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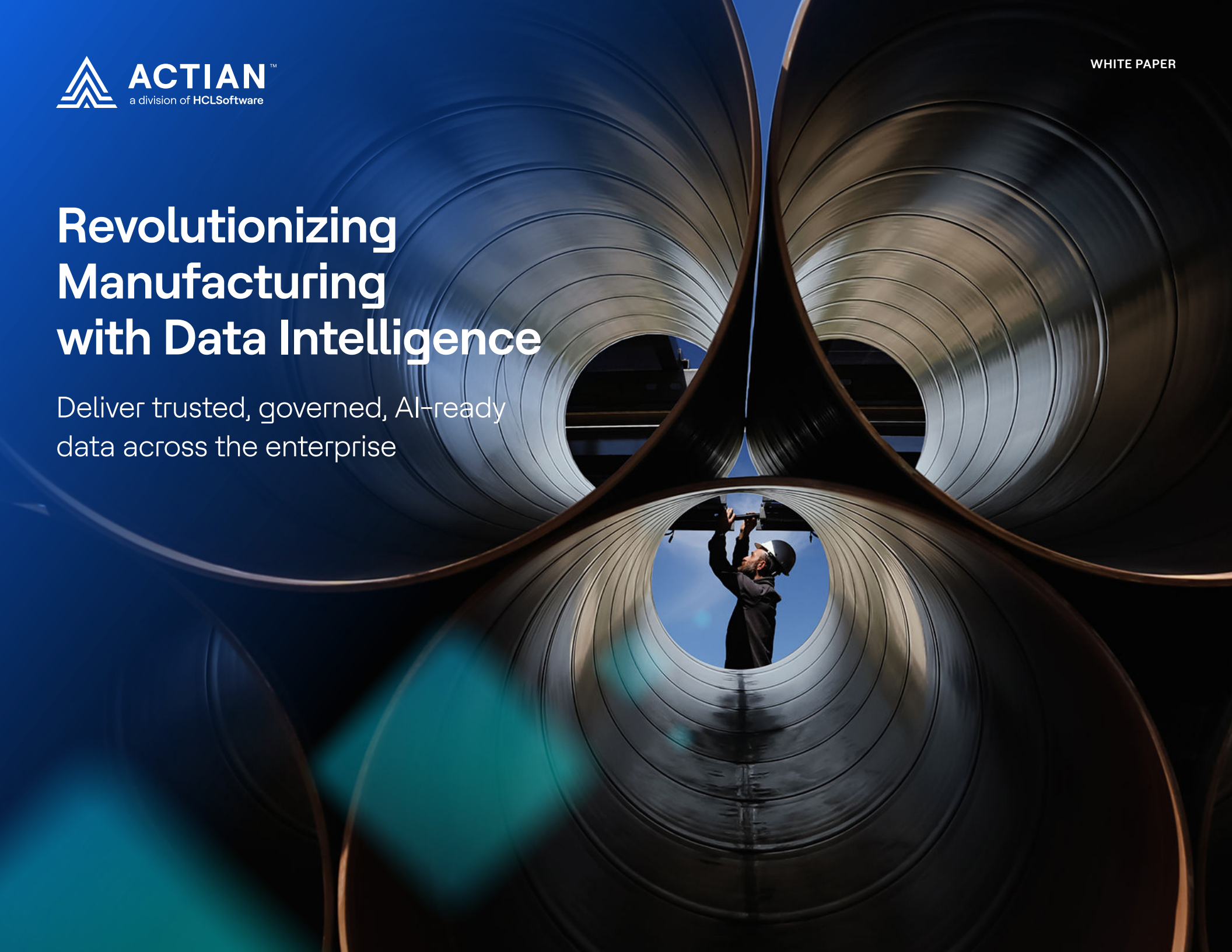
WHITE PAPER

Revolutionizing Manufacturing with Data Intelligence

Deliver trusted, governed, AI-ready data across the enterprise



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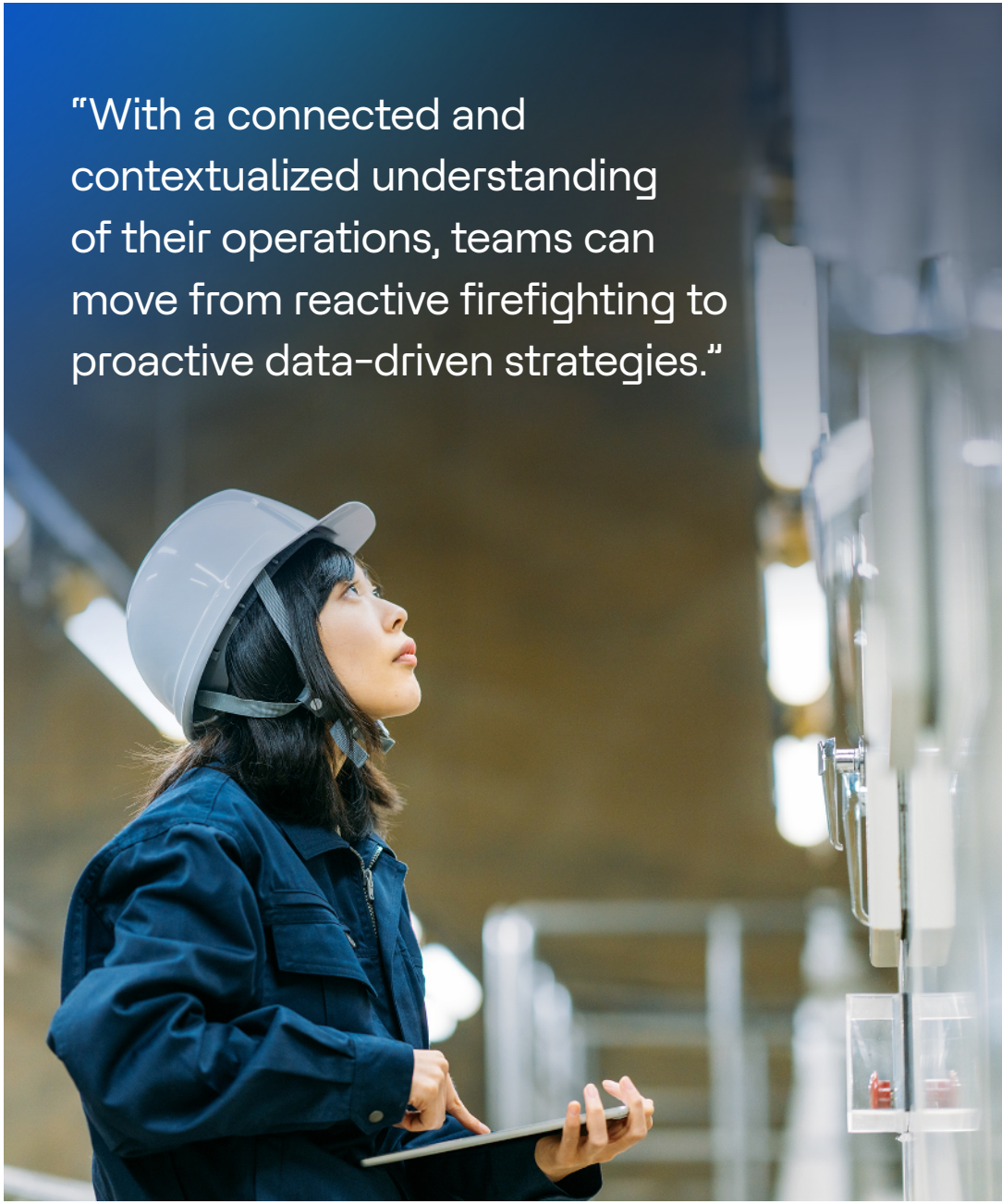
Enabling Data-driven Agility

In the manufacturing industry, agility is more than a buzzword—it's a necessity for survival and growth in today's dynamic market. Agility represents the ability to quickly adapt to supply chain disruptions, stay ahead of shifting customer demands, and optimize production schedules in real time.

Achieving this level of agility hinges on access to high-quality, actionable data. However, fragmentation creates blind spots, making it nearly impossible to see the full picture needed for quick, informed decision-making.

A data discovery platform offers a transformative solution to these challenges by centralizing metadata and creating a unified view of the entire data landscape. By seamlessly integrating information from multiple sources, this type of platform enables manufacturers to access the data assets they need to gain real-time insights and analytics that were previously buried or inaccessible. With a connected and contextualized understanding of their operations, teams can move from reactive firefighting to proactive, data-driven strategies.



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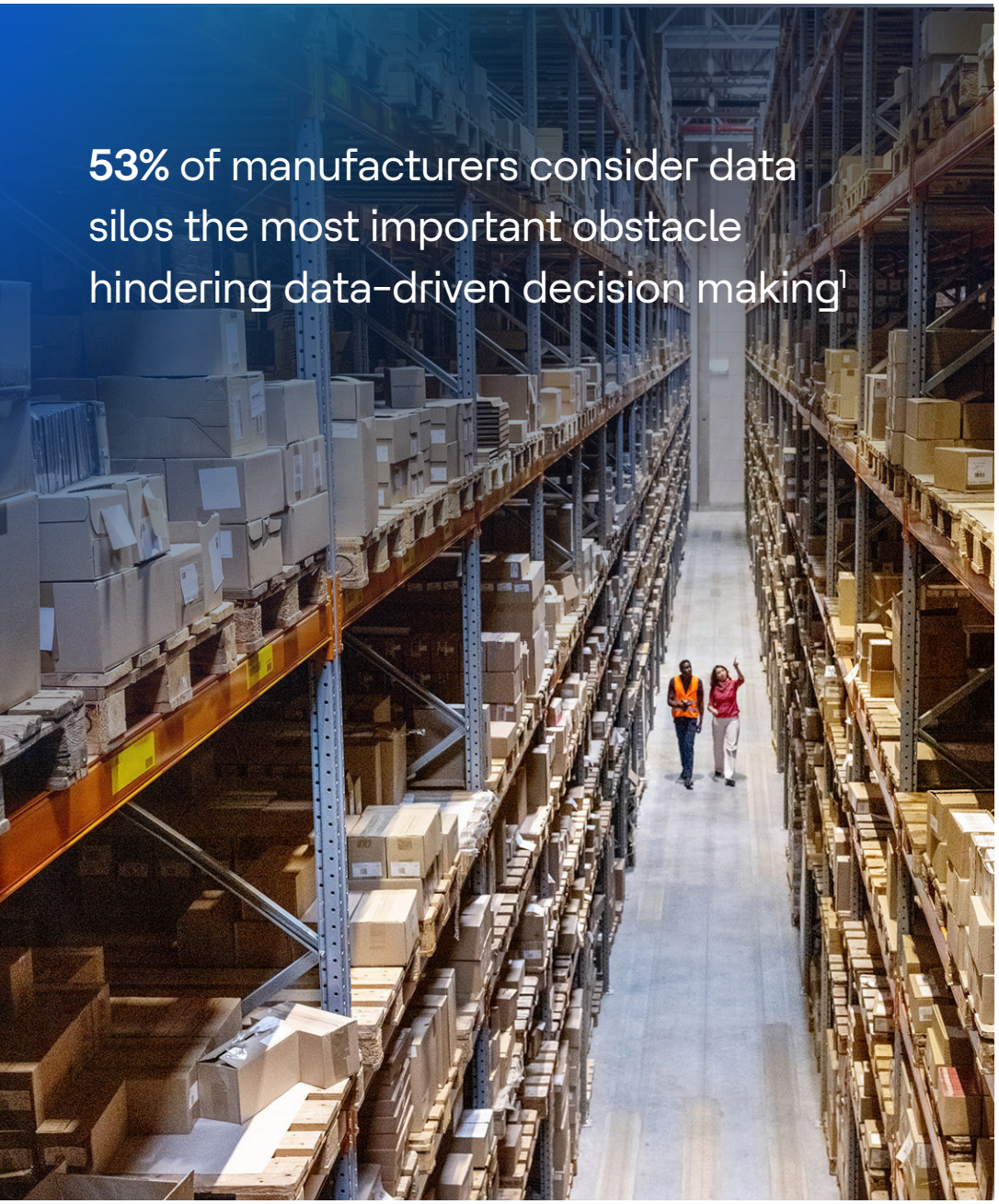

Supply Chain Optimization

Effective supply chain optimization is critical for preventing disruptions, avoiding costly overstock or stockouts, and ensuring customer satisfaction. However, many manufacturers struggle with data fragmentation. Between ERP systems, supplier databases, logistics platforms, and even manual spreadsheets, these silos make it nearly impossible to gain a real-time, unified view of supply chain performance.

A robust data catalog transforms the application of supply chain optimization by centralizing data from disparate sources into an easily searchable and interconnected repository. With a data catalog, manufacturers can map and contextualize supply chain data, making it accessible and actionable for forecasting and planning. This enables real-time visibility into inventory levels, supplier performance metrics, and logistics tracking.

1 Manufacturing Leadership Council, 2024

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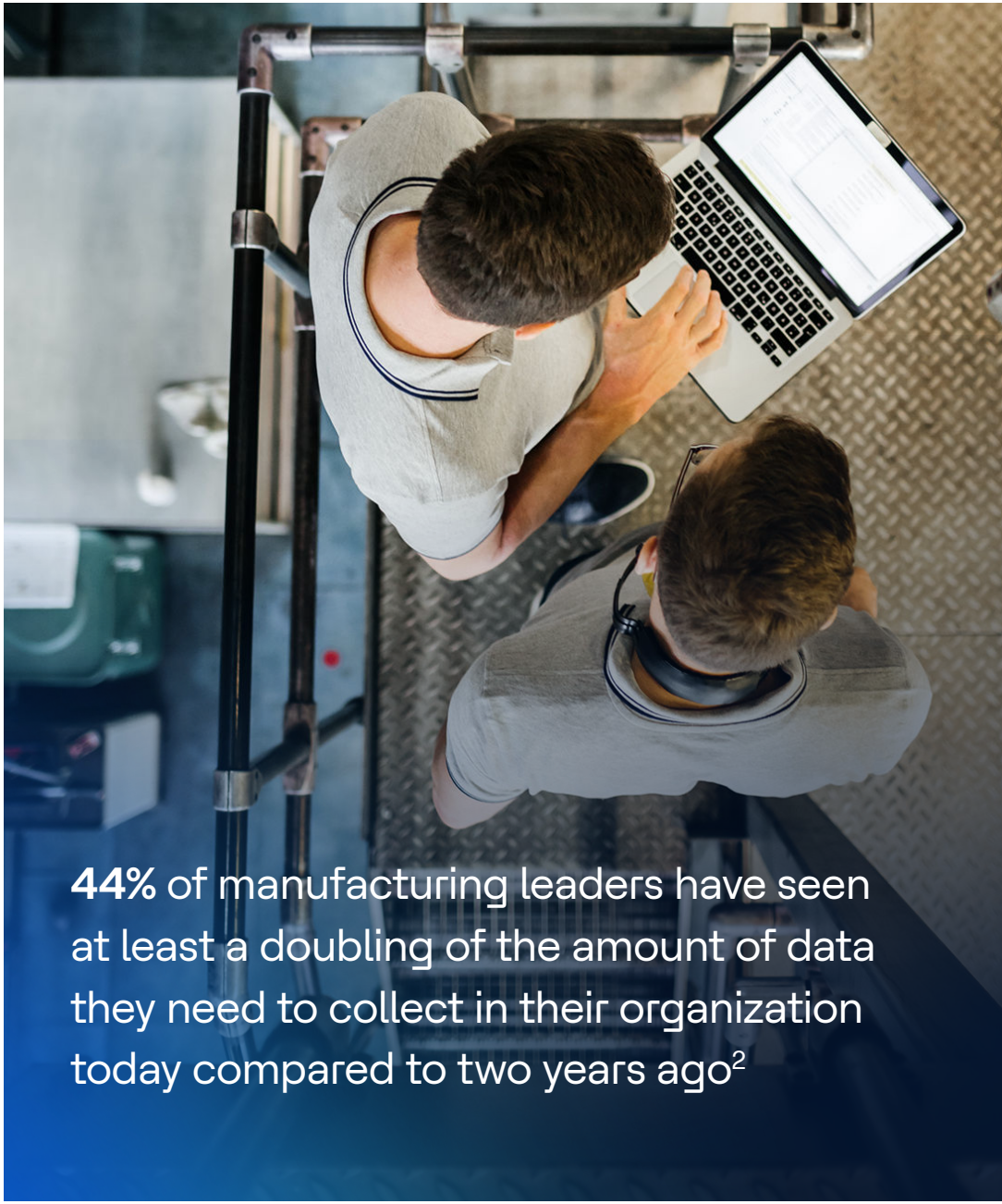
Production Optimization

Despite its importance, many manufacturers face significant obstacles in optimizing production. Data required for optimization—such as machine performance metrics, quality control data, and employee shift records—is often scattered across disconnected systems, being managed by different people in departments. This makes pinpointing inefficiencies or predicting equipment malfunctions challenging.

Inconsistent data quality and lack of integration capabilities further hinder manufacturers' ability to perform comprehensive analyses, often leading to missed opportunities for improvement. Achieving production optimization is crucial for manufacturers to meet customer demands, control costs, and stay competitive, but a consistent lack of visibility into lineage and quality is a challenge that must be overcome.

Data lineage is the key. By connecting data cross systems, and mapping its flow throughout the production process, data lineage simplifies production optimization. It provides a clear view of how data moves and interacts and enables manufacturers to trace inefficiencies to their root causes. This grants manufacturers the ability to optimize resource allocation, reduce downtime, and streamline workflows, resulting in improved efficiency and cost savings.



2 Manufacturing Leadership Council, 2024

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Validation

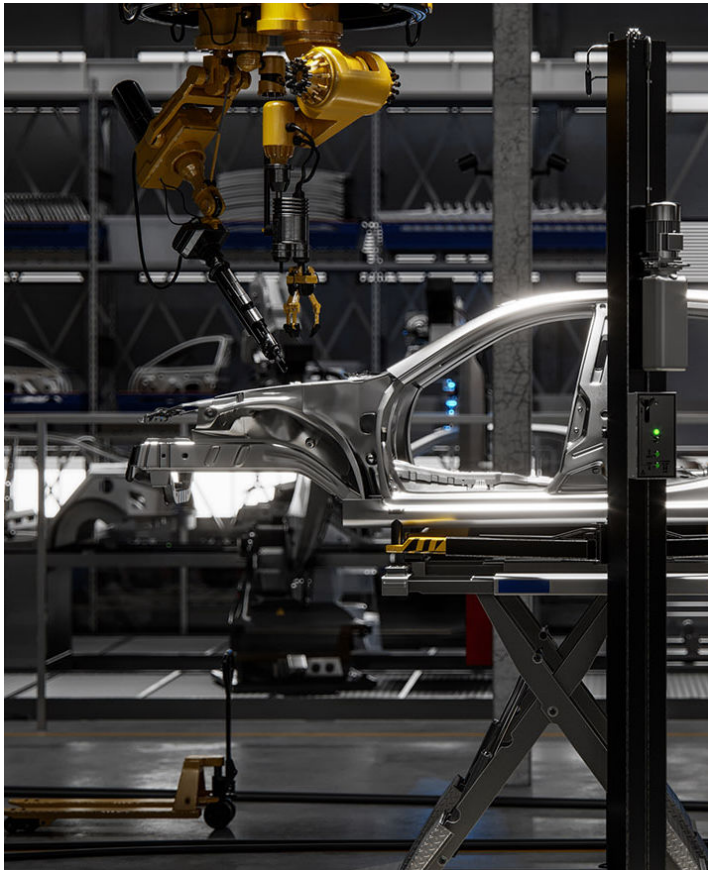
Customer: Stellantis

Stellantis is a leading global automaker and mobility provider that offers clean, connected, affordable, and safe mobility solutions. Being the result of the merger of various brands from different countries and data cultures, Stellantis handles plethoric volumes of data coming from various locations, plants, buildings, vehicles, supply chains, partners, customers, and more.

To help their organization to better know their data and its quality to generate new ideas, Stellantis was focused on key goals including becoming agile and competitive, being global, democratizing data, and satisfying customers.

The firm chose Actian to meet these challenges with a solution that fulfilled all the specific requirements.

- **Pure and simple:** Actian explorer is a user-friendly web app for all business/ end users in the organization.
- **Non-intrusive deployments**
- **Connectivity:** Actian offers dozens of native connectors to a wide range of data sources and tools
- **Full Cloud:** so is Actian Data Intelligence Platform
- **Metadata only:** Actian only centralizes and synchronizes metadata
- **Human and dedicated vendor:** Actian's Customer Success team works closely to meet Stellantis' data teams needs and provide the best support possible on a daily basis.



"Actian and Stellantis have a very solid relationship. On the one hand, they provide the data catalog we needed, offering a pure experience for our end users: they log in to the platform and everything is cleaned, organized, and simple. On the other hand, Actian's teams are doing a fantastic job putting up with us, to meet our numerous requirements and challenges by always opening their hearts, sharing, and discussing with us."

– Ricardo Rodrigues, Head of Data Governance, Stellantis

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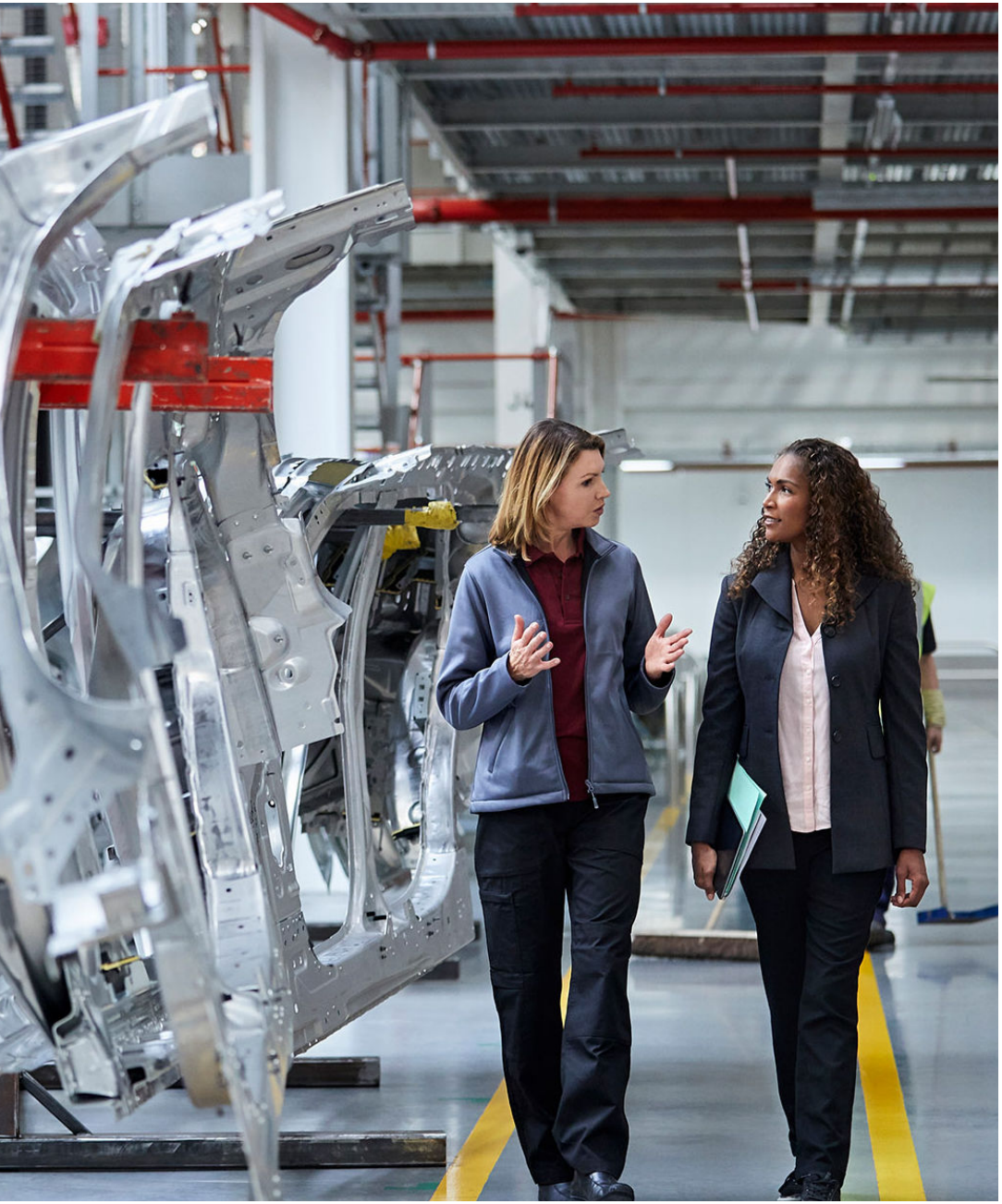

Powering Predictive and Preventative Operations

Downtime is one of the most significant and costly challenges facing manufacturers today, with unplanned equipment failures alone accounting up to 20% of annual revenue losses. The ripple effect of downtime extends far beyond repair costs, often resulting in delayed orders, lost productivity, dissatisfied customers, and diminished trust. Every second of operational time matters in manufacturing, and the ability to avoid downtime through predictive and preventative strategies is essential for long-term success.

Doing so requires leveraging data effectively. Data from IoT sensors, robotics systems, embedded devices, and operational logs hold the key to identifying patterns and predicting equipment failures, yet without the ability to connect and contextualize that information, manufacturers are left reacting to problems after they occur—an approach that is as costly as it is inefficient.

A data discovery platform can overcome these challenges by integrating and mapping data across diverse sources. The benefits of this approach extend beyond just avoiding downtime. Predictive insights allow maintenance teams to prioritize repairs and replacements, reducing unnecessary maintenance costs and minimizing disruptions. At the same time, preventative strategies help optimize equipment usage, extending asset lifecycles and improving overall efficiency. With this data-driven approach, manufacturers can shift from reactive troubleshooting to proactive decision-making.

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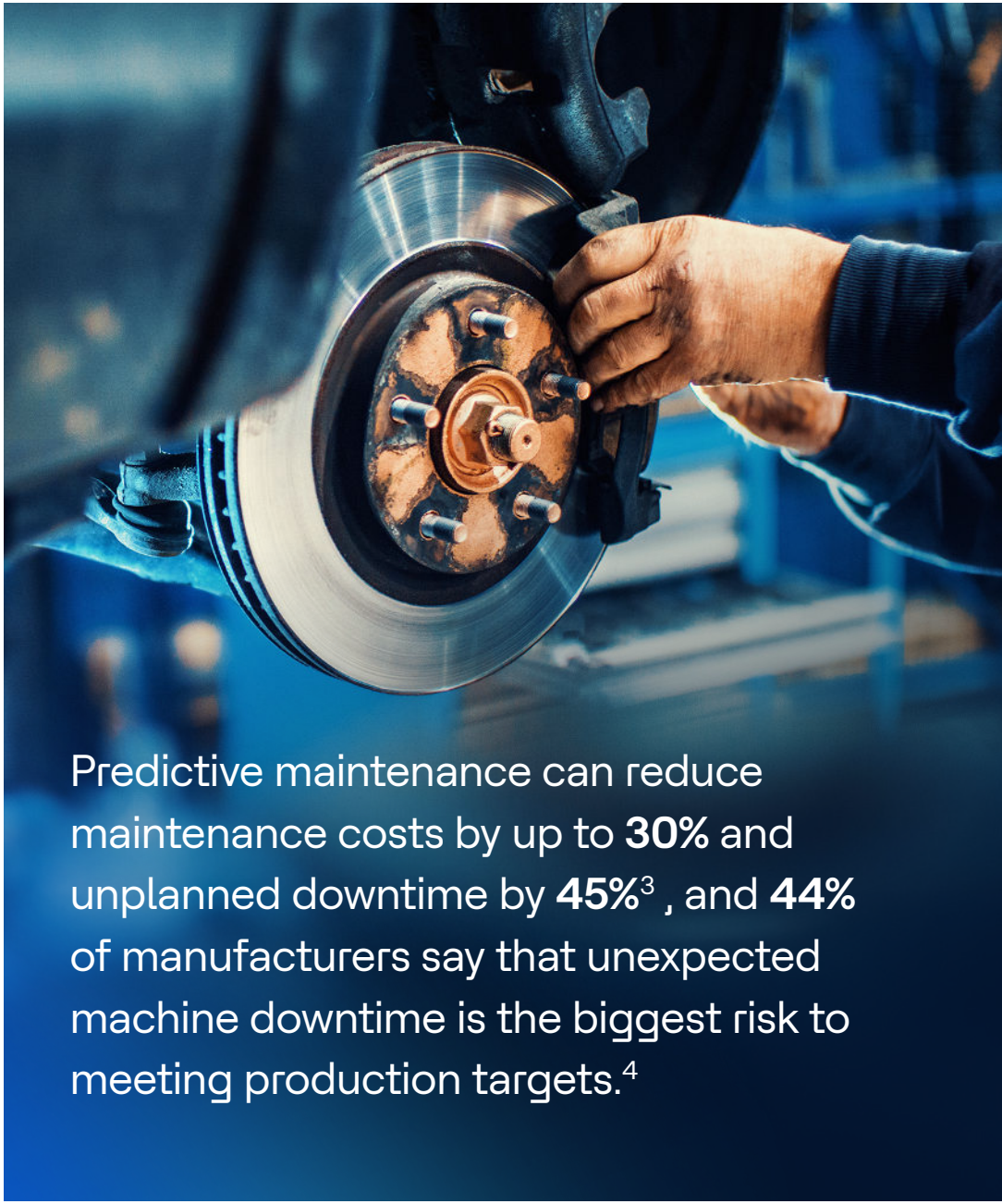
Predictive Maintenance

Unlike traditional reactive or scheduled maintenance, predictive strategies leverage real-time data to optimize repair and replacement schedules based on actual equipment performance. This allows manufacturers to proactively address issues to reduce downtime, cut maintenance costs, and extend equipment lifecycles.

Despite its promise, it's a struggle to implement. Information such as IoT sensor readings, machine logs, and repair histories is often siloed across multiple platforms. Moreover, limited visibility into data lineage hampers the ability to trust and interpret the information. These challenges leave many organizations stuck in reactive maintenance cycles, leading to unplanned downtime and increased costs.

Data lineage tools, like those offered by a data discovery platform, are essential for enabling predictive maintenance by providing a clear and detailed map of how data flows across systems. With lineage capabilities, manufacturers can track the origins, transformations, and usage of maintenance data, ensuring that insights are accurate and actionable.



3 LabelVisor, 2024

4 AIMS, 2024

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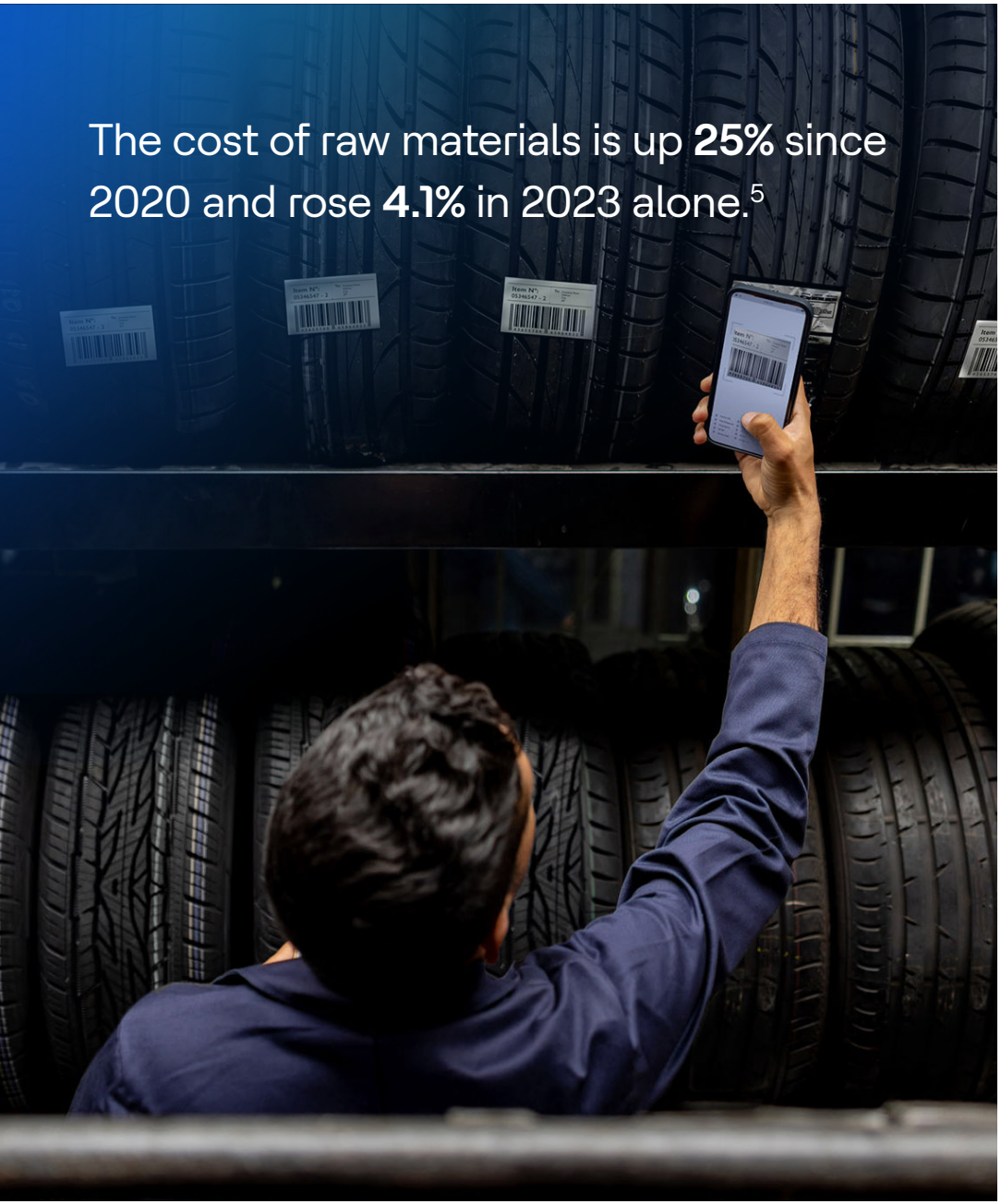


Product Tracking

Product tracking is critical for resolving defects, conducting recalls, and maintaining quality assurance. In many industries, it's also essential for meeting regulatory requirements and protecting customer trust.

However, when information about materials, processes, and distribution resides in disparate systems like ERP, Quality Assurance/Quality Control databases, and supply chain platforms, product tracking and traceability efforts can become highly complex. This leads to delays in defect resolution and compliance challenges—especially during audits.

A data catalog can help simplify product tracking by centralizing metadata into a searchable, unified repository. This provides manufacturers with a clear picture of how materials and products move through production and distribution. By cataloging data from ERP systems, IoT devices, and quality systems, for example, manufacturers can quickly identify where a defective component originated, trace its usage, and take corrective action.

5 Manufacturing Dive, 2024

Validation

Customer: Autostrade per l'Italia

Autostrade per l'Italia is a prominent toll motorway concessionaire in Europe. In 2020, they initiatied a digital transformation journey aimed at harnessing the power of data, enhancing their technology ecosystem, and migrating to the cloud.

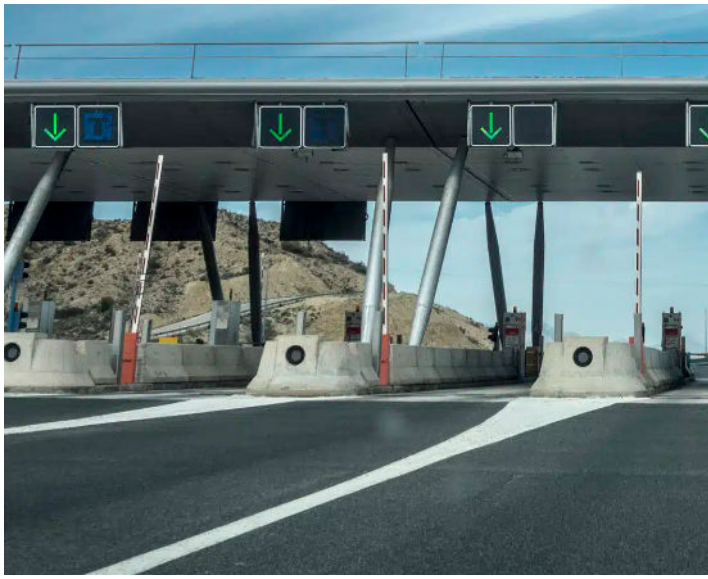
Due to the prevalence of manual activities related to traffic, safety, and maintenance, Autostrade per l'Italia faced various challenges resulting in operation risks. Furthermore, the user experience was not sufficiently digitized for travelers, employees, and field operators, while fragmented data led to asynchronous reporting and low AI adoption, which amplified the inefficiencies.

Due to these challenges, Autostrade per l'Italia decided to modernize their operations, processes, and technology. Their goal was to improve data democratization, informed decision-making, data monetization, new business identification, and to create a network of partners to collaboratively use data to achieve their goals.

After a thorough evaluation of various options, Autostrade per l'Italia ultimately chose Actian and its Data Catalog for three key reasons:

- **The user-friendly interface** – the solution needed to be accessible to both technical and business teams. The company involved the business in the decision-making process and Actian was rated as the most intuitive and easy to navigate solution, enabling a self-service approach to data.
- **The flexible metamodel** – Actian offers a simple but very flexible metamodel with basic concepts. It allowed the organization to easily customize and enrich it with specific entities like for instance the concept of application, which enabled them to censor the level of privacy and sensitivity of the data.
- **The pricing** – Actian was more affordable than other platforms that Autostrade per l'Italia evaluated, making it a cost-effective solution for their needs.

The results? Implementation of a functional data catalog in 6 months, 90% automation reached, and 200+ catalog users after 6 months.



"In our opinion, only the business functions can truly transform the company into a data driven company. Actian Data Intelligence Platform is the tool they need – efficient and usable – so that they are fully aware of the data they have available. It builds the bridge between business and data at Autostrade. From a business perspective, it is fast, complete, easy to understand, and user-friendly. Whereas from an IT perspective, it is agile, scalable, and continuously upgradeable."

– Ruben Marco Ganzaroli, Chief Data Officer, Autostrade per l'Italia

Compliance and innovation with data governance

Regulatory compliance and innovation are often seen as opposing forces in manufacturing. Strict standards like ISO, REACH, and QA/QC require meticulous data handling, detailed reporting, and traceable data lineage, while innovation demands flexibility, experimentation, and speed.

Effective data governance is essential for navigating the tension that comes with these dual priorities. Data governance is a critical enabler of innovation, and essential for navigating the complex requirements related to compliance. With tools like automated lineage tracking and standardized reporting workflows, robust governance frameworks ensure accurate, transparent, and secure data management. Beyond compliance, data governance offers clear visibility into data relationships, quality, and ownership, which allows research and development teams to accelerate innovation and ensure that insights are both reliable and actionable.

By integrating compliance and innovation through effective data governance, manufacturers can mitigate risk while fostering growth. This approach not only ensures adherence to stringent regulations, but positions organizations to unlock the full potential of their data, driving competitive advantage in an increasingly regulated and data-driven world.

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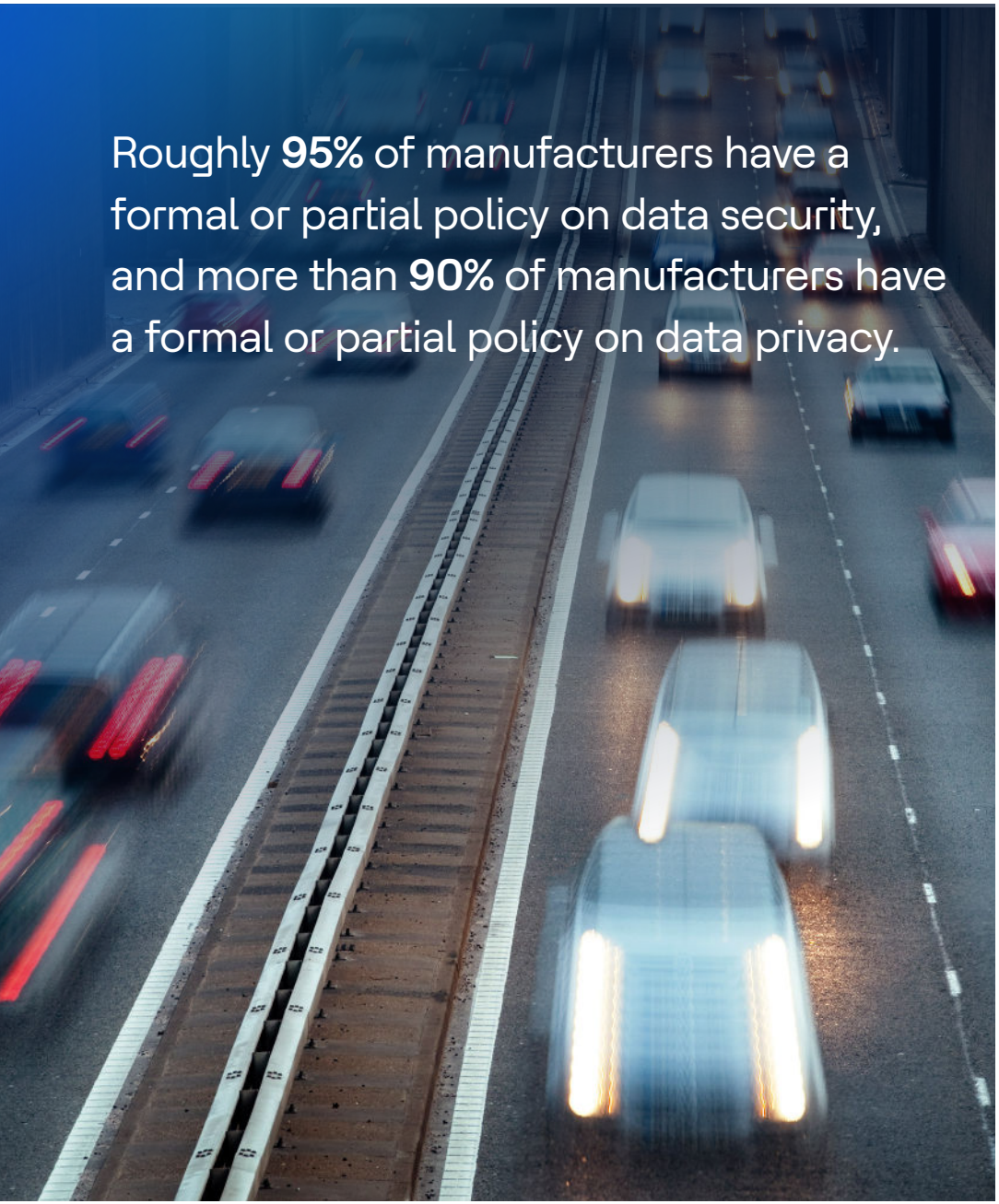

Regulatory Compliance

Regulatory compliance requires manufacturers to adhere to industry standards like REACH and ISO, which mandate robust data handling, traceability, and reporting practices. Compliance is not just a legal obligation—it safeguards a company's reputation, builds customer trust, and ensures uninterrupted operations in highly regulated markets.

Manufacturers often face challenges in meeting regulatory requirements due to insufficient data governance. Data is frequently fragmented across multiple systems, with limited lineage tracking and no standardized processes for ensuring quality or consistency. This lack of transparency complicates audits, increases the risk of fines, and exposes organizations to reputational damage.

A data discovery platform addresses these challenges by centralizing and streamlining the access to critical data assets. By enhancing data visibility and control, manufacturers can ensure consistent data quality and compliance with regulatory standards. The platform's capability to track data lineage simplifies audit processes, reduces the risk of non-compliance penalties, and strengthens overall governance, making it easier for manufacturers to maintain and demonstrate their adherence to industry regulations.

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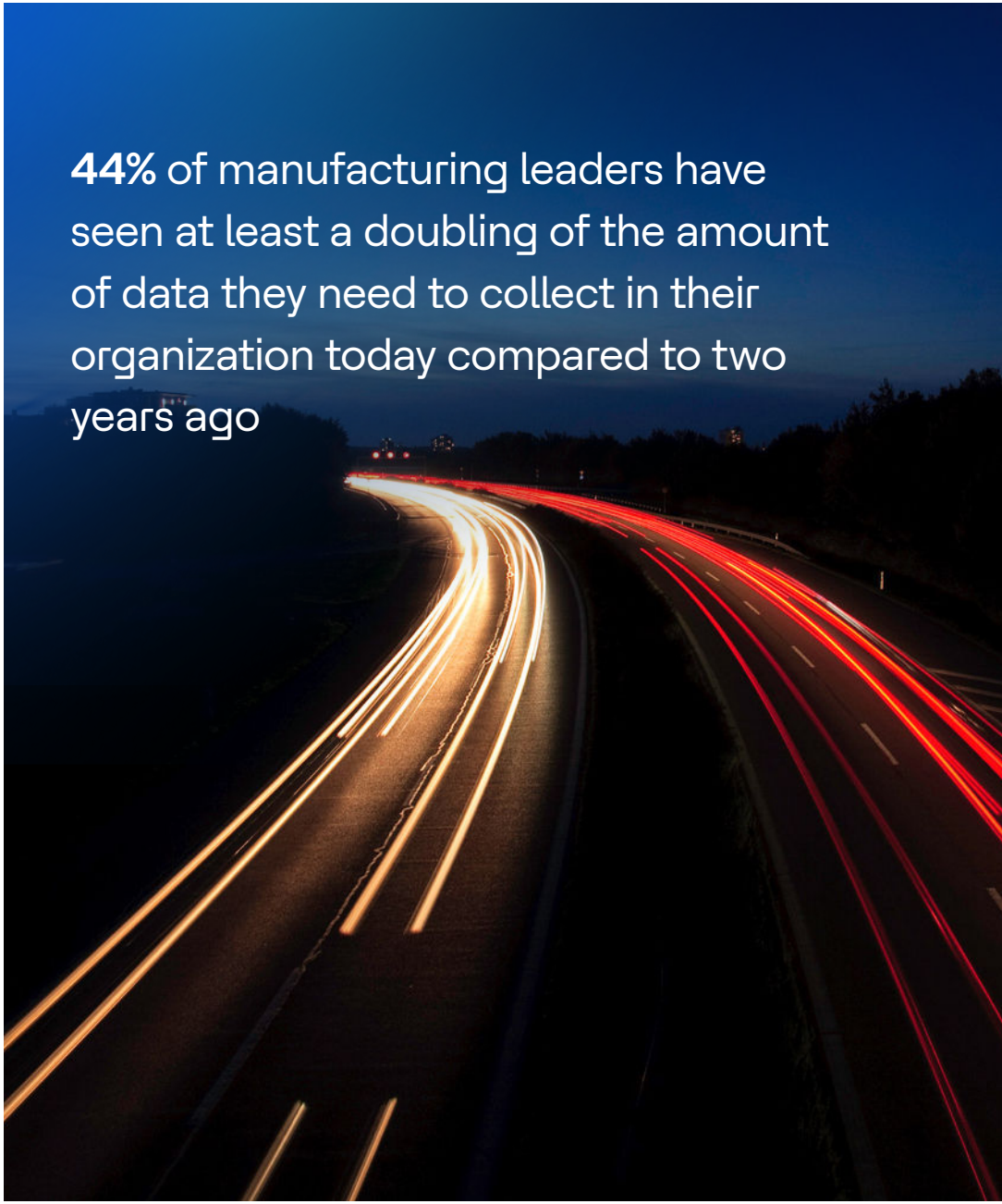
Product and Service Innovation

Innovation drives growth by enabling manufacturers to develop new products, enhance existing offerings, and differentiate themselves in competitive markets. Leveraging data to fuel research and development is essential for creating cutting-edge solutions that meet evolving customer needs.

Critical data is often buried across PLM systems, AI platforms, and IoT devices, making it difficult for research and development teams to find and reuse relevant datasets. This slows down innovation, increases costs, and hinders collaboration between teams.

A data catalog addresses these challenges by providing a centralized, searchable inventory of all data assets. By contextualizing metadata and establishing clear relationships between datasets, a catalog allows teams to quickly locate the information they need for innovation. This not only accelerates research, but also reduces duplication of effort, enabling manufacturers to bring new products to market faster and at lower costs.



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Validation

Customer: Gewobag

Gewobag is a prominent housing company based in Germany that is owned by the State of Berlin, specializing in the development, management, and rental of residential properties. Their group strategy revolves around three core pillars:

- Areas of Growth
- Social Responsibility
- Climate Protection

As Gewobag pursued this ambitious strategy, they found significant challenges in effectively managing the growing volume of data generated. In fact, they realized the critical need to digitize operations and adopt robust data management practices to anticipate future needs. In 2020, they initiated a data management project. They found their solution in Actian Data Intelligence Platform, which effectively resolved their challenges by addressing the following:

- **Data Interrelationships:** The data catalog provides a robust capability to map and understand the interrelationships between data assets, as well as clearly identify data responsibilities across the organization.
- **Data Transparency:** Through the data catalog, Gewobag can achieve enhanced data transparency. The synchronized metadata within the catalog displays crucial information about existing data sources, datasets, and reports, providing a comprehensive view of the organization's data ecosystem.
- **Data access:** Gewobag relies on intuitive tools for data access and reporting. For data analysis, they use Power BI – enabling powerful data visualization and analysis. Additionally, they leverage the data catalog solution for automated data documentation – facilitating easier data access and retrieval.
- **Data quality:** The data catalog serves as a reliable repository for documenting data quality. Gewobag openly and transparently records data quality indicators within the catalog, allowing business users to quickly identify and assess the risks associated with using unreliable data. This encourages a sense of responsibility among data users to document and share high-quality data.
- **Data literacy:** The data catalog serves as an efficient tool for sharing data knowledge within Gewobag. It plays a vital role in increasing data literacy across the organization, particularly through its integration into the training programs for new employees.

"We chose Actian's data catalog solution after a thorough review of the solutions available on the market as it was perfect for Gewobag: it is available in German, it automatically connects and synchronizes metadata from all of our sources, and it is unrivaled in terms of flexibility and configurability of properties and metamodeling. In addition, the product's user-friendliness seduced our data teams, and we hope that it will have the same recognition from the business users. Finally, we were accompanied by sales and support teams who carefully listened to us and adapted the product to our specific needs, right from the POC phase."

– Daniela Zelmer, Data Management Team Leader, Gewobag

Conclusion

The Actian Data Intelligence Platform is at the forefront of data transformation in manufacturing, empowering organizations to harness their data as a strategic asset. By addressing the core challenges of fragmented systems, inefficiencies, and regulatory complexities, Actian enables manufacturers to unlock actionable insights, streamline operations, and foster innovation. The intuitive and intelligent data discovery platform provides the tools needed to thrive in today's dynamic and competitive landscape.

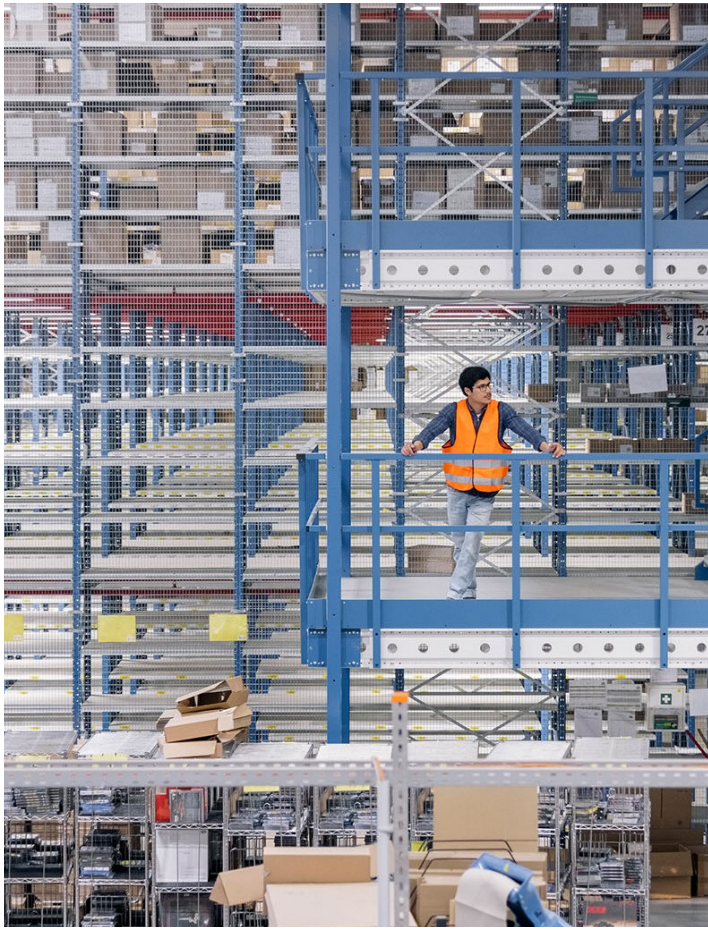
By enabling data-driven agility, powering predictive and preventative operations, and improving compliance and innovation with data governance, Actian delivers transformative benefits to manufacturers. These capabilities not only drive operational efficiency and reduce risks but also position manufacturers to innovate and maintain a competitive edge in evolving markets.

The journey toward data-driven transformation starts with the right tools and expertise. Actian's comprehensive data discovery platform simplifies complex data landscapes, empowering organizations to move from reactive to proactive decision-making.

Visit our website to join a live demo and learn more about how Actian can transform operations. With Actian, manufacturers can achieve unparalleled agility, reliability, and innovation, unlocking the full potential of their data.

About Actian

Actian empowers enterprises to confidently manage and govern data at scale. Organizations trust Actian data management and data intelligence solutions to streamline complex data environments and accelerate the delivery of AI-ready data. Designed to be flexible, Actian solutions integrate seamlessly and perform reliably across on-premises, cloud and hybrid environments. Learn more about Actian, the data division of **HCLSoftware**, at **actian.com**.



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