
Unlocking the Value of Asset Intelligence with ptc® orbit™

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.

Orbit 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.

Orbit 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 Orbit.**

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 Orbit.

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 Orbit
- 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](#)



Activating AI-Powered Asset Intelligence for Digital Transformation Leaders

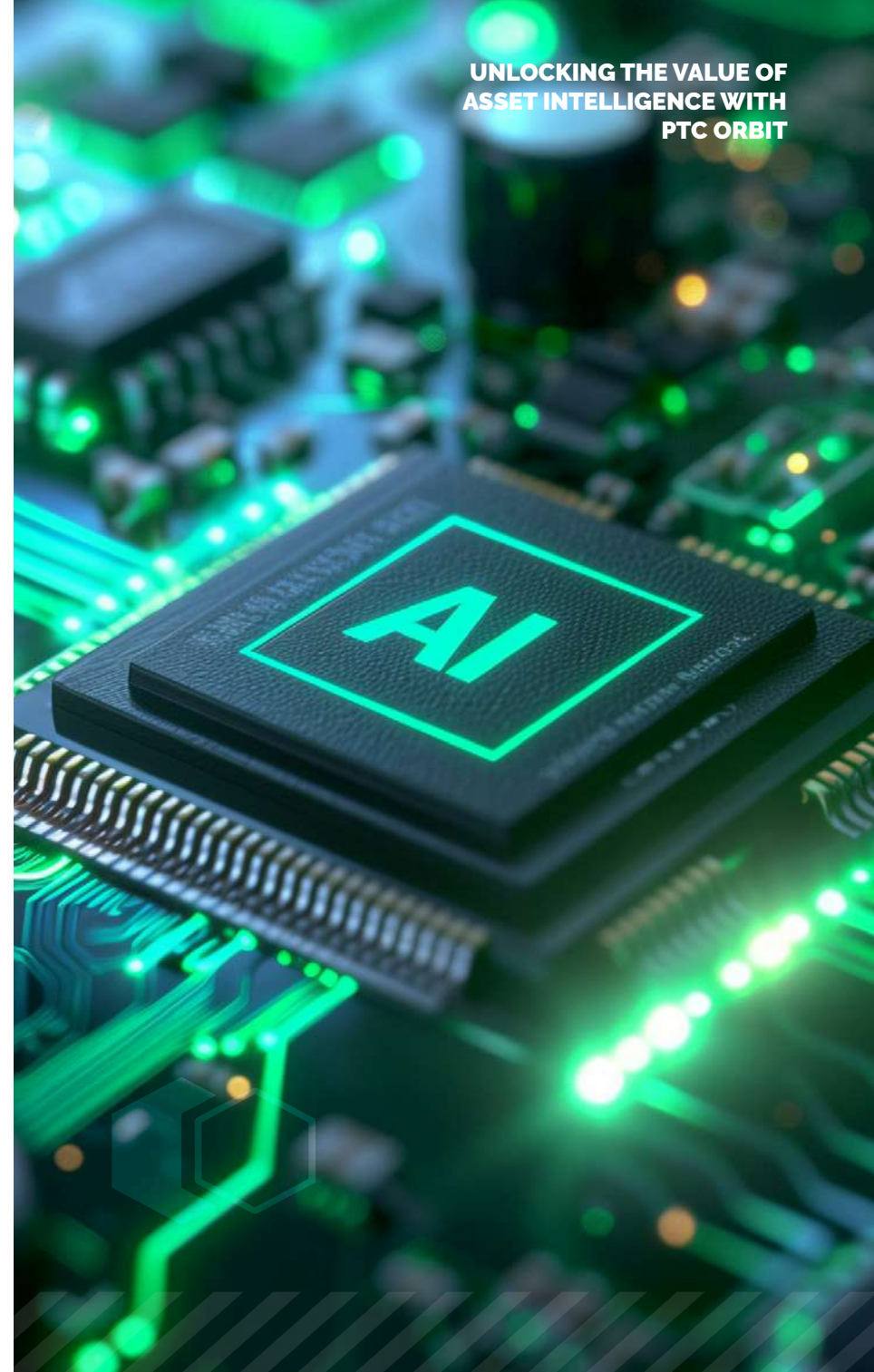
Putting asset data to work starts with having the right tools and data. You need not look further than your digital solutions and transformation team to assist.

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.

Orbit 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.

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

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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 health 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.

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Orbit Capabilities:

PTC has developed Orbit 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 Orbit 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 AI-powered natural language queries to augment asset reporting and executive dashboards

Orbit 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.

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

Orbit 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

Orbit Capabilities:

Asset and product data come together in a unique way to bridge gaps in process and communications with Orbit. 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 health and other performance measures
- 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 Orbit. 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

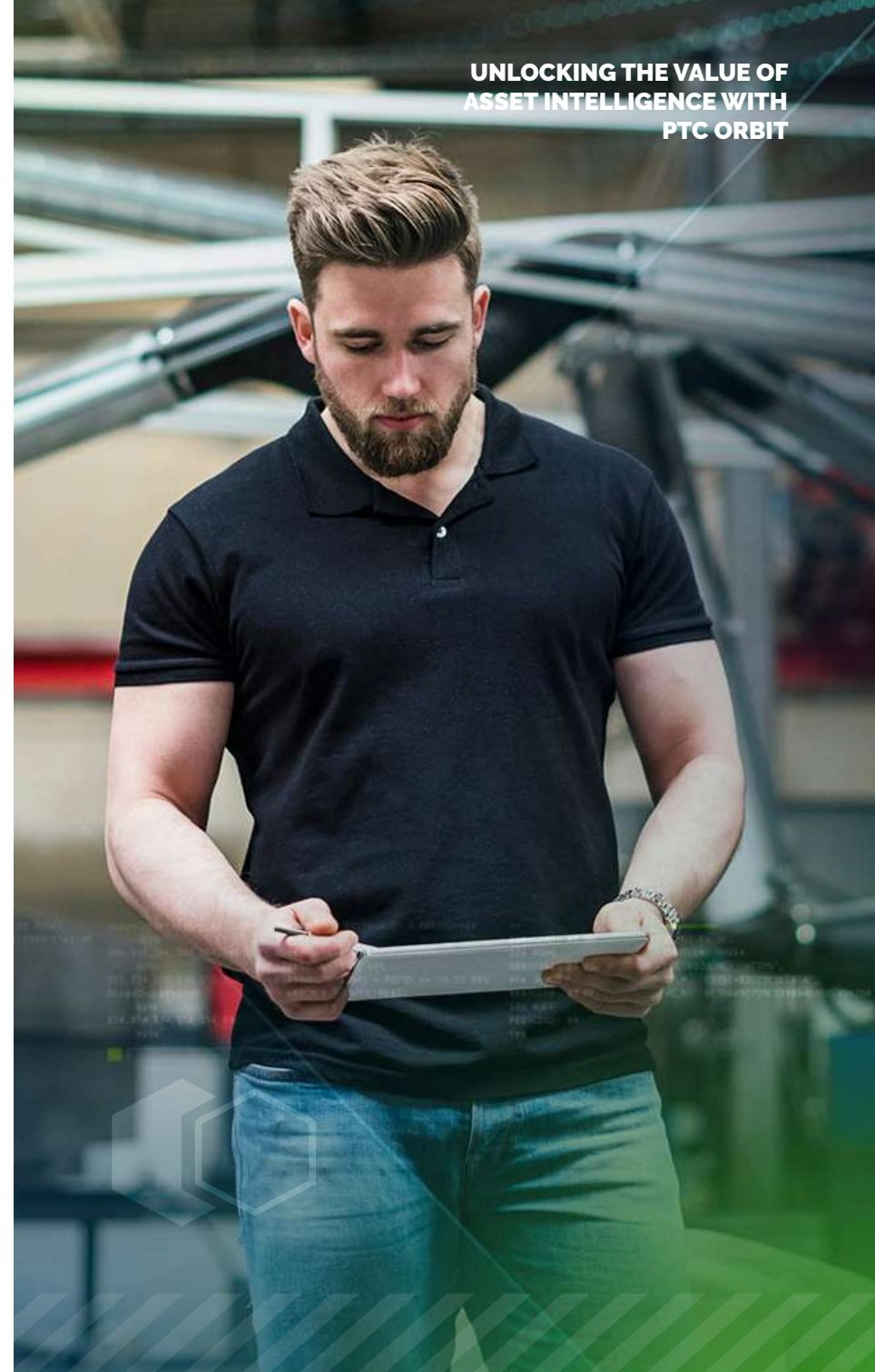
Capacity Planning Intelligence for Maintenance & Service Leaders

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.

Orbit 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.

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Orbit 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

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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



Orbit Capabilities:

Orbit 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:

- Provides a unified structure for maintenance and service data, regardless of source system
- Enriches data out-of-the-box with maintenance effectiveness scoring
- Helps visualize planned and unplanned work across asset groups, accounts, regions and more
- Forecasts work combining historical data, PM schedules and user-defined criteria
- Outputs actionable forecast results with monthly and work type breakdowns

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
- **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

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.

PTC Orbit 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 PTC Orbit 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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Connect with Us



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