

CONTROL PANEL

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Accelerating Transformation in Manufacturing with Data Virtualization

How data virtualization can unlock
operational excellence and innovation
in manufacturing

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With fierce global competition and rising consumer expectations, it's no surprise that the pressures on the manufacturing sector are mounting. How can manufacturers remain relevant, innovative, and ahead of the curve? Simple, use your data.

Data isn't just numbers on a sheet; it's the detailed map guiding manufacturers towards greater efficiency, better products, and smarter strategies. From optimizing supply chains to anticipating market trends, data-driven insights are transforming the very fabric of the industry.

Having a mountain of data is one thing, but being able to go in, grab what you need, and tab out? That's the real trick. We all know time is a precious commodity and waiting months for the right data management to achieve your transformations, or complete architectural shifts, just won't cut it. That's where data virtualization comes in. Read on to see how virtualization can boost your transformation.

Inside this guide, you'll find:

- ① **How data can drive transformation**
- ② **The undeniable impact of data in modern manufacturing**
- ③ **Practical uses of data for quality, efficiency, and innovation**
- ④ **The magic of data virtualization for seamless data accessibility**
- ⑤ **Success stories from industry leaders like Toyota-Astra and Prologis**





Harnessing data to support your goals

Why do manufacturers need to use data better? Manufacturing is a key pillar of economic growth and innovation, and naturally, it's rapidly evolving. If you're not keeping up, you're falling behind. One of the best ways to stay ahead of the curve is by harnessing the power of your data, but why is that so crucial?

Thriving in a competitive landscape

- Globalization and Market Competition
- Increasing Customer Expectations



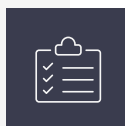
Operational Efficiency

- Cost-Effectiveness
- Process Optimisation



Strategic Decision-Making

- Long-term Planning
- Risk Assessment





How manufacturers can use data

Manufacturers can leverage data to enhance their operations, optimize supply chains, understand their consumers, and revolutionize product development.

Quality Control

Ensuring the highest calibre of production is non-negotiable.

Real-Time Monitoring: Through instant data collection and analysis, keep a pulse on your production processes, ensuring the highest level of quality and efficiency.

Predictive Maintenance: Foresee and mitigate potential machinery breakdowns. Use historical data to predict when equipment may fail, thus minimizing downtimes and maintaining uninterrupted production.

Supply Chain Optimization

Make your supply chain more robust, responsive, and resilient.

Inventory Management: By tracking real-time data, strike the perfect balance in your inventory – neither too much that it becomes a liability nor too little that it disrupts operations.

Supplier Evaluation: Analyze performance data from your suppliers to ensure timely deliveries, quality materials, and competitive costs, ensuring a seamless supply chain.

Customer Insights:

Understand the heartbeats and preferences of those who drive your market.

Demand Forecasting: Use historical sales data and market trends to anticipate future demand, ensuring you're always a step ahead.

Customer Segmentation: Dive deep into customer data for more effective segmentation and targeting, delivering personalized experiences and solutions.

Product Development:

Pushing the envelope of what's possible.

Research & Development Enhancement: By analyzing past successes and failures, refine your R&D processes, leading to ground-breaking innovations.

Time-to-Market Reduction: Speed is of the essence. Harness data-driven insights to expedite the product launch process, getting your innovations to market faster.



Data should be seen as a beacon, guiding each step with precision and clarity. Embrace its potential, and make sure your data is accessible. **How? Through data virtualization.**



The Sprint | How data virtualization can help accelerate transformation

It's not just about having heaps of data; it's about accessing, processing, and leveraging it effectively. Enter data virtualization. If you're new to the term, data virtualization is a modern approach to data integration that enables seamless access to all business data, regardless of where it may reside, delivered through a unified platform. This approach empowers users to easily interact with data from various sources and formats as if it were a single, well integrated source. With the power to unify and streamline data, virtualization is quickly becoming the secret weapon for businesses keen on accelerating their operations.

Here's how it could help you:

Predictive Analysis

By bridging disparate data sources and providing seamless access to crucial information, data virtualization sets the stage for enhanced analytics. Yet, it's not just about connecting data points. The true transformative power is ignited when this unified dataset is channelled to downstream systems and processed by your skilled analysts. With data virtualization, these forecasts are sharper and more reliable. Leveraging rich, diverse datasets, manufacturers can glean insights that might seem as juicy as a fruit salad. But it's not just about indulging in the richness of the data—it's about proactively sculpting manufacturing strategies to stay ahead of market fluxes.

Real-Time Dashboards

Who doesn't want a dashboard that updates in the blink of an eye? With data virtualization, you're not just looking at pretty charts. You're getting a real-time window into your Key Performance Indicators (KPIs). What does this mean for your team? With up-to-the-second data, production hitches can be identified and rectified instantaneously, accelerating the pace of transformation and productivity.

Employee Training and Engagement

Data virtualization isn't just high-end tech. It's transforming employee training too. By centralizing access to diverse data, regardless of location or format, it modernizes learning. Employees can now explore interactive simulations of manufacturing processes through a unified data platform. This approach provides them with the latest, most relevant information, ensuring a more engaging and effective training experience. With real-time feedback on performance metrics, every employee enjoys a personalized, data-driven learning path, significantly enhancing the efficiency and transformation of your manufacturing operations.

Data Integration

Here's the cherry on top. Data virtualization doesn't just hand you data on a silver platter—it integrates everything. Think of it as a grand symphony of centralized data sources, all playing in perfect harmony. No more jumping between systems or wrestling with incompatible formats. With data virtualization, interoperability is the name of the game. And when everything talks to everything else, you're not just saving time—you're driving transformation.





Case Study | Toyota-Astra

Toyota-Astra used the data catalog built into the Denodo Platform to make their data search and exploration extremely easy, even for nontechnical users. The Denodo Platform enabled ease of access to the data in Toyota's ecosystem, enabling different business user groups to find the right dataset and use it for their own analysis. **The key benefits Toyota-Astra identified were:**

①

Flexible Data Architecture:

Data virtualization enhanced Toyota-Astra's agility in data architecture. It allowed for rapid integration of data sources without business disruption and utilized a caching database for handling large data sets without burdening the source system.

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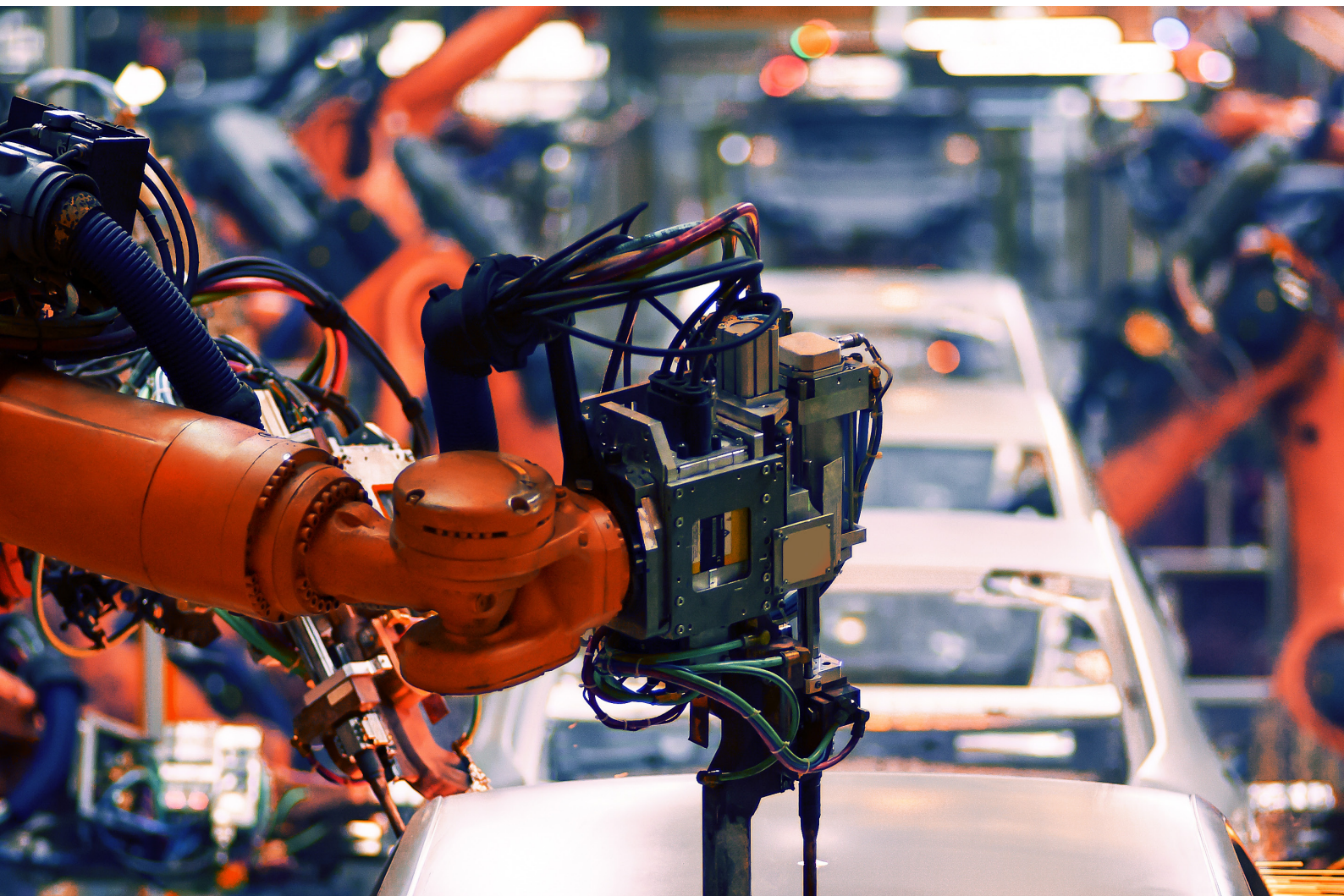
Data Accessibility & Self-Service:

Data catalog made data discovery and search effortless. It facilitated understanding of data lineage, boosting trust in data usage, promoting self-service, and reducing the reliance on shadow IT.

③

Data Governance & Security:

Toyota-Astra achieved centralized data access, governance, and security across all data sources. This centralized approach simplified IT auditing and enabled real-time user activity monitoring.

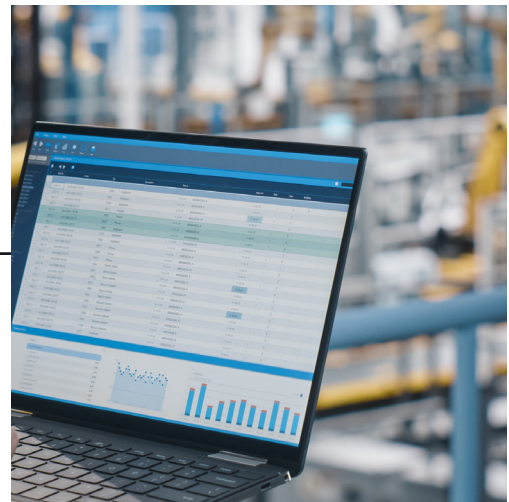




The Marathon | How data virtualization can enable long-term projects

Replacing Legacy Systems

Let's face it, those old legacy systems have done their bit, but it's time we moved with the times. Modernizing isn't just about keeping up; it's crucial for any business wanting to stay relevant. By allowing seamless integration of old and new systems, data virtualization ensures manufacturers aren't held back by outdated tech. As a result, manufacturing units can transition smoothly, harness real-time insights, and embark on an accelerated transformation journey from the get-go.



Cloud Migration

Considering the shift to the cloud with a wealth of data? It's a significant leap, but data virtualization is your key ally, acting as an abstraction layer between data consumers and sources. It organizes your data and provides a central hub for access, ensuring that even as data migrates from on-premises to the cloud, the experience for data consumers remains consistent and uninterrupted. This preparation means when you're ready to transition, everything is in place without disruptions. With data virtualization, your move to the cloud becomes a smooth, exciting journey, free from the complexities of backend changes.



Strategic Planning

Strategy is not just about today or tomorrow – it's the long haul we've got to think about. With data virtualization in your toolkit, you've got a sharper lens for long-term forecasting. By consolidating and presenting data from various touchpoints, manufacturers can engage in proactive, informed decision-making. This isn't just about reacting to current trends but setting the stage for future innovation. It's like having a roadmap with fewer bumps. And risk mitigation? Data virtualization has that covered too. It helps you navigate potential pitfalls, ensuring your projects are on the front foot.





Case Study | Prologis

Prologis, a leader in logistics real estate solutions, need their data scientists and capital deployment stakeholders to make fast, insightful decisions that move the company forward.

However, they pinpointed a major challenge preventing them from achieving this goal. 80% of their time was consumed in cleaning and preparing data, leaving just 20% for finding the answer. They wanted a solution that allowed data scientists to focus on solving problems with AI models in the language they're most comfortable with. With the focus being on how to optimize the cost of their raw building materials, they used Denodo's platform to leverage advanced analytics and maths models to help them optimize the should-cost of raw material goods. That resulted in:

1

Knowing exactly what the rates should be

2

The seasonality of when they should buy

3

Optimizing the whole development process and reducing costs along the way

Denodo enhances the solution by providing a continuous flow of real-time data, formatted to meet data scientists' needs for their models. Through its interface, Denodo enables on-demand data access and analysis, streamlining the data preparation process. This significantly reduced the time traditionally spent on data preparation – by up to 80% – allowing their data scientists to focus more on deriving insights and delivering results to users, accelerating the overall analytical process.





As we draw this guide to a close, let's pause and reflect on the journey to transformation that data virtualization promises to the manufacturing sector. By offering a unified, real-time view of data from diverse sources, without the need for physical data movement, data virtualization is not just complementing but accelerating the wider transformation. Whether it's streamlining operations, predicting market shifts, or enhancing product quality, data virtualization ensures that the right data is available at the right time, even as broader transformation initiatives continue.

Manufacturing is at a time of critical digital transformation, propelled by data-driven strategies. As manufacturers, business leaders, and innovators, the ball is in your court to accelerate transformation by harnessing the power of data with intentionality and vision, both achieving quick-wins and supporting long-term goals.



How can Amplifi and Denodo help?

Whatever stage of your data management journey you're on, Amplifi provide strategy, delivery, and support services for data integration and virtualization. We can also deliver data virtualization as part of a modern approach such as data mesh or a data fabric architecture.

As a Denodo partner, we're able to support your project to a successful completion. Whether you're looking to implement a new instance of Denodo's data management solution or require support of their software, Amplifi has the experience and expertise to help.

From the governance and management of data through to analytics and automation, our integrated approach to modern data ecosystems delivers measurable results through a combination of expert consultancy and best-in-breed technology.

Our services include Data Strategy, Data Mesh, Data Fabric, Data Governance, Data Quality, Data Migration, Data Integration, Metadata Management, Master Data Management (MDM), and Product Information Management (PIM).

Realize the power of data, and let it lead the way to accelerating transformation in your business. Talk to us about your manufacturing challenges, and we'll guide you towards accelerated success. Let's chart a path together, [connect with our experts](#) to get started.

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