

ACCELERATE IIOT WITH FLEXIBLE, PURPOSE-BUILT SOLUTIONS

The ThingWorx® platform from PTC helps enable digital transformation by giving manufacturers the right tools to flexibly build and securely scale their IIoT solutions

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THE CHALLENGES OF IIOT

Recent years have seen an explosion of the Industrial Internet of Things (IIoT) as enterprises of all types and sizes have been implementing new, innovative, and smart solutions. Broadly known as Industry 4.0—a new phase in the Industrial Revolution that focuses heavily on interconnectivity, automation, machine learning, and real-time data—the promises are great: operational efficiencies, new sources of revenue, better customer relationships, and faster time to market.

So, what's the problem?

Unfortunately, it can be hard to know how to get from where you are now to where you want to be. Industrial customers are prioritizing their investments in digital manufacturing. But IIoT data is collected from already complex environments, leading to many questions about everything from security and data integration to management and analytics. The clearest path is to architect systems according to business goals. However, those can be hard to articulate.

To make matters more complicated, many organizations feel that they should build and manage their own solutions. But do-it-yourself solutions tend to offer little operational or financial benefit. They can distract from the core function of the business. Self-built solutions can be difficult and take too long to implement, are expensive to maintain, and can be challenging to deploy across sites. And finally, stand-alone systems that don't connect to each other can lead to data siloes and reduce efficiency.

Almost 1/3 of IIoT projects fail at the proof-of-concept stage*

Visualize a different approach

At the end of the day, successful IIoT initiatives help manufacturers focus on their core competencies and enable business value. Consider partnering with a company that can help you achieve those goals by delivering a single solution that offers these four key components.

Works with your existing systems

You shouldn't have to rip and replace your existing technology; wrap and extend your solutions instead.

Includes pre-built solutions

Don't waste time reinventing the wheel to get manufacturing efficiency and service optimization.

Addresses common challenges

Solutions that are rapid to deploy and ready to scale help you start getting value almost immediately.

Facilitates connections

Organizations need to build connected solutions that pull together all data from different systems to speed innovation.

And that's where the ThingWorx platform from PTC can help.

THE VALUE OF THINGWORX

ThingWorx is a complete, end-to-end technology platform designed for industrial enterprises to digitally transform every aspect of their business with innovative solutions that are simple to create, easy to implement, scale to meet future needs, and accelerate time to value.

With ThingWorx, you'll get a complete set of tools and functionality

A pioneer in IIoT, PTC has spent decades identifying trends and usage patterns among industrial enterprises that define the most common use cases for IIoT solutions. Combine that with the power of Azure for a hyperscale solution with rich data analytics and insight in the cloud, and you'll get a complete platform for your manufacturing environments.

Why choose ThingWorx?

ThingWorx offers immense value for manufacturing scenarios.

- Reduce costs and increase efficiencies by using data from connected products and systems.
- Unlock new business models—such as product-as-a-service—to realize value-add opportunities, scale to new markets, and improve throughput.
- Go to market faster with rapid application development and a vast set of capabilities to wrap and extend existing solutions.
- Accelerate secure, scalable innovations for products, services, and factory operations.
- Get flexible deployment options include on-premises, cloud, or a hybrid approach, adaptable to any industrial use case.



Connect

Collect, aggregate, and enable secure access to data; connect to thousands of devices through driver and plug-in libraries



Build

Drag and drop creation of apps, dashboards, workspaces, and more; seamless integration across ThingWorx and third-party apps and systems



Analyze

Sophisticated artificial intelligence and machine learning; reliable, actionable insights in real-time



Manage

Out-of-the-box functionality for optimal performance; improved uptime, compliance, visibility, and reduced cost



Experience

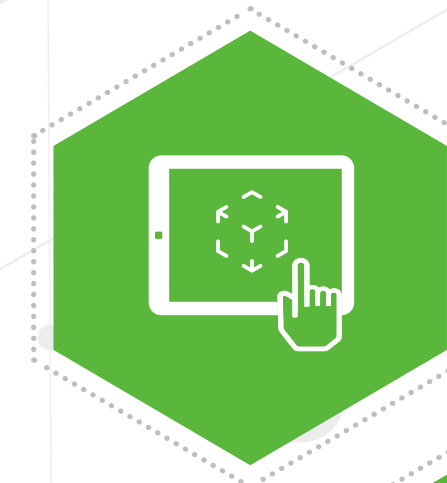
A smart, connected environment that creates dynamic and engaging data presentations; data insights are contextualized and visualized through web, mobile, or AR experiences

HOW THINGWORX FUNCTIONS

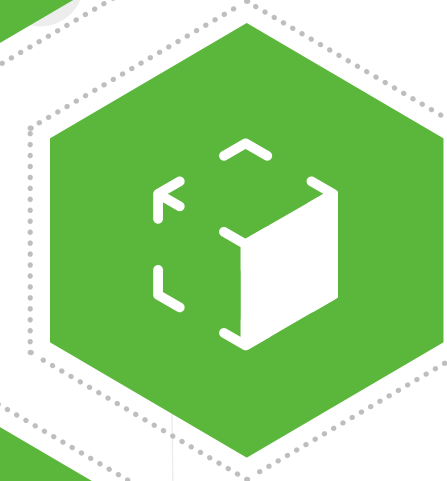
ThingWorx is a highly flexible platform that meets the need of industrial enterprises. Whether remotely monitoring and servicing assets, improving workforce efficiency with operator or digital work instructions, or improving quality, efficiency, and reliability, ThingWorx offers applications that are built with extensibility and customization in mind.

A rich set of capabilities that spans design, manufacturing, service and operations

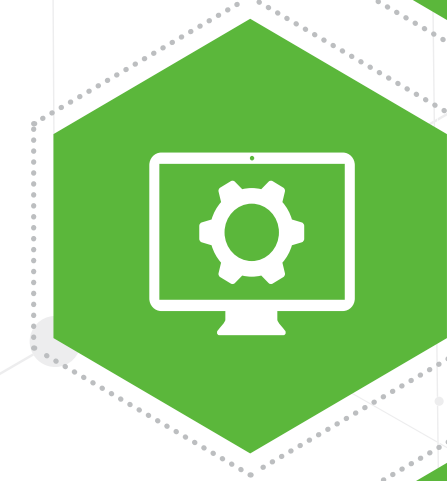
When you choose ThingWorx, you'll get a vast array of tools, including a series of building blocks (a collection of pre-defined, pre-built configurations) which simplify how you develop your IoT solutions and enable modular flexibility. This gives users and team members the ability to view, understand, and act on your data in real time.



User-friendly tools and technologies to develop, customize, and deploy powerful applications



Modular functionality that simplifies development while providing the ability to customize solutions



Pre-built web-enabled applications based on actual use cases for fast, easy implementation

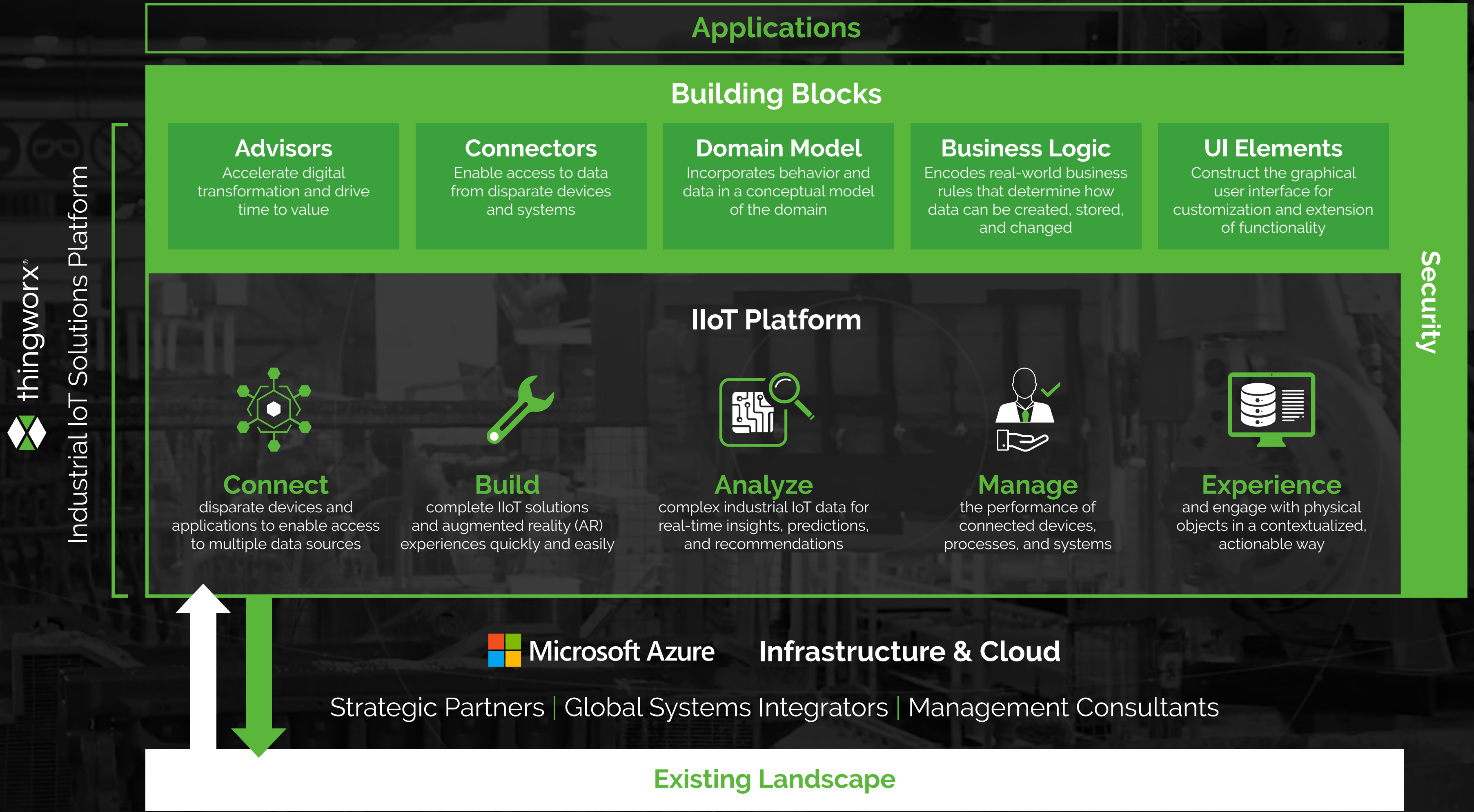


Powerful IIoT enablement across applications, dashboards, workspaces, and mobile interfaces



Connection and context that enable looping insights back into the enterprise for increased visibility, efficiency, and effectiveness

THE POWER OF THE THINGWORX PLATFORM



PTC has perfected the IIoT platform

ThingWorx provides an architecture that enables customers to create, scale, customize and implement solutions that meet their specific needs. Whether remotely monitoring and servicing assets, improving workforce efficiency with operator or digital work instructions, or improving quality, efficiency, and reliability, ThingWorx offers applications for a variety of companies in many different industries.



ESAB IMPROVES WELDING PRODUCTIVITY

SITUATION

ESAB, a division of Colfax based in Sweden, has provided the welding industry innovative and reliable products for more than 116 years. With the emergence of IoT, it saw an opportunity to collect and monitor data to improve welding quality and productivity for their customers, as well as address challenges like the skills gap and burdensome documentation requirements.

SOLUTION: PRODUCT INTELLIGENCE

Initially, the company created its own on-premises solution, but soon realized that its time was better spent on activities related to its core business. ESAB decided to work with PTC and Microsoft to create a complete online management system that connects and analyzes data from welding equipment and other supplies. The company uses data from this system internally, and makes it available to its customers.

BENEFITS

- Enabled its customers to notify service technicians proactively when there are issues with equipment
- Gained the ability to evaluate equipment performance and make product improvements by seeing exactly how customers are using equipment
- Digitized the entire welding process—vital for advancing the education of new welders



CIMC

CIMC REDUCES UNPLANNED DOWNTIME BY 30 PERCENT

SITUATION

China International Marine Containers (CIMC), a global supplier of logistics and energy equipment was faced with productivity loss that stemmed from unplanned machine downtime. With production data trapped in siloes—and no way to see it—the company wanted to build an IIoT foundation that could help accelerate digital transformation across its enterprise and make the smart connected factory a reality.

SOLUTION: REAL TIME PRODUCTION PERFORMANCE MONITORING

CIMC launched a smart manufacturing initiative at its Qingdao and Ruijiang factories that used ThingWorx and Azure to integrate IoT into its Manufacturing Execution System (MES) and gain the ability to visualize operational data throughout the entire manufacturing process.

BENEFITS

Within two months of deploying the solution, CIMC has been able to:

- Slash unplanned downtime by **30 percent**
- Reduce Work in Progress (WIP) costs by **16 percent**
- Lower energy consumption by **13 percent**
- Reduce manufacturing cycle time by up to **20 percent**





CARLSBERG IMPROVES THE PERFORMANCE OF GLOBAL PACKAGING LINES

SITUATION

Multinational Danish brewer Carlsberg needed a better solution for measuring the overall equipment effectiveness (OEE) of different types of aging assets—and it needed a solution that would work for more than 250 complete packaging lines around the world.

SOLUTION: ASSET MONITORING & UTILIZATION

Carlsberg worked with PTC and Microsoft to create a solution that would work on top of its existing assets. Based on ThingWorx and Azure, the solution improved OEE, without disrupting operations.

BENEFITS

- Implemented at one new factory each month since initial rollout in 2018
- Accelerated OEE improvements
- Increased operational performance
- Gained real-time visibility into factories





HOWDEN DELIVERS DATA-DRIVEN ADVANTAGE

SITUATION

Howden, a global leader in manufacturing air and gas handling solutions, wanted to use IoT and Mixed Reality to enhance product functionality and provide more value to its customers and stakeholders.

SOLUTION: CUSTOMER SELF-SERVICE

The company started using ThingWorx to gather and analyze critical equipment data to provide customers with insights—and optimize equipment performance and operational efficiencies.

BENEFITS

- Reduced solution roll-out time from years to months
- Enabled new visibility into manufacturing data
- Transformed customer relationships from transactional to collaborative



BETTER TOGETHER: PTC + MICROSOFT

The partnership between PTC and Microsoft brings together ThingWorx, one of the world's leading industrial IoT platforms, with Azure, the world's supercomputer to accelerate digital transformation across the enterprise. From manufacturing, supply chain and engineering to sales, marketing, and customer service, organizations get seamless, secure, pre-built solutions that intelligently decrease time to value and unlock new growth opportunities.

PTC is a 2019 & 2020 Microsoft Partner of the Year Winner and has received the Manufacturing and Resources Award, Internet of Things Award, and Mixed Reality Award.



FASTER TIME TO VALUE

Pre-built, ready-to-configure solutions from Microsoft and PTC reduce complexity and deliver faster time to value.



DEEP INDUSTRY EXPERTISE

Together Microsoft and PTC offer more than three decades of industry domain expertise.



ENTERPRISE-GRADE PLATFORM

Microsoft and PTC solutions offer scalability, security, broad global footprint and unparalleled intelligence.



PARTNERSHIP ECOSYSTEM

An industry-leading ecosystem of joint partners covers all aspects of the solution across OT and IT.



CUSTOMER SUCCESS

Best-in-class customer success programs offer a fully guided journey through implementation.

GET STARTED TODAY

For more information and to contact us, please visit us [here](#).

NEXT STEPS

DISCOVERY



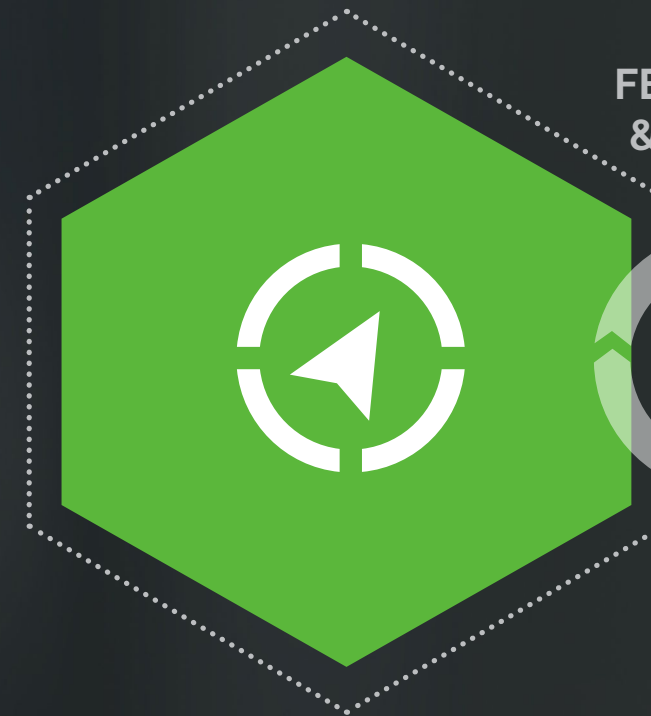
Initial leadership discovery workshop to align on the overall objectives and priorities with value opportunity as input.

VALUE



Deeper dive into the priority areas to quantify the value opportunity, business risk, and ease of realization.

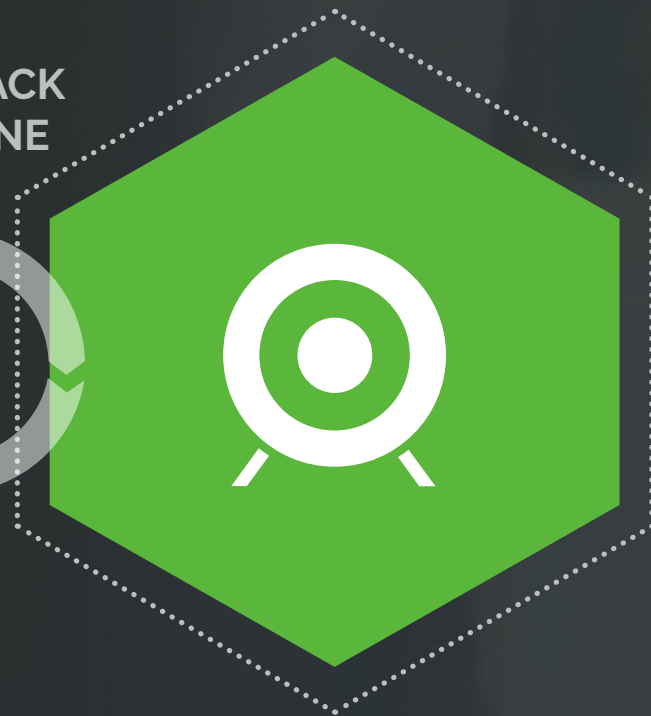
JOURNEY



Create a joint roadmap based on the customer's key value-creating initiatives.

FEEDBACK
& REFINE

PROVE



Rapidly prove the value of roadmap initiatives, and scale to realize benefits.

SCALE

