TOP10

Transformative Analytics Scenarios in Manufacturing

Qlik

Industry 4.0

Like many industries today, manufacturing is experiencing transformation at a staggering pace. With the rise of globalization, evolving customer demands, and growing digital commerce, manufacturing is experiencing a fourth industrial revolution: Industry 4.0.

- Internet of Things sensor data is changing operations on the factory floor
- Manufacturers are using IoT data to create the “smart factory”
- Cyber-physical systems communicate and cooperate with each other and with people in real time

The confluence of these technology trends holds great promise for manufacturers looking to improve efficiencies and flexibility while lowering costs. The impact will be significant in every corner of the manufacturing industry including subsectors like automotive, high-tech, chemicals, and mill products.

Industry 4.0 Market Drivers

The transformation in manufacturing today is driven by three market forces:

Integrated Operations

In Industry 4.0, integrating operations is key to streamlining manufacturing processes. Manufacturers can use their IoT data and insights to optimize everything from equipment effectiveness and product lifecycles to inventory traceability and supplier collaboration.

The Agile Supply Chain

With globalization and continuous product innovation, today's supply chain is becoming increasingly complex. Industry 4.0 requires an agile supply chain that enables manufacturers to quickly respond to market demands and ensure inventory availability.

The Connected Consumer

Today's consumers are more empowered than ever. Manufacturers must compete for their attention by understanding consumer behavior, developing the right products, and intelligently engaging with consumers in a competitive marketplace.

The Role of Analytics in Manufacturing

Whether used to ensure product and inventory availability, increase equipment efficiency, or perform market analysis, data plays a key role in manufacturing. By grasping operational insights, manufacturers can effectively:

- Understand the cost and efficiency of every component in the product lifecycle
- Develop systems that consistently gauge the need for repairs and provide early alerts
- Gain real-time insight into how manufacturing lines are operating, on a micro and macro scale
- Use predictive insights for smarter forecasting
- Optimize the warehouse with insights into efficient product flow and replenishment procedures

With greater visibility and insights at the point of decision, manufacturers can harness the benefits of the smart factory.

By the end of 2020,
one-third
of manufacturing supply chains will use analytics-driven cognitive capabilities, increasing cost efficiency by 10%.*

By 2020,
60%
of manufacturers will rely on digital platforms that will support as much as 30% of their overall revenue.*

* "Top 10 Predictions for Global Manufacturing in 2018: IDC," Industry Week, December 19, 2017.

Top 10 Analytics Scenarios in Manufacturing

Today's leading manufacturers rely on Qlik for their data analytics and insights. Read on to learn more about the ways Qlik helps manufacturers transform their raw data into actionable insights.

Understand how customer feedback and satisfaction have an impact on product direction and revenue.

1 Innovation and Design

Developing innovative products that appeal to consumers is a crucial objective for manufacturers. Analytics can help manufacturers with the design and development of their products, driving target costing and ensuring lifecycle profitability.

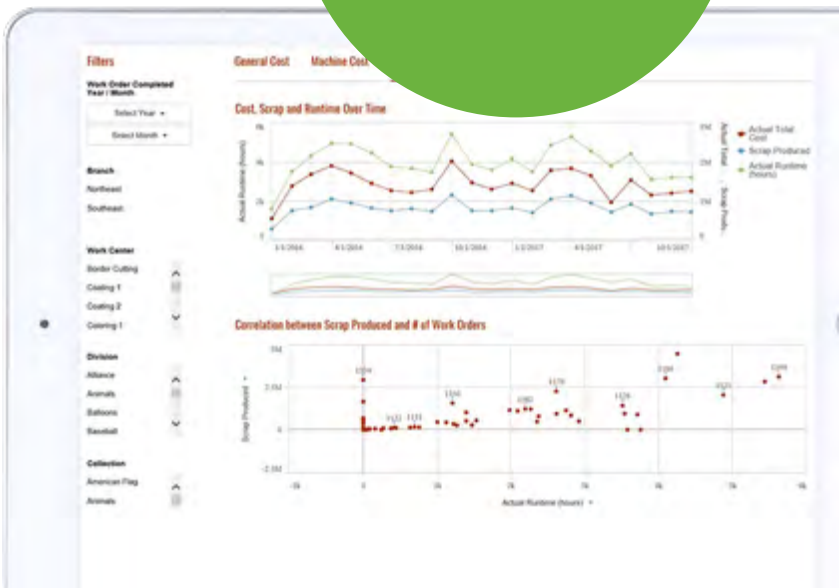
With Qlik, manufacturers can support innovation and design with insights from engineering, customer satisfaction, component reliability, quality evaluation, and prototyping analysis.

2 Process Efficiency Analysis

Ensuring process efficiency extends far beyond implementing a lean strategy focused solely on the manufacturing process. By analyzing the full ecosystem of processes, whether optimizing costs in product design or ensuring productivity on the shop floor, manufacturers can easily spot inefficiencies.

Qlik helps manufacturers manage process efficiency with insights into sourcing and procurement, asset availability, work order cycle times, and schedule adherence to eliminate waste and offer a clear picture into how operations are running.

Analyze processes to identify areas to improve quality and reduce costs.



Analyze spend by category, country, vendor, and business unit by measuring target KPIs against goals and trends.

3 Procurement Analysis

Key to driving efficiencies in manufacturing is ensuring precision and quality in procurement. However, challenges arise from varying costs from multiple suppliers, lack of visibility into supplier pricing packages, and a lack of conformity to parts specifications.

With Qlik, manufacturers can improve procurement with bill of materials analysis, parts and component permutation evaluation, cost trending and optimization, and supplier performance scorecards. These insights enable manufacturers to ensure access to quality materials and components while maximizing profits.

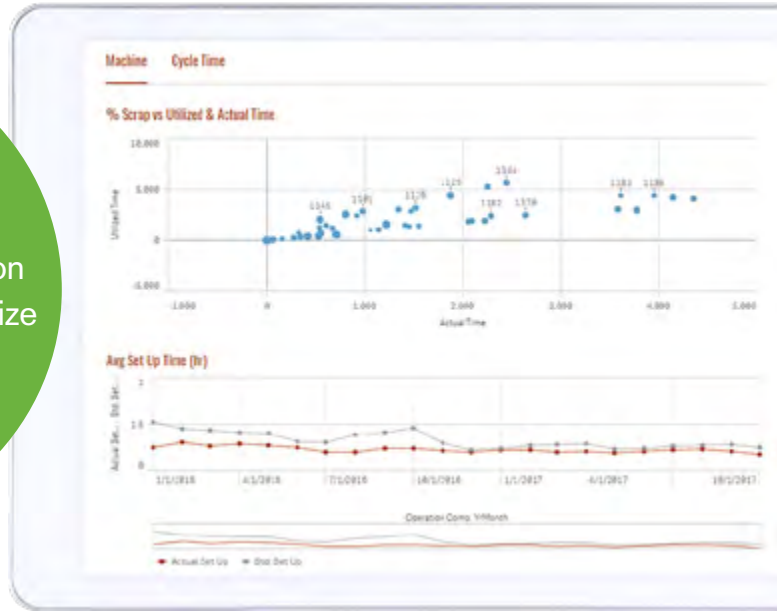
4 Production and Quality Visibility

Overseeing production and quality is crucial for any manufacturer. But it can be challenging to harness large volumes of data across multiple workstations to gain a holistic, comprehensive view of production.

Qlik offers visibility into the entire production lifecycle, connecting the dots and enabling manufacturers to ensure quality products, on-time delivery, and streamlined efficiencies. By harnessing data from multiple disparate systems across the production lifecycle, Qlik helps manufacturers analyze and optimize production, gain visibility into upstream and downstream workstations, ensure quality management, and identify the root causes of quality concerns.

Monitor quality, performance, and availability by operation, product, shift type, and trends over time.

Compare machine utilization time vs. scrap rate to optimize output and efficiency.



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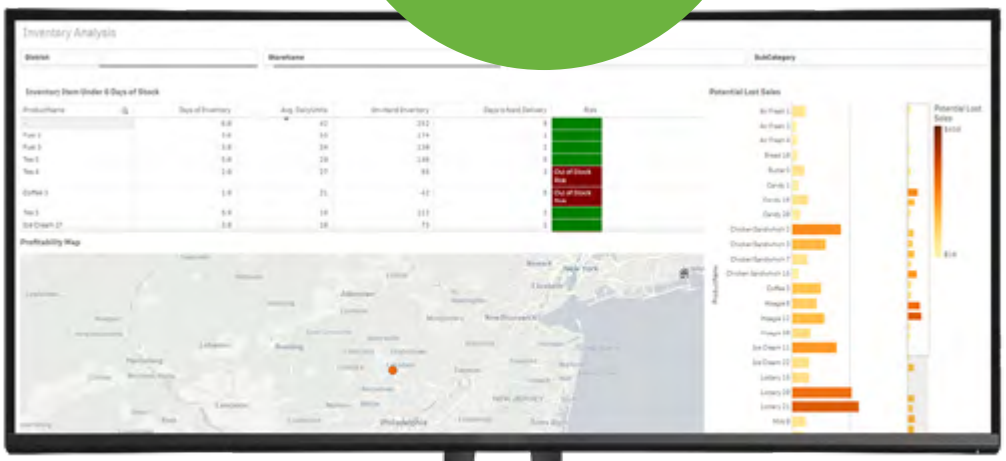
Machine Utilization and Efficiency Analysis

The typical assembly line consists of a variety of machines that perform specialized tasks. Gaining a holistic view into these varied machines enables manufacturers to monitor machine utilization and efficiency automatically and in real time.

Qlik helps manufacturers in this endeavor by integrating data from multiple connected machines and enabling custom visualization dashboards. With this visibility, supervisors can regularly check machines, take corrective action, and optimize production schedules according to machine availability.

Compare on-hand inventory levels with average turnover to identify potential out-of-stock risks and revenue impact.



6 Inventory Management and Analysis

One of the most significant challenges for manufacturers is managing inventory. Excess inventory reduces turnover and profitability, yet stock-outs result in lost sales, backorders, and dissatisfied consumers. For manufacturers of food or other perishable items, the implications are even greater.

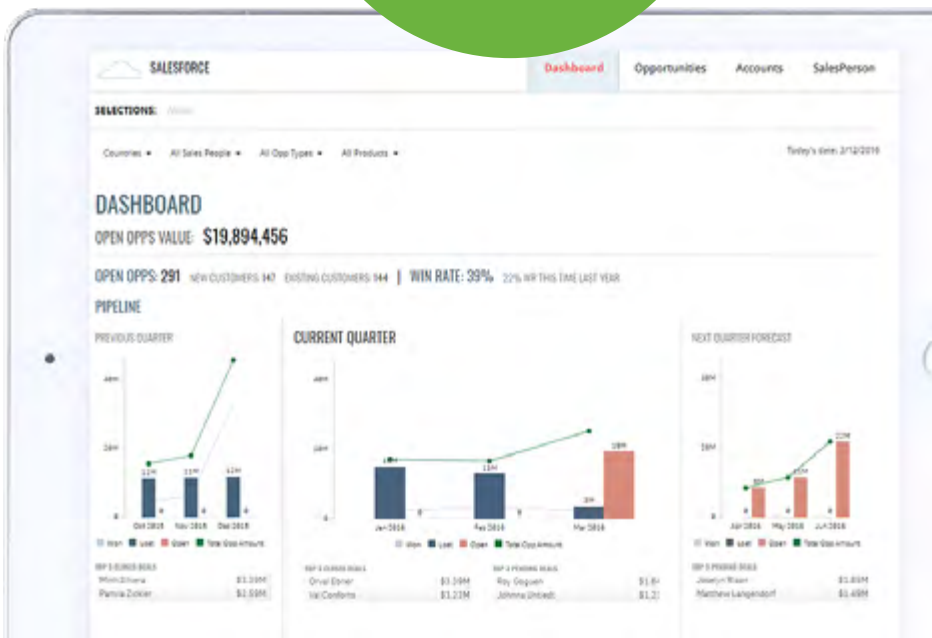
With better visibility, manufacturers can take the guesswork out of inventory management. Qlik provides the dashboards and drill-down capabilities that enable manufacturers to make data-driven decisions about inventory levels to avoid stock-outs and excess supply.

7 Sales and Marketing Analysis

For all manufacturing subsectors, understanding customer preferences and sales networks is crucial. To improve sales and marketing, the manufacturer must first determine relevant metrics and analyze that data to ensure sales and marketing are performing to expectations.

Qlik helps manufacturers analyze sales and marketing by providing insights into consumer behavior, availability of stock, optimal pricing for the greatest return, and sales network performance. These insights help manufacturers ensure products are developed and sold according to market demand.

Compare opportunity pipeline vs. forecast by sales hierarchy, region, and product.



Compare forecast vs. actuals, forecast accuracy and bias by region, product, and demand planning hierarchy.

8 Market Potential Analysis and Demand Forecasting

Determining the market potential for a new product is critical to ensuring the profitability of the manufacturing organization. Calculating and forecasting market potential involves analyzing the size of the market, market growth, competition, and other factors.

Qlik helps manufacturers analyze their data to identify market opportunities and invest resources where they will have the greatest return. The data helps identify growth drivers and barriers in relevant markets and quantify market potential for a given product.

Optimize shipment mode, analyze on-time delivery, and distribution routes.

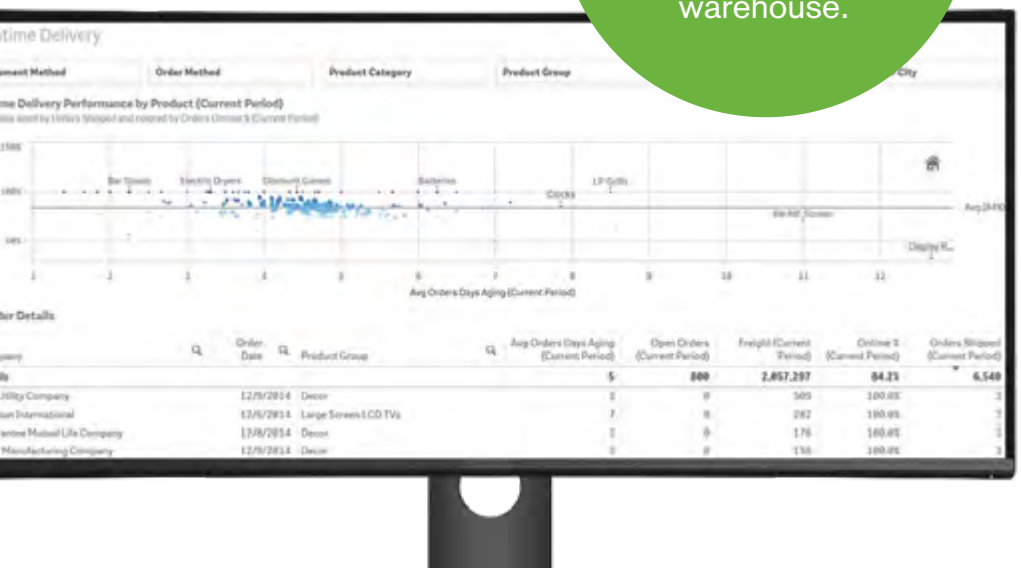
9

End-to-End Supply Chain Visibility

As manufacturing becomes more global and as consumer demand becomes more volatile, supply chains become more complex. Gaining visibility into the entire supply chain is crucial to overcoming this complexity.

Qlik enables manufacturers to analyze their supply chain data to monitor global supply networks, align with third-party service providers, ensure traceability, reduce volatility, and control costs.

Optimize the use of warehouse space and the efficient movement of goods in and out of the warehouse.



10 Warehouse Optimization and Analysis

In manufacturing, a key challenge is ensuring the efficient use of warehouse space. When space is at a premium, optimizing the warehouse is key. Space planning and optimization can help save time, space, and resources to improve flexibility and reduce costs.

Qlik helps manufacturers optimize their warehouses by analyzing warehouse flow, product placement, and storage and retrieval. With these insights, the manufacturer can ensure space is used efficiently, materials are handled well, and changing storage and handling requirements are met with flexibility.

Manufacturing Analytics in Action

Cars consist of hundreds of components. For **Audi** to ensure a smooth production process, effective logistics are crucial. The German auto manufacturer uses Qlik to achieve 98.5% accuracy in the delivery of components for production, making sure the right materials arrive at the conveyor belt in the right quantities, in the right order, at the right time.

Precise planning and production control are crucial as **Siemens** strives to ensure customer satisfaction. With Qlik, the German manufacturer empowers users with self-service capabilities and ease of use, equating to 75% less time spent accessing data.

For **Varian Medical Systems**, analyzing data from multiple systems became cumbersome and time consuming. With Qlik, the company analyzes more than 110 million log records from its radiation therapy machines, combining multiple data sources including IoT sensor data and machine events. The single source of truth has earned the trust of a broad, global user base.

Transforming the culture of the sales team is key to **Andersen Windows** as it works to increase sales. Differentiated reporting and on-demand data access from Qlik help the company increase sales efficiency, view purchasing trends, identify pipeline opportunities, and track sales performance against goals.

Manufacturers Achieving Results with Qlik

"Having control over our entire supply chain and being able to analyze trends using an intelligent system brings us more value than could ever be expressed in monetary terms."

–Geertjan Woltjes, COO, Quooker

"The impact of Qlik has been far reaching. Its simplicity of use and the valuable contribution it has made to business processes have made Qlik a strategic asset to our operations.

–César Pérez, Head of Business Process Office, Sony

"In less than two months, we were able to realize a complete ROI and reach new levels of analysis that would have required the hiring of four additional analysts."

–Allan Dziwoki, VP of Business Services,

Mitsubishi Electric Cooling & Heating

About Qlik®

Qlik delivers intuitive data analytics solutions to the world's leading manufacturing organizations. Our world-class industry solutions, combined with our comprehensive consulting, training, and support services, ensure our customers get the most from their Qlik implementations. We bring specific industry and functional-level experience to our customers, driving rapid understanding of unique business problems in multiple industries.

See how Qlik is transforming manufacturing by visiting us at **qlik.com/manufacturing.**

qlik.com