Unlocking the Value of Asset Intelligence with **PTC Asset 360**

Introduction

The Digital Transformation Duel

Every day, manufacturing and service organizations combat a full range of growth challenges and competitive pressures. Internally, they wrestle with new revenue streams while trying to balance demand for new products and services against the risks of poor quality, reliability, and regulatory compliance.

As they engage in different battles for growth and competitive advantage, the common solution thread across tactics is digital. Today's digital solutions teams are well armed with data yet overwhelmed by it. They struggle to make it meaningful, to use new GenAI methods efficiently, and to put information into the right hands at the right times.

The struggle is most evident in the duel between data needed for design, engineering, and manufacturing, and data needed on the physical assets that are sold and maintained. On one side is engineering, with product information that drives sales and top-line growth.

On the other side are the sales and aftermarket organizations, which rely on asset information to forecast demand, enable new parts and service revenue streams, and document asset use for compliance.

So, how do digital transformation teams subdue the data conflict? Their mission is clear—drive collaboration by connecting product and asset data across engineering, manufacturing, and service.

But the reality is complex. Asset data lives in different forms and for different purposes. Reconciling it across processes and locations, redefining it for compliance or campaigns, and keeping it unified as systems evolve can make even the most strategic digital warriors feel insignificant. Too often, they are seen as the "IT budget police" rather than the architects of transformation.

Why Asset Data Matters: The Digital Diplomat

Product data is created and reshaped at every stage of the lifecycle:

Engineering:
Design specifications, drawings, and bills of material.

Manufacturing:
Serial numbers, work instructions, and production changes.

Installed base:
Commissioning details, service history, failures, and warranty data.

Each stage adds value—but also fragments the truth. Product Lifecycle Management (PLM), Enterprise Resource Planning (ERP), Field Service Management (FSM), and Enterprise Asset Management (EAM) systems all contain "versions" of the same asset, rarely reconciled. This creates inconsistent, incomplete, and inaccessible information. The result is wasted resources, limited collaboration, and stalled transformation.

Asset 360 was developed for application data management; built to unify every source of asset information across the product lifecycle. Asset data represents the complete record of an asset—from its initial design and engineering through manufacturing, installation, operation, maintenance, and finally retirement. It includes design specifications managed in CAD and PLM systems; manufacturing records such as ERP data, serial numbers, and work instructions; installation and configuration details; operational metrics from IoT and field service logs; maintenance history including work orders, replaced parts, and downtime; as well as service, warranty, and failure data. Even decommissioning and obsolescence tracking are captured, creating a living, evolving profile of every asset that supports the decisions driving reliability, compliance, and profitability.

The Impact of Asset Unification

At PTC, we understand the conflict in aligning people and processes around shared data definitions and governance. With decades of experience managing product lifecycle and installed base information, we know what's required: a unified approach to asset data.

Asset 360 was developed to be that unifying platform. It brings together asset profiles, cleanses and validates the data, and activates asset intelligence at scale.

The path forward is simple but powerful:

1. Build a solid product data foundation in engineering.
2. Collect relevant manufacturing data into a single asset record.
3. Manage and evolve that record throughout its useful life.

By embracing asset unification, Digital Transformation Leaders can:

- **Power collaboration** across engineering, quality, service, and aftermarket.
- **Enable compliance and campaigns** with reliable, validated data.
- **Reduce operational risk** by eliminating fragmentation and manual work.
- **Elevate their role** from cost controller to strategic business leader.

The alternative? Continued fragmentation, wasted resources, and missed opportunities for digital transformation.

The choice is clear: **deliver asset intelligence with PTC Asset 360.**

The Possibilities with Asset Intelligence

This e-book helps digital solutions teams educate engineering, manufacturing and service organizations about the different uses of asset intelligence and how they'll be supported with Asset 360.

Each section details a use case for a different organization explaining:

- Who in the organization is interested and why
- Their goals and obstacles
- What they can do with Asset 360
- How outcomes are achieved
- And, the business impact

Feel free to read them all or skip to those that pique your interest. Here are the use cases covered:

- Asset Intelligence for Digital Transformation Leaders
- Asset Lifecycle Intelligence for Service Engineering
- Capacity Planning Intelligence for Maintenance & Service Leaders
- Regulated Asset Intelligence for Compliance & Sustainability

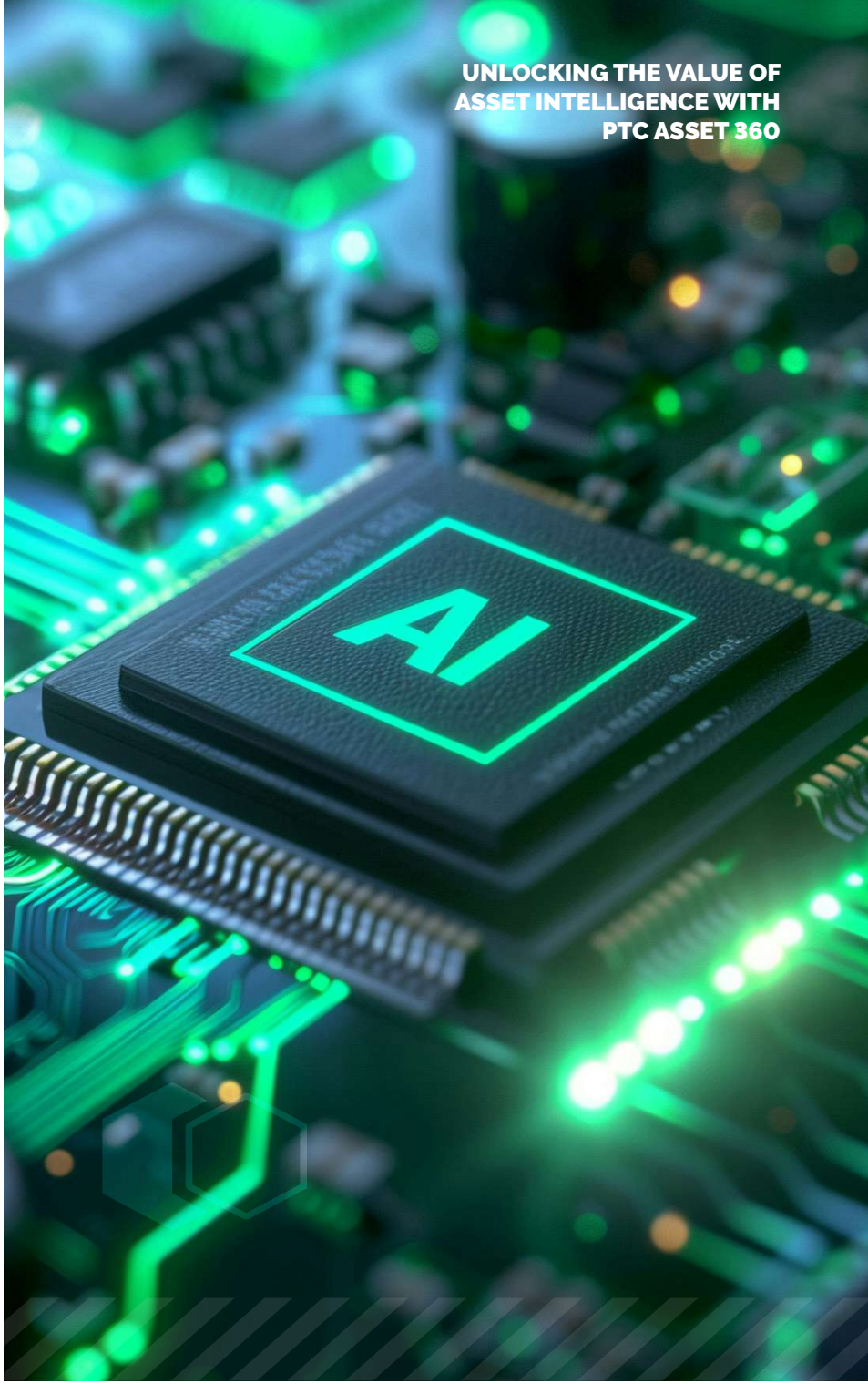
Activating AI-Powered Asset Intelligence for Digital Transformation Leaders

Putting asset data to work starts with having the right tools and data. You need not look further than your digital solutions and transformation team to assist.

Digital solutions teams define the systems where your asset data lives. With today's GenAI technologies, bringing asset data together is getting a lot faster and easier for those people who make the important decisions about your technology stack.

Asset 360 Use Case: For digital transformation leaders who want to balance the costs of asset data reliability with the benefits of digital thread initiatives, enabling greater cross-collaboration profitability.

Asset360 will take care of repetitive work for data analysts and system administrators.



Across reliability engineering, manufacturing quality, and aftermarket organizations, data analysts and the system administrators who support them are equipped with time-saving tools for data aggregation and business intelligence. They get the added benefit of steering business processes in the right direction. Applications for asset heath scoring, compliance, and sales campaigns are all built from a unified asset profile.

- **Data analysts** - research asset health, segment assets and create business intelligence based on intended and actual use of products.
- **Application administrators** – work without the burden of deep data science procedures to collect and unify asset profiles.

Goals & Obstacles:

The goals for your digital solutions teams are to ensure that asset data can be trusted. For asset data to prevail as a single source of truth, it needs to cross a few hurdles. Asset unification isn't the same for every manufacturing and product company. It's no small task to:

- Reconcile similar product and asset data across processes and locations, where it can look different and mean different things.
- Redefine it to work well for the applications mentioned: compliance, campaigns.
- Organize and maintain unified asset profiles over time as engineering or installed base management processes evolve.

Asset 360 Capabilities:

PTC has developed Asset 360 with AI for AI. It uses GenAI's pattern recognition abilities to cleanse and validate data. AI also powers data analysis for object-oriented reporting, without the bother of pre-defined "data cubes" or calculations. It doubles the productivity power of Asset 360 by quickly providing insights via semantic recall and search, and lends a hand in data governance and science when used as a clean source for predictive modeling.

Here's what it can do:

- Connect to all sources of asset data
- Create pipelines for asset specific data regardless of types and formats
- Help visualize data for configuration of asset unification rules
- Deduplicate records for the best, most reliable version of an asset
- Score and segment assets to create cost-effective engineering, quality, sales, and service initiatives
- Provide ready-made views of asset data for all stakeholders
- Enable asset reporting and executive dashboards

Asset 360 empowers analysts and administrators to put the most reliable source of asset information into the hands of people at the center of your business.

HERE'S HOW IT DOES IT:

- **Creates** a unified asset profile with little room for error
- **Simplifies** data management tasks, saving time for analysis and insights
- **Improves** cross-functional reporting

THIS IS THE BUSINESS IMPACT:

- **Faster** decision-making
- **Reduced** operational risk
- **Improved** compliance and audit readiness

Asset Lifecycle Intelligence for Service Engineering

The benefit of tracking a product through its asset lifecycle is that it creates a direct connection between the people responsible for product reliability and serviceability, and those responsible for delivering and maintaining the product after the sale.

The work of service engineering is sometimes a one-way street. Its job is to define the product for service, creating a version of the product's composition: parts, firmware, subassemblies, that's relevant for repair and field service work.

Service engineering teams send this information out in part catalogs and product documentation, with little road built for iterative feedback from their service team counterparts. Let's not forget, not all services are designed equally across the organization. Service methods naturally evolve through service organizations because they are closest to the customer.

Asset 360 Use Case: For service engineers and service managers who create maintenance and service strategies to ensure product reliability and increase customer satisfaction.

Asset 360 will provide service engineers and service managers with reporting and analytics to prove the reliability of repair and service methods.

- **Service Engineer** – take advantage of AI-enabled analytics tools, such as AI Canvas to identify recurring issues and validate effectiveness of repair methods
- **Service Manager** – report on product and service performance—connecting asset failure rates and trends over time for improvements in service methods

Goals & Obstacles:

Service teams are typically measured by cost of service and customer satisfaction. Service engineers, and the service managers that rely on them, understand this well. Everyone who contributes to defining and planning for service should be recognized for having an impact on service delivery, even if they're not performing maintenance day-to-day. It's hard to show your work when:

- Service and product information is fragmented across multiple systems
- Feedback loops for continuous improvement are inconsistent and infrequent
- Service team incentives don't promote the collaborative behaviors needed to openly share information

Asset 360 Capabilities:

Asset and product data come together in a unique way to bridge gaps in process and communications with Asset 360. It's a shared source of service recommendations, instructions and execution.

Here's what it can do:

- Integrate PLM service bill of materials data, including native connectors for PTC Windchill
- Incorporate service documentation
- Compile and aggregate asset service history using as-designed and as-sold configurations (i.e., families)
- Apply scoring models for a segment of assets depending on maintenance and service methods performed
- Help identify patterns of recurring failures and successful repairs
- Provide service performance dashboards

Engineering and aftersales service teams collaborate across regions and product lines with Asset 360. This new way of working needs clear incentives and proof.

HERE'S HOW IT WILL PROVIDE IT:

- **Shows the work:** serviceable BOM vs. total assets covered by it
- **Captures the performance:** compare pre- and post-service health scores
- **Defines the measures:** correlate metrics for recurring failures and resolution rates

THIS IS THE BUSINESS IMPACT:

- **Improved** product reliability
- **Higher** first-time fix rates
- **Increase** in service standardization for consistent delivery
- **Increased** customer satisfaction

Capacity Planning Intelligence for Maintenance & Service Leaders

Assets are repaired and maintained by different groups of people throughout their useful lives. Customers who operate them provide some level of upkeep and call on the manufacturer who made them for assistance. In some industries the majority of work falls to third-party service providers.

No matter who's ultimately responsible for asset uptime, everyone in the repair and maintenance process needs to be well resourced to meet their business objectives. Those resources include people; parts and the tools they need to do the work. While most service and maintenance systems help put people in the right place at the right time with all the right equipment to do the job, they lack core big data management features and aren't always the most useful tools for forecasting demand.

Asset 360 Use Case: For aftersales service leaders and operations management teams who want to forecast repair and maintenance demand, so resources are planned and ready when needed to meet business goals.

Asset 360 will collect all relevant data for service and maintenance demand forecasting.

Service and operations executives get the benefit of understanding how to resource their teams, while managers and the analysts that support them prepare demand scenarios for different levels of business goal attainment.

- **Service and operations analysts** – create a unified asset view by account or by region, so demand data (i.e., work orders, parts used, repair times) is organized appropriately for demand forecasts
- **Service and operations managers** – review demand forecasts to actual work performed and adjust priorities based on current resources
- **Heads of aftermarket services and maintenance operations** – gain consistent visibility to recurring resourcing issues

Goals & Obstacles:

All parties involved with keeping asset running have to scale for growth and keep costs in line for profitability. The organizations that do this for customers are concerned with how best to monetize their assets for extended service and part sales. When assets are maintained by their owners, the ability to turn a profit only grows with asset productivity. While the goals for revenue and cost may diverge, the challenges with understanding asset maintenance and repair demands are the same:

- Fragmented demand data, due to different systems and processes across service regions and facilitates
- Low data quality: incomplete and duplicate records skew forecasts
- Limited visibility across teams, asset types and regions to set planning benchmarks based on planned and actual work
- Inability to meet or anticipate spikes in demand for service or repair work
- Constant service and maintenance resource shortfalls that limit business results

Asset 360 Capabilities:

Asset 360 was built for clean, validated asset data that can be used for machine learning (ML) modeling. Large data sets of service history across product families, asset locations and service regions combined with asset health scoring data, usage, failure rates and other demand signals all feed feature-rich models for service and maintenance forecasting.

Here's what it can do:

- Mutli-source data aggregation (FSM, ERP, EAM, IoT, etc.)
- Cleans and validates data
- Detects service patterns and failure trends across categories of assets
- Calculates asset health scores as a feature of demand models
- Forecasts service and maintenance events by asset group, accounts, regions and more
- Show service forecasts against actual work

Core service and maintenance teams are now equipped with accurate data to help them keep and grow the resources they have—better aligning their value to the organization with company goals.

HERE'S HOW IT DOES IT:

- **Provides** a trusted, unified asset profile ready for analysis
- **Bases** demand signals on the most relevant data for each asset group
- **Creates** actionable service and maintenance forecasts
- **Makes** service gaps, service-level risks and resource bottlenecks apparent
- **Helps** optimize service and maintenance plans

THIS IS THE BUSINESS IMPACT:

- **Improves** data-driven decision making
- **Scales** service operations to meet demands
- **Maximizes** opportunities for service revenue
- **Ensures** asset uptime

Regulated Asset Intelligence for Compliance & Sustainability

Highly regulated industries bear an extra burden of costly procedures throughout the product and asset lifecycles.

Costs of ensuring high-quality and the liabilities of poor quality include designing for sustainability, scrap and rework in manufacturing and extend to complaint reporting and all other after-sales procedures for installed base tracking.

The newly required Digital Product Passport, under the Ecodesign for Sustainable Products Regulation in the European Union (EU) will add to these costs as new documentation needs are mandated. Implementation rules are currently being defined, as of 2025, to specify reporting requirements for specific product categories. These requirements uphold the regulation's sustainability rules and aim to curb climate change caused by today's global supply chains.

While manufacturing and product companies wait to get a better understanding of the regulation's requirements, most are taking early steps to assemble teams to study the law and its implications for product lifecycle data.

Use Case: For dedicated Digital Product Passport compliance teams, who need to ensure traceability and meet digital passport mandates, so costs of compliance are balanced against risks of enforcement.

Asset 360 will help coordinate the compliance teams' outputs for efficient management of DPP reporting requirements.

Specialized compliance teams will form a multi-disciplinary approach and response to DPP requirements.

Product engineers – define and modify bill of materials (e-BOMs) that detail parts down to the substances level required for the DPP.

Regulatory affairs & compliance managers – research and advise the exact pieces of product and asset data that are needed for DPP reporting and define the reporting process.

Supply chain analysts – compile necessary components and materials data from suppliers and upstream partners—supplying compliance certifications (i.e., RoHS/REACH)

Sustainability specialists – calculate the metrics that prove an asset's adherence to the DPP requirements (i.e., carbon footprint. recycled content)

Goals & Obstacles:

DPP compliance teams with the support of their digital solutions groups will need to capture and share a significant amount of new information about their products and how they're maintained throughout their lifetimes. Gathering, organizing and formatting this data isn't trivial and can add substantial costs:

- Changes in data managed in PLM and ERP systems requires new processes, people and system upgrades
- Uncertainty about specific product requirements leads to either a lack of preparation or wastes time in unnecessary efforts.
- Sharing too much information increases the potential for IP leakage and loss of competitive advantage

Asset 360 Capabilities:

Asset 360 was built to ingest, store and manage big data. It will scale with the added regulatory data rigor of DPP compliance. It was designed specifically for reporting on individual assets and securing them for appropriate access.

Here's what it can do:

- Integrate for consistent engineering data feeds, including built-in connectors for Windchill
- Provide an as-designed, as-built and as-maintained view of assets for lifecycle traceability
- Audit DPP data lineage for governance: ownership, update frequency and more
- Report on key asset metrics for CO_2 footprint, circularity and recyclability
- Establish sustainability and compliance scores based on metrics
- Track and manage asset's compliance statuses through AI-enabled query tools

Digital solutions groups enable dedicated DPP compliance teams with data management tailored to their reporting needs.

HERE'S HOW IT DOES IT:

- **Creates** a unified, validated asset view that can be shared and secured
- **Enables** reporting on recyclability, emissions, and material sourcing
- **Prioritizes** remediation efforts for non-compliant assets
- **Streamlines** audit preparation

THIS IS THE BUSINESS IMPACT:

- **Improved** sustainability reporting
- **Reduced** legal exposure
- **Faster** regulatory response
- **Enhanced** brand trust
- **Lower** cost of compliance

Conclusion

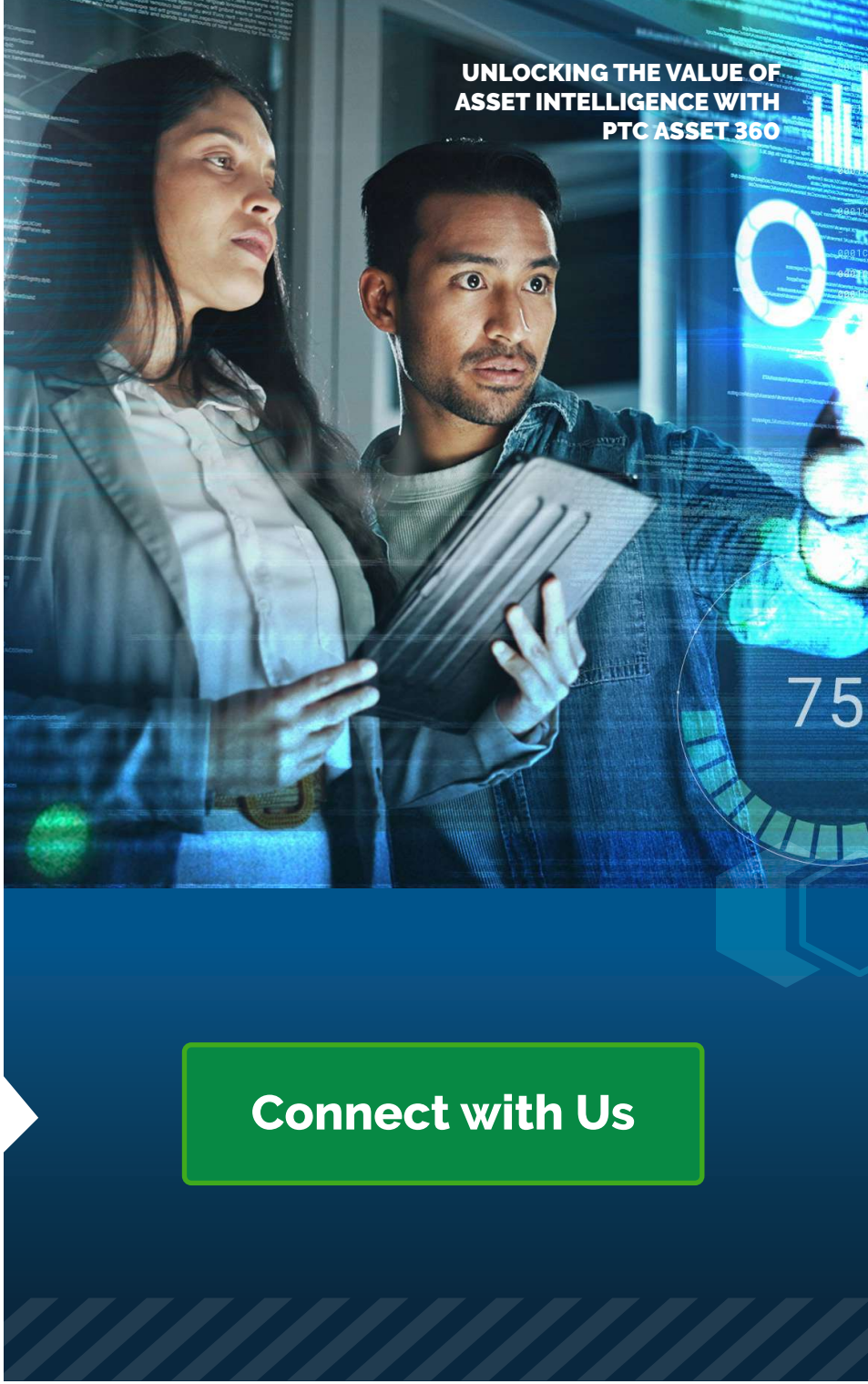
From Product Data Conflict to Asset Unification

Across engineering, manufacturing, service, and compliance, every team faces its own version of the same challenge—fragmented asset data that slows progress, clouds insight, and limits transformation. The common conflict isn't just between systems or silos; it's between the need for precision and the drive for innovation.

Asset 360 resolves that conflict by unifying the data story. It connects the fragments, aligns definitions, and turns disconnected sources into a single, trusted view of every asset. With unified asset intelligence, organizations move from reacting to problems to anticipating opportunities—creating a foundation for continuous improvement, compliance confidence, and strategic growth.

Take the Next Step

If your digital transformation journey is stalled by disconnected data and competing priorities, we invite you to connect with us. Learn how Asset 360 can help you align your people, processes, and technologies under one unified approach to asset intelligence—turning data conflict into collaboration, and complexity into clarity.



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