

Improved Data Visibility Drives Manufacturing Performance



At a Glance:

- This paper highlights the strategic importance of real-time manufacturing data, and how cloud ERP is uniquely suited to deliver company-wide visibility into operations.
- Getting the right information, at the right time, to the right decision-maker is essential. Without it, manufacturers do not have the insight to improve planning, forecasting, production scheduling, supply chain management and more.
- The paper concludes with real-life examples of companies that use data visibility to improve decision-making and business performance.



Data, Data Everywhere

Manufacturing stores more data than any other sector.

Given the proliferation of data, that's an impressive feat. According to the McKinsey Global Insight report entitled "Big Data: The Next Frontier for Innovation, Competition and Productivity," the manufacturing sector stores close to 2 exabytes of new data each year.

The report reminds us that manufacturers generate data from a multitude of sources. Data originates from instrumented production machinery, process control, and supply chain management systems, to systems that monitor the performance of finished products. As an example, the report notes that during a single cross-country flight, a Boeing 737 generates 240 terabytes of data.

What do manufacturers do with this data?

Researchers find that manufacturers seek to combine data from different systems such as computer-aided design, computer-aided engineering, computer-aided manufacturing, collaborative product development management, and digital manufacturing. This extends across organizational boundaries, even beyond the four walls, for instance, to include end-to-end supply chain data.

The strategic use of this data makes all the difference to a company's overall performance.

The Case for Improved Visibility

From the earliest days of ERP, manufacturers have worked toward increasing visibility into production processes and resource usage.

While early ERP systems provided the ability to access operational data, today's business intelligence (BI) tools make it even easier to identify the right information for rapid decision-making.

Advanced BI applications seamlessly handle the collection, presentation, and analysis of critical, real-time data for decision-makers throughout the enterprise and the supply chain.

In fact, researchers find that best-in-class manufacturers leverage emerging manufacturing intelligence systems for improved visibility into real-time data from factory floor systems. Process and discrete manufacturers, as well as consumer products manufacturers, seek to improve visibility into real-time factory and plant floor performance data using "actionable" dashboards that are easily customized by function and business area.

A Strategic Approach

Operational visibility is critical in high-precision, high-liability manufacturing such as automotive or aerospace. Food processors/manufacturers also demand 20/20 vision into their operations to meet complicated regulations for the track and trace of product ingredients.

Manufacturers do well to gain a commanding view of the upstream and downstream trace of all production components. With improved vision, companies keep a real-time eye on the complete viability of overall operations.

“Top performing manufacturers rely on real-time plant floor data to squeeze more profitability from operational processes and resources.”



As an example, it is important for engineering — which might be located in one facility — to understand how design changes in products or processes impact quality, efficiency, and performance at the production plant.

Likewise, manufacturing must understand how missing production schedules or releasing poor quality products impacts the extended supply chain. Often, the foundation for shared understanding is found in an agreed set of metrics of which all groups have visibility.

Visibility in Action: Process Manufacturing

In one example of improved visibility, an industrial coating company enjoys enhanced visibility after replacing multiple systems with cloud ERP.

An enhanced traceability function via a serialized barcode label lets workers see the date, time and duration a specific part has been at each step. This allows quality managers to easily detect issues or deviations in the process. When problems occur, they are investigated quickly and easily because each part leaves a detailed history, allowing immediate corrective action.

This improved visibility helps the company identify and track coatings, solvents, and blends. The company sees the exact quantity of coating and solvent in each blend; the amount of coating or blend used at each operation; and the location of every coating, solvent, and blend container throughout the plant.

Why is this level of traceability important? Real-time production visibility is critical to meet regulatory and customer mandates. Management easily sees a history of specific containers through graphically designed displays. Real-time reporting of coatings, solvents, and blends lets the company optimize the process, improve quality, and ultimately improve customer satisfaction.

Visibility in Action: Tier-Two Supplier

A supplier to the industrial equipment industry now leverages data within the organization to generate powerful reports and dashboards that visualize complex information.

At one time, engineering, production, quality and accounting used stand-alone solutions to track business activity. The systems were not integrated with each other, which made tracking, retrieving, and communicating critical data difficult and time-consuming.

Today, a standard cloud ERP system provides easier access to real-time information.



The entire company, from shop floor managers to the accounting office, can view real-time information to better calculate costs and production metrics.

Real-time visibility includes metrics showcasing the quantity of parts produced; production time for each part; time for total production; quality of the produced parts; number of parts with issues; time spent by the operator; the associated cost, and more.

Data integration allows the supplier to access different views, in real time, tailored to roles within an organization.

This improved visibility lets the company shorten the time to make decisions, which is particularly valuable in today's volatile business environment.

In Depth, Not Complex

Using IntelliPlex, manufacturers easily custom-build their own reports without the need for SQL development or database programming. Easy "self-service" features let users access Plex Manufacturing Cloud data sources by building reports, charts, and graphs.

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About Plex

Plex is the Manufacturing Cloud, delivering industry-leading ERP and manufacturing automation to more than 400 companies across process and discrete industries. Plex pioneered Cloud solutions for the shop floor, connecting suppliers, machines, people, systems and customers with capabilities that are easy to configure, deliver continuous innovation and reduce IT costs. With insight that starts on the production line, Plex helps companies see and understand every aspect of their business ecosystems, enabling them to lead in an ever-changing market.