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# Aligning Digital Transformation Initiatives to Value:

3 Steps to Advance Pilots and Achieve Scale

## THE STATE OF MANUFACTURING IN THE AGE OF INDUSTRY 4.0

As companies leverage Industry 4.0 to create competitive advantage, today's manufacturing leaders are in the midst of the most meaningful business transformation to occur in their lifetime. I4.0 and its exponentially growing technologies accelerate not only the rate of change in manufacturing but perhaps most importantly, the scale of change. Early adopters have already realized significant benefits, including increased asset efficiency, improvements in cost reduction, and a more flexible supply chain. In particular, the enterprises with at-scale deployments are achieving double-digit improvements against KPIs like factory output, inventory levels, and lead time<sup>1</sup>.

Results like these create a seismic shift in industry-wide operations and advance the competitive baseline. But while early movers drive significant benefits, many have yet to realize digital transformation's full potential. Even the manufacturers running a variety of I4.0 initiatives struggle to scale out of the pilot stage. Failure to drive change at scale jeopardizes the enterprise's position as an industry leader. So, what is causing this disconnect and how can manufacturers overcome it?

At PTC, we work closely with manufacturers to propel them towards success in today's evolving landscape—and set higher standards for competing enterprises to beat. In this eBook, we explore the common challenges preventing transformation and how to defeat them using a three-pronged approach to value creation—which we consider as cost per unit impact.



## MOST COMMON CHALLENGES LIMITING DIGITAL TRANSFORMATION

The chasm between initiating pilots and achieving value is a result of three interrelated challenge areas:

### FINANCIAL



Many companies begin their digital transformation with a tactical, technology-focused approach that identifies, evaluates, and pilots technologies as a series of isolated projects. This approach excludes business impact, complicating the ability to scale and achieve ROI.

### PEOPLE



A technology-first approach fails to account for the resources needed to unlock value, creating a digital talent gap among existing personnel. Even when the initial pilot is deemed a success, this lack of skilled personnel complicates the enterprise rollout.

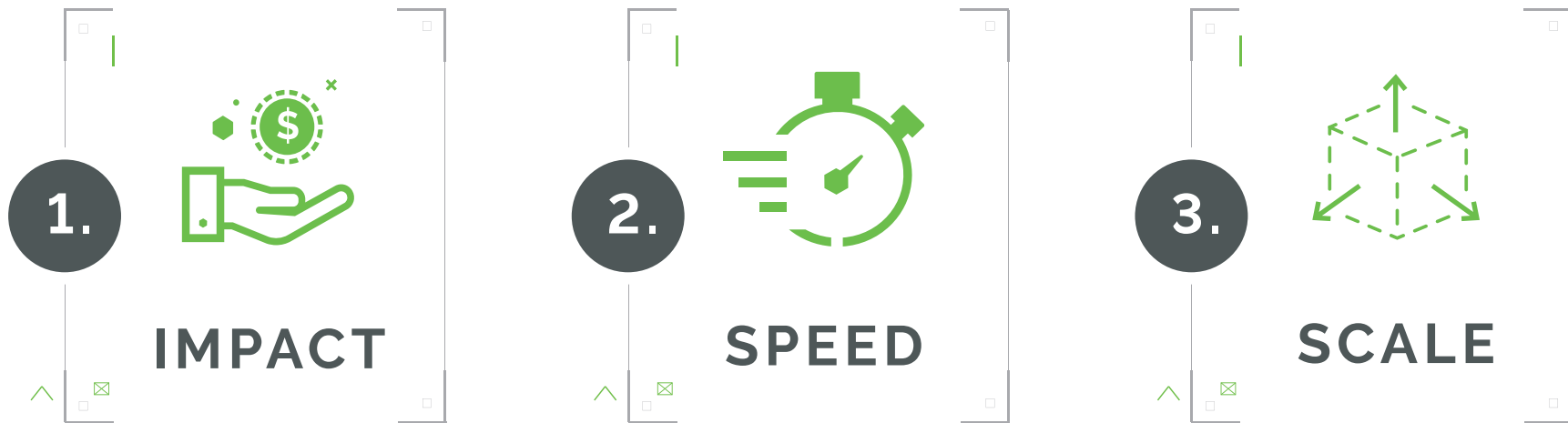
### OPERATIONAL



Without a focus on value, there is a lack of company-wide prioritization of the most beneficial and repeatable use cases. Without a scaling plan in place, the pilot's sponsors discover too late in the project that these operational challenges have become compounded.

## ALIGNING DIGITAL TRANSFORMATION PILOTS TO VALUE

Having reached the inflection point, manufacturers need a future-proof method of unlocking the double-digit impact of I4.0. To achieve value at scale, PTC provides strategic guidance and enabling technologies to help manufacturers align their pilot initiatives to drive cost-per-unit impact. From our deep experience and broad industry perspective, we generated a step-by-step framework to unlock value creation:





# IMPACT



## BARRIERS:

With a technology-first approach, digital transformation leaders often fail to socialize how their initiatives align with overall corporate goals. If pilot outcomes stay confined to the plant floor and aren't articulated upwards, it creates an internal perception that executives cannot support or justify the initiatives at enterprise-scale. This impedes decision-making and leads to a longer delivery, causing the pilot to languish in purgatory and the firm to lose competitive advantage.

## GOALS:

Establish the connection between financial outcomes and the operational improvements and create closed-loop, executive-level communications that put financial-impact at the center of digital transformation.

## HOW TO ACHIEVE **IMPACT**:

Utilizing PTC's financial-impact first approach, companies can determine the greatest areas of opportunity by aligning their I4.0 initiatives to their top-level business priorities.

- Connect financial goals to the company's desired operational outcome, including increased throughput, improved quality, and reduced material usage
- Identify the value drivers, such as reduced downtime, increasing labor productivity, and reduced waste, to support the desired outcomes
- Focus on deploying high-value I4.0 use cases, like asset monitoring, predictive maintenance, and predictive quality analytics, and map them to the relevant PTC technologies
- Socialize improved results to the broader, cross-functional leadership team

After the use cases are deployed, socialize the realized improvements to the broader, cross-functional leadership team. Armed with the relevant evidence needed for their next pursuit, the company can prioritize resources, eliminate obstacles, and accelerate deployment of future pilots.

# SPEED



## BARRIERS:

Enterprises eager to get digital transformation underway typically employ use cases with a technology-first approach rather than identifying digital solutions based on process constraints. On average, manufacturers end up running an average of eight transformation-related pilots across their operations that each takes up to six months but 75% fail to implement at scale<sup>2</sup>. This rate of deployment makes it difficult to achieve the speed needed to execute and achieve value at the enterprise-scale.

## GOALS:

Position the enterprise to achieve value rapidly by establishing a prioritization model that develops each I4.0 initiative with a focus on constraints and deploy the projects in an agile, iterative manner.

## HOW TO ACHIEVE SPEED:

Instead of viewing the production process at-large, PTC delivers implementation speed by narrowing the focus to production bottlenecks within a specific environment.

- Identify the constraints responsible for additional costs, productivity losses, and excessive CapEx spending
- Prioritize the most critical addressable opportunities, based on financial-impact and scalability
- Apply our problem-solving digital technologies
- Revisit line performance to measure improvement for each step in the production process and calculate the new performance baseline





# SCALE

## BARRIERS:

Following a standard sequential deployment process, manufacturers typically apply a digital technology pilot on one line within a single plant, lasting between three and six months. If a plant with ten production lines maintains this deployment pace, manufacturers need three to five years to roll out pilots to the remaining nine lines. Implementing in a serial fashion would take decades to scale deployments across the global enterprise, making it impossible to sustain the momentum needed to achieve meaningful business impact.

## GOALS:

Expedite value creation through enterprise-wide digital transformation by simultaneously rolling out capabilities across tens of plants and reducing the deployment time in subsequent sites from decades to 24-36 months.

## HOW TO ACHIEVE SCALE:

With the joint expertise of PTC and our partner ecosystem, we deliver an iterative approach to scaling pilots, exploring additional use cases, and expanding geographically. The simultaneous deployment of digital capabilities across multiple sites requires:

### The right team

- Consists of the right people and ecosystem partners with the I4.0 expertise that can drive behavior changes across the factory
- Acts as digital transformation champions and gets the firm on the same page

### A digital performance management system

- Delivers analytics-powered, actionable intelligence
- Eliminates redundant efforts and poor visibility

### A digital backbone

- Connects and democratizes the enterprise's advanced enabling technologies
- Acts as a common platform for universal connectivity, data models, analytics, and user experience

## DRIVING BUSINESS IMPACT WITH PTC'S MANUFACTURING SOLUTIONS:

PTC unleashes industrial innovation with award-winning, market-proven solutions, powered by industry-leading IIoT, AR, and analytics technologies, that help manufacturers:

- Create continuous improvement by prioritizing strategic, scalable improvement initiatives
- Advance operational performance with real-time visibility into people, processes, and machines
- Maximize workforce productivity while improving safety, quality, and labor costs
- Reach new levels of efficiency by delivering the right data to the right worker at the right time

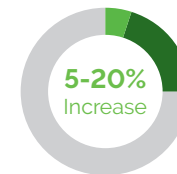
### Financial-Impact First Approach By the Numbers:

Based on our experience with customers that leverage PTC Manufacturing Solutions, in concert with the financial-impact first approach, manufacturers can yield improvements of:

#### REVENUE:



#### RELATED OPERATIONAL IMPROVEMENTS:



VOLUME



PRICE & MARGIN

#### OPERATING COSTS:



#### RELATED OPERATIONAL IMPROVEMENTS:



LABOR COST



MATERIAL COST

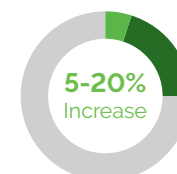


OVERHEAD COST

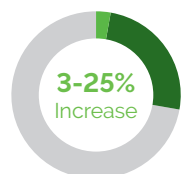
#### ASSET EFFICIENCY:



#### RELATED OPERATIONAL IMPROVEMENTS:



OEE



INVENTORY EFFICIENCY





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2. McKinsey Global Institute. Digital Manufacturing – escaping pilot purgatory. July 2018.  
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