Process Mining for Manufacturing

Improving On-Time Delivery

Introduction:

Meeting promised delivery dates is essential for customer satisfaction and competitiveness—especially in today's complex manufacturing environments.
However, **Operations Managers** and **Production Leaders** are often challenged by misaligned planning, supplier delays, production bottlenecks, and limited process visibility across sales, production, and procurement.

Process Mining—powered by **Process.Science**—bridges this gap by transforming system data into transparent, actionable process flows. It enables companies to track and optimize end-to-end delivery performance by identifying where delays occur, why they happen, and how they can be resolved.

Understanding Delivery Reliability Challenges

Whether in discrete or process manufacturing, on-time delivery (OTD) depends on seamless coordination between multiple areas. Common challenges include:

- **Sales commits to delivery dates without real-time capacity insight**
- **Production delays caused by material shortages or machine downtime**
- **Procurement inefficiencies leading to late supplier deliveries**
- **Misalignment between planning and execution systems**
- **Limited ability to analyze historical delivery performance trends**

These gaps result in missed delivery dates, expedited shipping costs, and declining customer trust.

How Process Mining Improves On-Time Delivery

Process Mining analyzes actual process execution data from ERP, MES, planning, and logistics systems. It reveals how sales orders, production jobs, and purchase orders flow through the organization—identifying root causes of delivery issues.

Key benefits for Operations and Production teams:

- **End-to-end process transparency:** Visualize the full order-to-delivery chain
- **Early delay detection:** Identify bottlenecks in procurement or production
- **Improved production planning:** Align capacity with demand forecasts
- **Root cause analysis of late deliveries:** Understand deviations from standard processes
- **Better supplier performance control:** Monitor delivery accuracy and responsiveness

Insights Drive Performance.

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Real World Applications

Case Study: Boosting Delivery Reliability in Industrial Manufacturing

A leading component manufacturer faced delivery punctuality below 85%.
Using **Process Mining**, they:

- Traced sales orders through procurement and production in SAP
- Discovered recurring delays in part availability due to supplier variability
- Improved coordination, resulting in a **12% increase in OTD** within 6 months

Case Study: Closing the Gap Between Planning and Execution

A mid-sized machinery company struggled to keep production aligned with sales priorities.
With **Process Mining**, they:

- Mapped order flows against production resource allocation
- Identified planning overrides and rework loops
- Increased schedule adherence by **25%** and reduced lead time variability

How Process.Science Supports Cross-Functional Optimization

Process.Science delivers integrated **Process Mining** solutions tailored to the operational complexity of manufacturers. Our tools work inside **Power BI** and **Qlik Sense**, so teams can analyze real-time data without leaving familiar environments.

Our solution includes:

- **Visual Data Mining:** See how orders, jobs, and deliveries flow across teams
- **Data Preparation Tool:** Harmonize data from ERP, MES, and planning tools (e.g., SAP, Oracle, APS)
- **Cross-process linking:** Connect sales, production, and procurement flows into one view

Why Process.Science for delivery performance:

- Designed for operations—not just analysts
- Fast deployment and scalable across sites
- No-code, real-time insights embedded in daily workflows

Key Takeaways for Operations Managers

This white paper is for Operations Managers, Production Heads, and Process Improvement Teams who want to:

- Increase delivery reliability through data-driven process control
- Break down silos between sales, production, and purchasing
- Monitor, analyze, and improve delivery performance continuously
- Ensure customer promises can be kept—efficiently and repeatably

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With **Process Mining** from **Process.Science**, companies gain full visibility across the order fulfillment chain—and the ability to deliver on time, every time.

Let’s turn delivery reliability into your competitive edge.

Your Path to Process Mining Success

Quick Start with Manageable Effort

Initiating your journey with Process Mining is more straightforward than you might expect. Thanks to seamless integration with existing BI systems like Power BI or Qlik Sense, you can utilize familiar tools. For a Proof of Value, you only need:

- Basic process data (Event Logs) from your systems - our solution can extract this from many tools.
- 1-2 days for initial setup and first results.
- One specific business process as a starting point.

Key Advantages of the Process.Science Approach

- **Leverage Existing BI Investment:** No need to invest in standalone platforms.
- **Unified Analytics Environment:** Access both process and business data in one place.
- **Rapid Time-to-Value:** Typical deployment occurs within 6-8 weeks.
- **User-Friendly Interface:** Accessible to business users beyond just data scientists.
- **Enterprise-Grade Security:** Compliant with industry security standards.

Conclusion

Process Mining presents a transformative opportunity for logistics companies aiming to optimize operations, reduce costs, and enhance customer satisfaction. By opting for Process.Science’s BI-integrated approach, organizations can implement Process Mining seamlessly without disrupting existing systems or incurring significant new investments.

Insights Drive Performance.