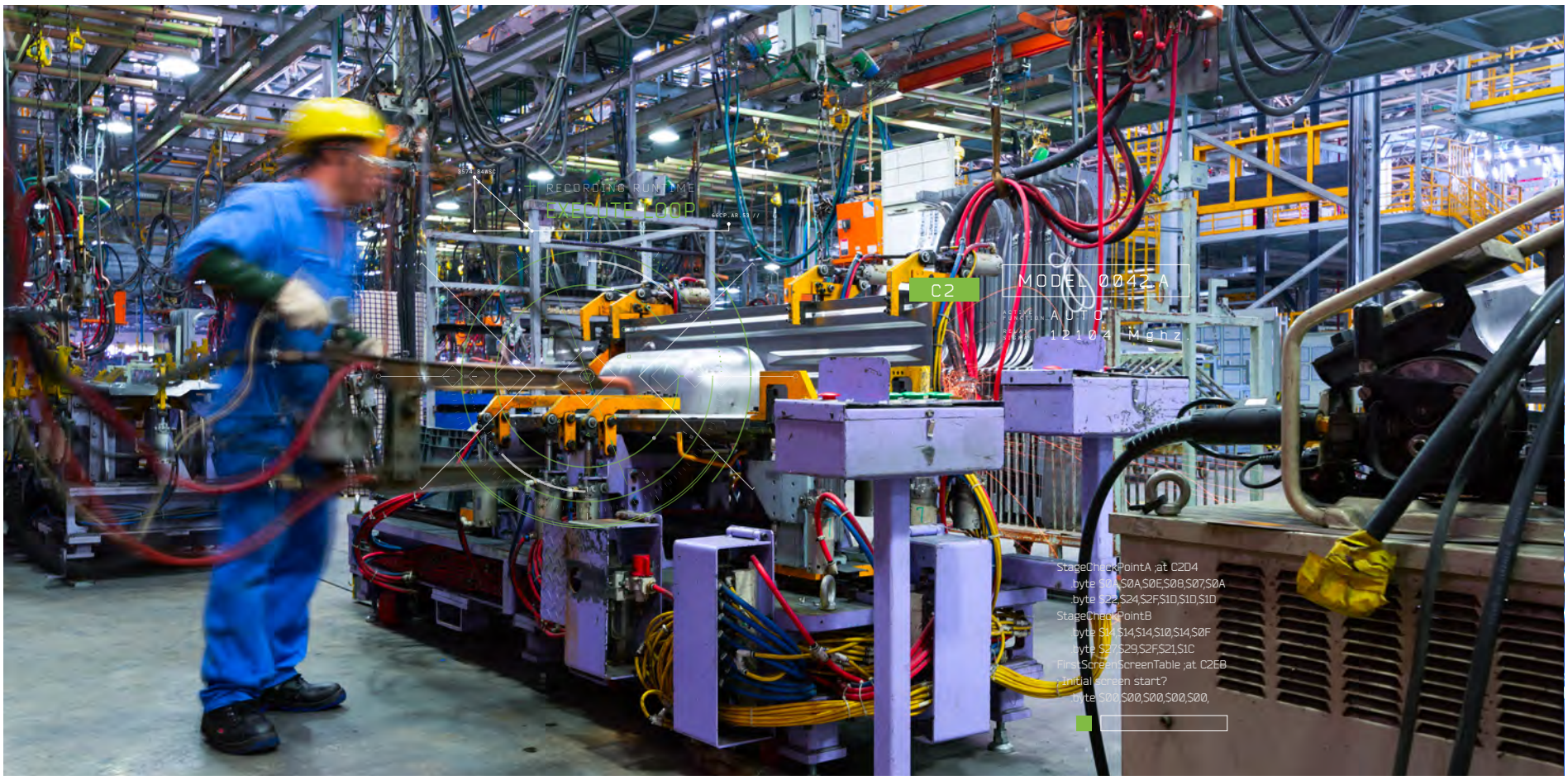


Introduction

Manufacturers are accelerating their digital transformation initiatives faster than ever before. According to Forrester, nearly 3 quarters of executive respondents expect significant business impacts from digital transformation efforts in the next 2 years.*

Even though 87% of decision-makers know it's important to scale applications across all factories, only 16% of all proof of concept (PoC) initiatives have been rolled out enterprise-wide over the past two years. PoC initiatives that are not scalable greatly impact future costs of ownership including maintenance, improvements, and upgrades.

Many of these PoCs get stuck in pilot purgatory and never break through the initial stage to provide production level impact. Initiatives that reach production, on the other hand, often get stuck in a form of scale purgatory. These initiatives realize success at one site, but cannot be duplicated across additional sites. Custom, bespoke implementation approaches are lengthy and tailored to the infrastructure environment at specific site. Then, when it is time for upscaling, the variable data and infrastructure environments across sites do not facilitate upscaling. Instead, each attempt at subsequent implementation across multiple sites introduces new complications and further stalls implementation. The net result, companies are unable to deliver transformative impact in an agile manner, they fail to show value from the overall initiative, and lose momentum on digital transformation.

High Impact Industrial Applications

ThingWorx Applications accelerate time to value and time to scale by focusing on use cases that have substantive impact on the P&L while building a foundation for digital transformation. High impact applications replace custom, bespoke approaches with repeatable, configured-not-coded, applications that leverage the domain expertise from hundreds of successful implementations. These applications vastly reduce the effort associated with designing, coding, and testing new applications. As a result, companies break through pilot and scale purgatory because they can:

- Rapidly deploy to improve time to value
- Scale digital transformation across the enterprise in a fraction of the time

Key Capabilities

- **Ready to configure applications** – Significantly reduce time needed to design code & test applications.
- **Rapid implementation** – Configure-not-code approach services get you started in as little as 90 days.
- **Wrap & Extend** – ThingWorx Applications works with your existing systems and infrastructure. No need to rip and replace.
- **Future-proofed roadmap for continuous innovation** The high impact applications align to the most common requirements. This enables companies to rapidly create a foundation for digital transformation. Using our scalable, extensible platform, they can iteratively extend into additional digital transformation use cases.

- Up to **90%** reduction in application development time & cost
- As much as **75%** faster time to value
- As much as **67%** reduction in time to scale

Real-time Production Performance Monitoring (RTPPM)

RTPPM powers enterprises to:

- Optimize Performance of Existing Assets
- Increase Throughput
- Increase Yield
- Decrease Waste
- Decrease Unplanned Downtime
- Balance Labor Capital Costs with Production Needs

As companies take measures to continuously improve operational performance, understanding and comparing true, current performance across lines and assets is key. Unfortunately, the timeliness of information and different interpretations of performance make it difficult to understand current performance, determine where to take action to improve overall equipment effectiveness (OEE) or compare performance across products, lines or assets.

Real Time Production Performance Monitoring provides manufacturing executives and plant managers with top-down, real-time visibility into consistent KPIs such as OEE, mean time between failure, and mean time to repair. The KPIs can be calculated with data pulled from automation systems, IT systems, as well as manual data entry from operators for additional reason codes.

This allows companies to understand and compare performance across assets, lines, or products based on date, time, shift or crew. They can easily spot trends and drill down into causal events to identify key losses to remediate.

- **20%** increase in OEE
- **10%** increase in yield

Asset Monitoring and Utilization (AMU)

AMU powers enterprises to:

- Rapidly Connect to and Catalog Assets
- Establish Parameters to Track Performance
- Quickly Identify Anomalous Data Trends
- Perform Root Cause Analysis
- Access Performance Information
- Create Configurable Asset Cards

For manufacturers with asset intensive operations, uptime and availability are mission critical; but it is often challenging to connect to existing assets, continuously monitor the parameters that impact asset health and performance, and alert on critical issues before they impact performance. The inability to monitor these assets results in more frequent events with longer unplanned downtime, higher scrap and rework, higher maintenance costs, lower overall asset utilization, and unnecessary capital expenditures.

Asset Monitoring and Utilization helps manufacturers connect to existing assets, remotely monitor them in real-time, generate alerts based on abnormal conditions, and deliver critical insights with data trending and analysis tools. The performance dashboard provides real-time access to each monitored asset including detailed drill downs into asset health, open alarms and performance readings for selected properties and sensors.

They can also establish complex alarms, with condition types, boundary limits, actions associated with those alarms, email and SMS distribution rules for messaging, acknowledgment options, and reporting to drill down into root causes for high priorityalarms.

With integration to maintenance systems, maintenance and reliability engineers can rapidly connect to and catalog assets, establish critical parameters needed to track asset-related performance, identify anomalous data trends, troubleshoot for root cause analysis, and access performance information from any device.

- **5-20%** increase in throughput,
- **20-30%** reduction in unplanned downtime
- **2-13%** reduction in energy consumption

Connected Work Cell (CWC)

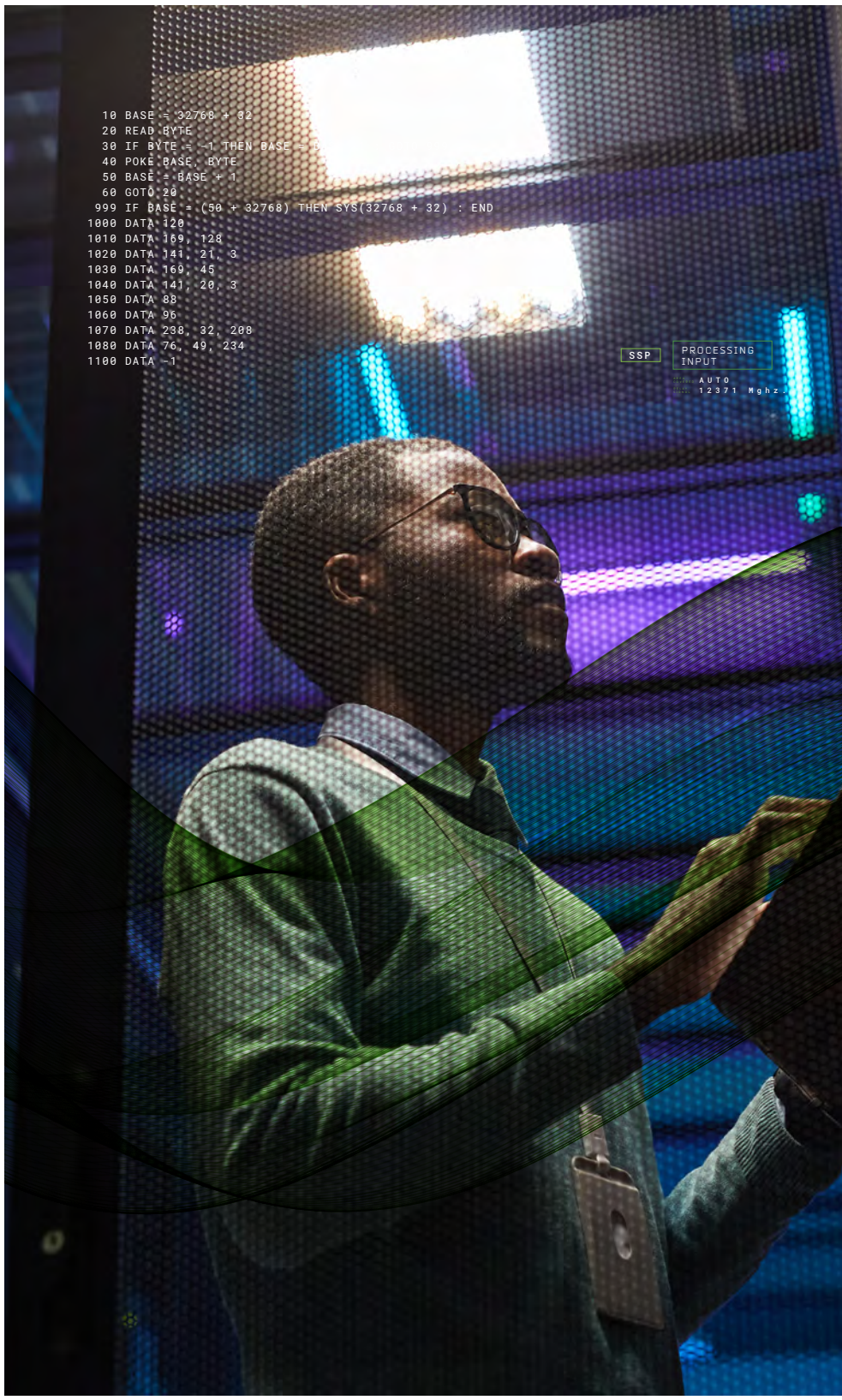
CWC delivers:

- Lite Authoring - Multiple step types and versioning
- Routes Editor
- Work Order Scheduling
- Operator Executing and Step-by-Step Tracking
- Smart Tool Configuration
- Stations Dashboard Display
- File Storage and Document Management

Frontline workers are at the heart of manufacturing but, with increased pressures for productivity, more products to support, more assembly options per product, and fewer operators in total, the job itself is highly complex. They are asked to bring information together from a wide variety of sources like tools, machines, and ERP systems. They then assemble products with paper-based instructions and manually validate assembly in paper travelers. This results in inefficiency and inconsistency across production.

Frontline workers may rely on their personal preference over the printed work instructions. The assembly workflow may be inconsistent across this community, while less experienced workers take a long time to upskill. Additionally, assembly instructions may be out of date. The net result is lower overall production effectiveness (OPE), lower overall labor effectiveness (OLE) and higher scrap & rework.

Connected Work Cell streamlines how information is delivered to frontline workers by aggregating critical data from multiple data siloes into a simplified visual application. It presents step-by-step work instructions with accurate, up-to-date information to drive efficiency, links instructions to work orders, assigns resources, and validates proper execution to ensure quality. Since the work cell now pushes the process and steps to operators, it makes frontline workers more flexible with less need for upfront training and upskilling before being assigned to a new work cell. Integration with connected tools provides bi-directional communication to both download tool settings and collect actual tool data for traceability.



- **10-40%** increase in worker productivity
- **30-65%** reduction in training time
- **3-25%** reduction in time scrap

*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

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To learn more visit:
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