

Business Intelligence and the Future of Manufacturing

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Today's plant floors generate unimaginable volumes of data. That data can help a manufacturer increase throughput, understand where it is most exposed to risk and respond to customer demands in near-real time. Yet in the manufacturing sector, many businesses struggle to maintain pace with their data.

A 2011 [report](#) [1] on business intelligence (BI) in manufacturing by analyst firm Ventana Research found that 59 percent of manufacturing businesses reported their data was only somewhat accurate, and that 47 percent of manufacturers regularly delivered monthly, quarterly, and yearly reports beyond 7 days after the period ended.

Data that is inaccurate and delayed can harm any business. Manufacturers certainly aren't alone—their counterparts in retail, finance and healthcare, for example, all grapple with how to make sense of the massive amount of information generated by the data-driven nature of today's businesses.

Manufacturers are battling narrow profit margins, intensifying competitive pressures, and buyers who have fewer dollars to spend.

Manufacturing companies are also faced with operations and external supply chain activities that have become extremely complex, making them much harder to streamline, track, and control. As a result, manufacturers need new ways to optimize productivity, improve customer service, expand market share, increase revenue, and minimize expenses.

The Value of Business Intelligence

The answers for the manufacturing industry are within information created by their daily processes.

That data is located across diverse systems and locations, produced in many different forms and available to inform business processes in various ways. Businesses in manufacturing collect and track information from multiple enterprise systems, supplies and costs, real-time external feeds, customer and partner communications, financial information systems and industry market fluctuations.

Unyielding data streams mean it's no longer up to IT and analytics professionals alone to manage business intelligence. BI and analytics must be pervasive in a manufacturing company, where business professionals with different responsibilities should be able view, interpret and act on data during the course of business.

But the Ventana Research report also found manufacturing is overly reliant on outmoded models for crunching data. The firm reported 90 percent of manufacturing companies use spreadsheets regularly, and 48 percent use spreadsheets for BI and analytics. The regular use of spreadsheets amounted to a two-day lag in providing metrics and key performance indicators (KPIs) to decision makers in the business, according to the report.

Ventana Research concluded only 12 percent of all manufacturing-focused corporations attained the firm's highest ranking for maturity in their use of analytics.

BI in the Cloud for Manufacturing

Manufacturing businesses often use Enterprise Resource Planning (ERP) tools to manage all aspects of their business. ERP can now be delivered via the cloud for flexible and scalable management.

Some cloud-based ERP tools, like the [Plex Manufacturing Cloud](#) [2] from Plex Systems Inc., are modernizing how manufacturers handle and share their data. The Plex Manufacturing Cloud contains an embedded BI platform called IntelliPlex that allows its manufacturing customers to quickly and easily view and manipulate data to gain business insights.

IntelliPlex, rebranded from the WebFOCUS InfoAssist platform from business intelligence provider Information Builders, uses a set of [web-based design tools](#) [3] that lets people drag and drop data elements into custom reports and dashboards. Because it is a cloud-based manufacturing ERP software, companies can avoid a large capital expenditure for IT hardware and upgrades are not required because new features and functions are available immediately.

For manufacturers, such a cloud-based ERP module with built-in BI can be embedded into a larger solution or rebranded as its own application.

This means even non-technical users in a manufacturing business can filter

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Published on Food Manufacturing (<http://www.foodmanufacturing.com>)

information, visualize it through interactive displays, and create reports, charts, scorecards, and dashboards to share with others – all without assistance from the IT department. Many manufacturers use the tool to create reports on manufacturing metrics, key performance indicators (KPIs), scorecard data and cash flow. As reports are created, they can be automatically e-mailed to other users or set up for scheduled distribution. In short, BI is seamlessly integrated into the business's operation.

In addition, many manufacturers define their own KPIs to assist with traceability, which involves finding problems at the source and then taking action to remediate those problems.

For example, if a brake manufacturer learns about a bad shipment of brake pads, it can use IntelliPlex to trace the serial number and then track the associated lots through the manufacturing process to determine where the defect originated. A sales manager could follow the same approach to examine results by region or sector, and then drill down to individual invoices to determine which sales people are performing well.

Other reports assist with inventory management by keeping workers apprised of projected and actual quantities during manufacturing, assembly, and distribution processes.

Traceability is critical in manufacturing, an industry in which businesses must coordinate product recalls and accountability issues. BI reports help them to uncover problems, maximize profitability and extend best practices inside the business from department to department and externally, with partners and customers.

Cloud-based BI platforms can also help manufacturers solve analyzing operational metrics.

A typical mid-sized manufacturer might have hundreds of machines working around the clock. Assembly lines generate information from networked sensors that can be used for equipment configuration, troubleshooting, quality control, and maintenance purposes. Each machine captures an immense volume of data at each stage of the manufacturing process. Manufacturers need to continually examine this data to circumvent problems and keep the operation running at peak capacity.

Manufacturing and Data Discovery

The kind of real-time, ground level insight offered by a cloud-based ERP platform with business intelligence capabilities helps manufacturers manage information in a way that benefits every user in the organization, from the shop floor to the CEO's office.

Information is key to data discovery. [Data discovery](#) [4] is a term commonly used to describe the process of collecting and consolidating information from various back-end systems and sources, then using interactive dashboards to manipulate and

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analyze it to uncover patterns, trends, relationships, and anomalies.

BI in the cloud and easy-to-use data discovery tools can erase barriers to business intelligence adoption in manufacturing. Among the most common are the absence of resources, lack of budget, and a lack of awareness of BI and analytics, according to Ventana Research.

But the continuous innovation of emerging technologies can speed the rate at which manufacturing companies become adopters of BI platforms. Through better management of their growing data assets, organizations can create an analytics-driven culture to improve business performance, foster innovation to transform processes, and share strategic insights.

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