



One platform.
Unlimited innovation.



>Welcome to the Industrial Innovation Platform.

In what has been dubbed the fourth Industrial Revolution – or Industrie 4.0 – the Internet of Things (IoT) continues to blur the lines between the physical and digital worlds for industrial enterprises.

Many forward-thinking enterprises have become keenly aware of the potential of their “things” – including factory equipment, tools, and product inventory – to transform the business as the sources of value and differentiation expand into the digital world. But building a complete IoT system can be a huge undertaking for even the most resourceful companies.

A technology platform designed for industrial innovation provides the tools and technologies needed to create and deliver IoT solutions, augmented reality (AR) experiences and more. A ready-built platform simplifies the process of connecting devices and sensors, as well as systems and assets, and can easily scale to accommodate growth and change – delivering more business value than a do-it-yourself or ad hoc approach. Enterprises seamlessly build robust, easy-to-use IoT solutions that drive innovation through smart, connected products, systems, and operations.



ThingWorx delivers everything needed to drive industrial innovation.

Drive New Revenue Streams

Implement new business models and create value-add opportunities

Optimize Business Processes

Combine real-time data with existing systems to increase efficiency

Enhance Customer Experiences

Leverage insights from IoT data to improve service, support, and usability

Differentiate Offerings

Use powerful new technologies to increase the pace of product and service innovation

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Meet ThingWorx: The Complete Platform for Industrial IoT

Purpose-built for industrial environments, the award-winning ThingWorx industrial innovation platform empowers organizations to transform how they operate and compete in the smart, connected world by rapidly implementing IoT solutions.

A complete, end-to-end technology platform, ThingWorx delivers the functionality, flexibility and agility needed to develop, deploy and extend IoT applications and AR experiences. The platform contains a broad set of features, including multiple connectivity options, application development tools, analytics, and AR – all built around the ThingModel, which is a single, real-time view of a physical object.

With ThingWorx, industrial businesses can create scalable and secure solutions that provide high levels of return on investment.

ThingWorx empowers industrial businesses to:

- > **Connect** disparate devices and applications to enable access to multiple data sources
- > **Build** complete industrial IoT solutions and AR experiences quickly and easily
- > **Analyze** complex industrial IoT data for real-time insights, predictions and recommendations
- > **Experience** and engage with physical objects in a more contextualized, actionable way
- > **Manage** the performance of connected devices, processes, and systems
- > **Accelerate** time-to-value and return on investment (ROI) of industrial IoT initiatives



Leading the Industrial Revolution

ThingWorx delivers tools and technologies that eliminate complex connectivity, programming and deployment tasks.

> Purpose-Built Platform

Specific functionality designed for industrial IoT, including the connectivity, scalability and security to grow with your business

> Rapid Development, Deployment, and Extensibility

Integrated platform features enable seamless development for quick and easy delivery of apps and AR experiences

>>> Industry Awards and Recognition



> Ultimate Flexibility

Deployment options in the cloud, on premise, or hybrid environments – including optimizations for Microsoft Azure. Integration with external data sources to simplify processes and ensure more meaningful results

> Engage and Experience

Build user interfaces with drag-and-drop tools and deploy them in web and mobile applications and AR experiences – without the need to write code

> Vibrant Ecosystem

ThingWorx is compatible with a wide range of products and services that simplify, accelerate and enhance manufacturers' processes and strategies

Connect

Interoperability between devices and machines is the biggest challenge facing the industrial IoT – but is also the key to implementing and realizing the value of industrial IoT deployments.

ThingWorx connects disparate devices, applications and cloud sources, providing a single source of industrial automation data to multiple applications. Powered by Kepware® industrial connectivity, and with access to more than 150 device drivers, client drivers and advanced plug-ins, ThingWorx enables connectivity to thousands of devices and other operations data sources.



Interoperability

Data access and integration is enabled via interfaces to on-premise web servers, off-premise cloud applications and hybrid environments

Real-Time Insight

Edge computing capabilities transform data into actionable insights at the source, eliminating issues with latency, cost, and security

Secure Communications

Enhanced messaging security via SSL and TLS enables secure, authenticated and encrypted communications across various network topologies that meet site security requirements



Build

For many industrial businesses, driving digital transformation is uncharted territory, where conventional methods and technologies no longer apply. A new technology infrastructure for IoT application development must be established.

ThingWorx delivers the solution in a single platform. With deep functional capabilities and the industry's largest ecosystem of partners, ThingWorx enables rapid development of comprehensive, feature-rich industrial IoT applications and AR experiences.



Fast Time-to-Value

Model-driven application design enables developers to create, test and deploy solutions quickly and easily - without manual coding

Seamless Developer Experience

Connection of all ThingWorx components and flexible connectivity to disparate devices and data sources minimize integration work

Scalability

Scalable to meet varied and changing business needs, providing support for the smallest to the largest deployments



α Analyze

Devices are being connected at a rate of billions per year, generating unprecedented volumes of data - potentially in new and varying formats. In a world where real-time information is quickly becoming the standard, managing and extracting insight from industrial IoT data poses real and significant challenges.

ThingWorx uses sophisticated machine learning technology to mitigate these challenges – simplifying industrial IoT analytics for the everyday developer and users. ThingWorx delivers reliable and actionable advanced insights in real time.



Simple User Experience

Intuitive, user-friendly interfaces, tools, information and visualizations enable complex analytical capabilities for the non-expert user

Powerful Insights

Automated industrial IoT data analytics generate insights, predictions, recommendations and forensics that can be operationalized across business functions to enhance decision-making enterprise-wide

Optimized Outcomes

Prescriptive and simulative analytics diagnose problems and provide recommendations for how to achieve or change a predicted outcome



α Experience

Companies must consider the contexts in which to present digital information and insights based on a user's persona. These can range from a dashboard on a workstation to an AR experience on a mobile or wearable device.

ThingWorx provides compelling experiences that engage users with real-time IoT data. Dynamic user interfaces and dashboards for web and mobile facilitate user engagement through actionable visualizations tailored for the intended audience. Built-in integration with the market-leading industrial AR technology from Vuforia streamlines the creation of powerful AR experiences for multiple devices.



Contextualized Information

Experiences are enhanced with real-time IoT data and analytics, 3D content, CAD data, and other enterprise system data to more effectively achieve business goals

Turnkey Authoring and Publishing

User interfaces and AR experiences are created in minutes with drag-and-drop tools that don't require programming skills

Compelling AR Experiences

Rich, dynamic AR experiences provide a composite view of digital and physical product data, dashboards, and alerts



Manage

Proper management of connected devices and equipment is critical to IoT success. ThingWorx empowers users to easily define, monitor, manage and optimize the performance of connected devices and processes. ThingWorx developers can add a custom selection of pre-defined application components to ensure optimal performance, including software content management and workflow capabilities.



Simple Administration

Users connect, manage, monitor and control devices and applications through a single, intuitive user interface, minimizing the need for IT intervention

Reduced Service Costs

Industrial IoT-enabled workflows are configured to trigger alerts and actions for automated business processes to keep operations running smoothly

Improved Protection of Investments

Bulk updates and upgrades can be easily and securely distributed to connected devices to ensure optimal performance



Accelerate

A pioneer in bringing IoT to the industrial ecosystem, ThingWorx has a deep, rooted understanding of the day-to-day needs of developers and users of IoT solutions. Based on extensive experience working with customers and partners in real-world scenarios, ThingWorx has developed a collection of easy-to-use, pre-configured, role-based applications that enhance visibility, productivity, and performance across the business.

ThingWorx Apps enable businesses to build, deploy and maintain ThingWorx-enabled solutions on their own terms. ThingWorx Apps are easily installed and configured without impacting production. They are 100% web-enabled and accessible via any browser – enabling users to view, understand and act on industrial data in real time, accelerating time-to-value. Using ThingWorx Apps, businesses are better-equipped to optimize asset performance and meet the demands of ever-shortening product cycles to outpace growing competition.

PTC Marketplace

The PTC Marketplace provides a one-stop shop for hundreds of resources to build, customize, and run ThingWorx-based IoT solutions. It features a wide selection of tools, extensions, apps, and solutions from ThingWorx and its partners that have all been tested and guaranteed to work seamlessly with the ThingWorx industrial innovation platform.

ThingWorx Developer Portal

The ThingWorx Developer Portal is an online destination for access to ThingWorx- and partner-provided resources that enable developers to easily learn about, explore, and use ThingWorx technologies.



>>> The ThingWorx Partner Ecosystem

ThingWorx maintains one of the world's largest networks of industrial IoT-focused developers and partners, offering a wide range of products and services from partners that simplify, accelerate, or enhance processes and strategies.

Technology providers, solution providers and global systems integrators join with ThingWorx to explore new business opportunities in the industrial IoT. ThingWorx provides the leading technologies, tools, and resources needed for partner success and invests in enabling and growing the partner network for the benefit of a joint, global customer base.

ThingWorx showcases innovative technologies and solutions of its partners to engage customers through marketing, sales, and other channels.

> Complement

Partners expand market visibility by aligning hardware and software products with ThingWorx, validating that they integrate easily with ThingWorx solutions.

> Sell

By selling or distributing ThingWorx solutions, partners can grow and scale their own businesses by offering integrated solutions customers need.

> Service

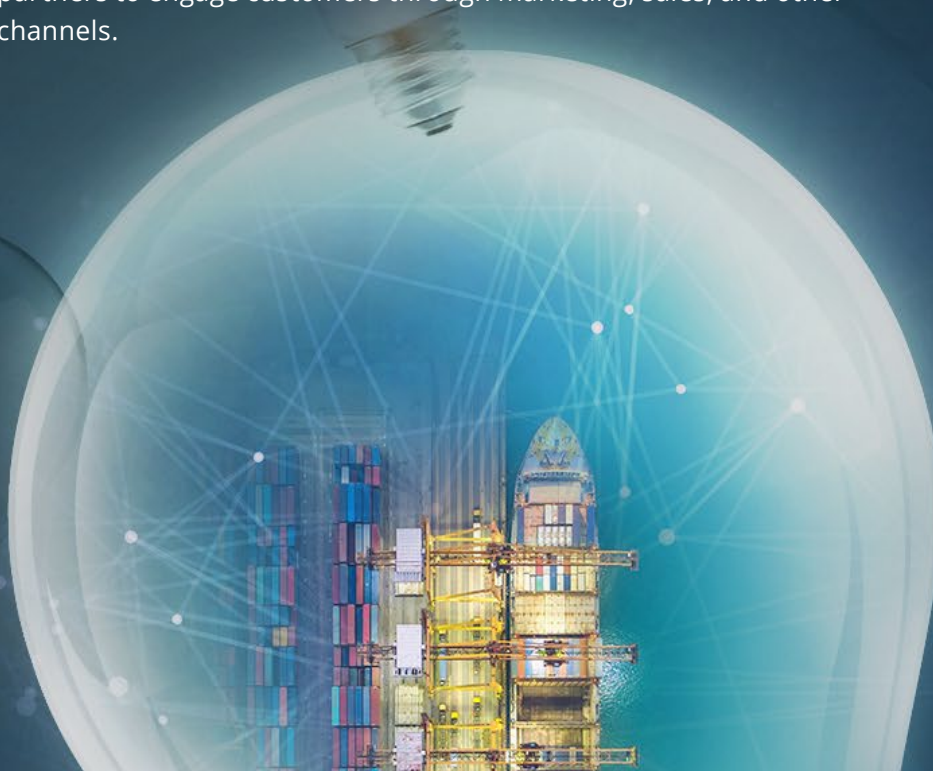
The ThingWorx partner network provides access to resources that enable partners to provide first-class services and training to their customers.

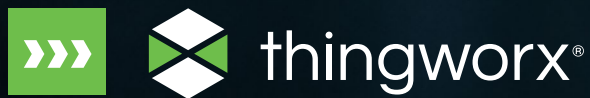
> OEM

Partners rapidly build and commercialize your solutions by embedding or bundling ThingWorx technologies and gain access to partner resources to support development and launch. I and physical product data, dashboards, and alerts.

> PTC Marketplace

Offers partners a unique opportunity to promote applications, products, and solutions directly to the market alongside ThingWorx and other compatible solutions and technologies .





>>> **ThingWorx:** One Platform. Unlimited Innovation.

PTC helps companies around the world reinvent the way they design, manufacture, operate, and service things in and for a smart, connected world. In 1986, we revolutionized digital 3D design, and in 1998 were first to market with Internet-based product lifecycle management. Today, our leading industrial innovation platform and field-proven solutions enable you to unlock value at the convergence of the physical and digital worlds. With PTC, manufacturers and an ecosystem of partners and developers can capitalize on the promise of the Internet of Things and augmented reality technology today and drive the future of innovation.

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