Using Manufacturing Intelligence to Drive Profitability, Quality, and Cost Containment

While factory floor automation has significantly improved all areas of processing for manufacturing companies, it has also generated a staggering amount of data. While IT departments have taken advantage of hardware improvements to economically store the increased data volumes, manufacturers often lack the ability to convert this data into actionable information, resulting in a distressing "fact gap". This creates obstacles for managers seeking reductions in lead-time, improvements in product quality, and meaningful production cost savings.

Optimizing manufacturing processes and identifying inefficiencies requires a comprehensive understanding of how products and customers consume resources, including an integrated, data-driven view of the manufacturing supply chain, support functions, and infrastructure. Increasingly, this need is met by manufacturing intelligence (MI) software that allows managers to perform sophisticated cost and profitability analysis and gain unprecedented visibility into their manufacturing processes.

To remain competitive in the global marketplace, manufacturers must:

1 Reduce operating costs

2 Maximize the profitability of their product portfolio

3 Ensure consistent product quality and on-time delivery

Let's take a look at how best in class manufacturers use MI to meet these three primary objectives and discuss the required functionality of MI software platforms.

REDUCE OPERATING COSTS

By providing an integrated data view of the supply chain, factory capacity, and operator shift schedules, MI helps minimize factory downtime. Manufacturers must be certain that raw material vendors can guarantee the availability and on-time arrival of their materials and that the proper machine/operator pairing is available during scheduled production runs. MI provides the necessary data detail and history to help manufacturers identify process inefficiencies on a number of fronts:

- Raw material prices that historically fluctuate on a seasonal basis can indicate which months of the year input costs will be highest for a particular product.
- Scheduled maintenance that fails to take product demand and raw material availability into account can result in unprofitable downtime.
- Drilling down into shift, machine, and operator level detail can identify time-intensive manufacturing steps that could be alleviated by additional operator training or by substituting pre-manufactured components.

MAXIMIZING PRODUCT PORTFOLIO PROFITABILITY

Manufacturers confront tradeoffs between resource utilization and revenue realization on a daily basis. An MI platform provides the analytical functionality required to confidently make Available-to-Promise (ATP) and Profitable-to-Promise (PTP) decisions based on accurate, real time data. ATP is a type of sophisticated "what-if" analysis that allows manufacturers to determine whether needed raw materials, factory capacity, and workers are available to manufacture and deliver products by the customer-specified deadline. PTP extends this analysis to determine which customer orders are profitable (or not) and whether additional costs such as expedited shipping or overtime pay to meet order deadlines are justified.

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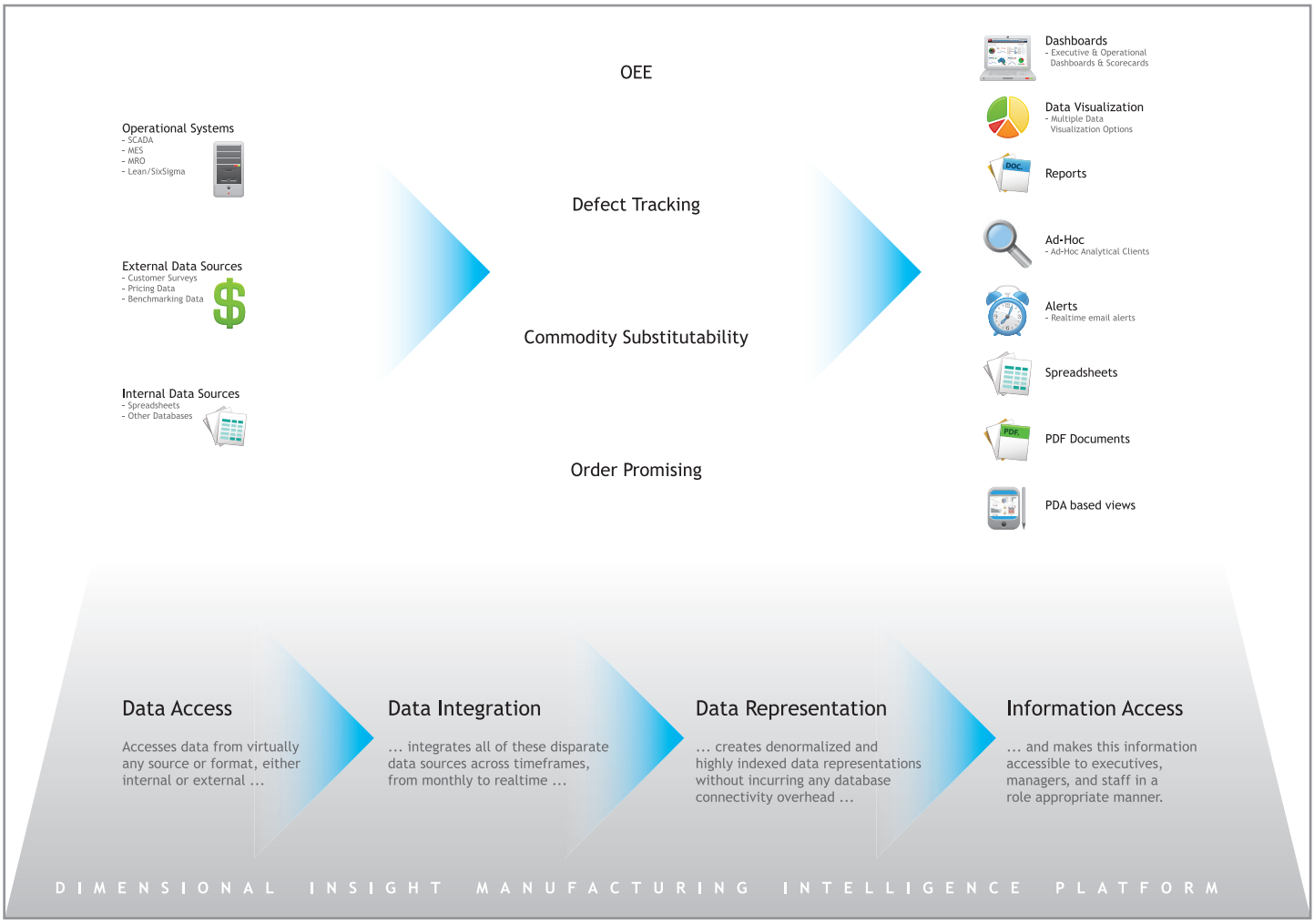
DATA → INSIGHT → ACTION



ENSURE CONSISTENT PRODUCT QUALITY AND ON-TIME DELIVERY

The statistical control charts found in MI platforms alert machine operators and engineers to deviations from expected process behavior and trends in defect ratios. Ad hoc analytical capabilities help answer questions such as which shift, machine, operator, or raw material source correlate with increased defect rates or deviations. MI also facilitates root cause analysis by providing the ability to quickly drill down to detail level data from higher level summary views.

MI platforms offer demand-planning modules that help manufacturers plan production schedules based on seasonal, cyclical, or other customer demand profiles. MI utilizes calendar-based data views to provide an intuitive visualization of production schedules. By aligning anticipated demand with production and transportation capacity, on-time product delivery becomes a reality.

ABOUT DIMENSIONAL INSIGHT

Dimensional Insight (DI) is a global provider of integrated business intelligence and performance management solutions that empower manufacturers, shippers, healthcare providers, and food & beverage producers with data-driven decision making capabilities. The Diver Solution™, DI's end-to-end software platform, delivers performance dashboards, self-service reporting, advanced data visualization, ad hoc analytics, and data integration capabilities to more than 2,600 customers and thousands of users worldwide. DI's customers have used The Diver Solution to attain best-in-class performance within their respective industry sectors, by generating double-digit efficiency gains, and reducing waste by a corresponding percentage.

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