COO Executive Briefing

Delivering Value for Retailers and CPGs in Manufacturing

Good, Fast and Cheap

There's an old saying in project management that has also traditionally been applied to manufacturing: "Good, fast, and cheap—pick two." It neatly sums up the challenge that most retail and consumer packaged goods (CPG) companies are facing, especially in an age of unprecedented changes in consumer behavior, intensified pressure on margins, the changing role of stores, and a radically changed competitive landscape for both online and offline channels.

How can these factors transform the manufacturing process to ensure they provide everything that is required and desired—good, high-quality, and safe products that are fast to market, meet the demands of the consumer, and do so in a cost-efficient manner that's competitive and provides consumer value? Or, in other words, how can they deliver the ongoing cost-saving benefits of improving both operational efficiency and fixed asset utilization?

Investing in the Smart Factory

The retail and CPG industry has been at the forefront of successive waves of transformation in manufacturing, from the introduction of the assembly line to using global supply chains to the introduction of robotics. Now, the industry is investing in the next big change— the Smart Factory. This phase will be characterized by connectivity, flexibility, and production process steps that produce and utilize data at a massive scale.

A core component of Industry 4.0, the Smart Factory promises significant productivity increases. However, simply connecting a factory to the cloud and collecting data does not make it a Smart Factory. Instead, creating a multi-purpose data and analytics foundation is a necessity to increase the net value delivered by Smart Factory projects.

Most initial "Smart Factory" projects are, in truth, delivered by small islands of data and analytics— delivering pockets of excellence. Managing these solutions in the cloud delivers significant cost and deployment advantages over on-premises solutions. Yet without a strategy to build an integrated set of data to support all Smart Factory initiatives, the individual project approach will quickly lead to unforeseen, and unmanageable, costs—undermining all the benefits delivered on the shop floor.

New Challenges Coupled with High Expectations

An industry that prides itself on delivering exceptionally high-quality products with extreme efficiency is now realizing that it must dynamically disrupt itself to meet the rapidly evolving demands of customers. The efficiency of a mass-market production line must be transformed to deliver mass-customization of products, without adding back the costs or inefficiencies that were so effectively squeezed out over decades of progress. Flexible manufacturing principles, driven by Smart Factory capabilities, are a core part of the answer.

The danger is that running individual, isolated Smart Factory projects, will not deliver the step change in anticipated productivity. These projects are neither repeatable nor shareable, and quickly incur costs that significantly outweigh the benefits, due to data and analytics management overheads.

Because machine data is a common requirement for quality, production, and maintenance analytics, the same data can be used to implement additional solutions—driving further value from mostly the same data set.

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To combat rising costs, analytics need to be industrialized too. This challenge has been recognized by manufacturers as an industry-wide issue, and many industry leaders have formed an alliance—The Open Manufacturing Platform—to directly address the common challenge of enabling smart manufacturing at scale.

A Digital Thread for Each Product

What's needed is a connected data foundation. Data that represents every process step for each individual product can, and should, be linked in the digital realm to create a digital thread for each product. A digital thread of data is essential to understand the interactions between, as well as within, every production step in the factory.

When used correctly, a digital thread can detect the impact of all changes in the production process. In turn, this allows for the global optimization required for mass customization. The digital thread provides the traceability from source, through production and out to the consumer, that modern retail and CPG companies are looking for. While at the same time, the digital thread provides the insights required to improve sustainability metrics through the entire process.

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Connect and Reuse Data

Connected data enables reusable, shareable, and portable analytic solutions to be created for enterprise or even ecosystem-wide "stores." Each project team collects and prepares the data to build analytic models to address specific improvement opportunities. This data is "published", and therefore can be easily reused—in part or completely—across the enterprise or ecosystem.

Because machine data is a common requirement for quality, production, and maintenance analytics, the same data can be used to implement additional solutions—driving further value from mostly the same data sets. This is the premise, for example, of Volkswagen's Industrial Cloud, on which Teradata is a proud partner.

Reduce the Total Cost Base

Factories are cost centers and must always do more with less. Just as shared packaging designs have transformed the cost base and efficiencies of leading retail and CPG producers in the past decades, so can integrated data platforms manage costs in the connected factory.

All data sets bear a maintenance cost, as do the analytic routines that ensure data quality does not drift, allowing analytics to keep pace with the business. Artificial intelligence (AI) and machine learning (ML) algorithms need regular retraining with large data sets—further adding to the cost of utilizing this technology to improve manufacturing outcomes.

Manufacturers looking to drive increased productivity and flexibility, while simultaneously lowering total production costs, must therefore carefully consider what integrated data platform to use to support these efforts. Without an integrated platform that feeds shared analytical models and processes, retailers and CPGs may find themselves simply transferring costs from the shop floor to the data center, instead of achieving the full value of productivity improvements through their analytical solutions.

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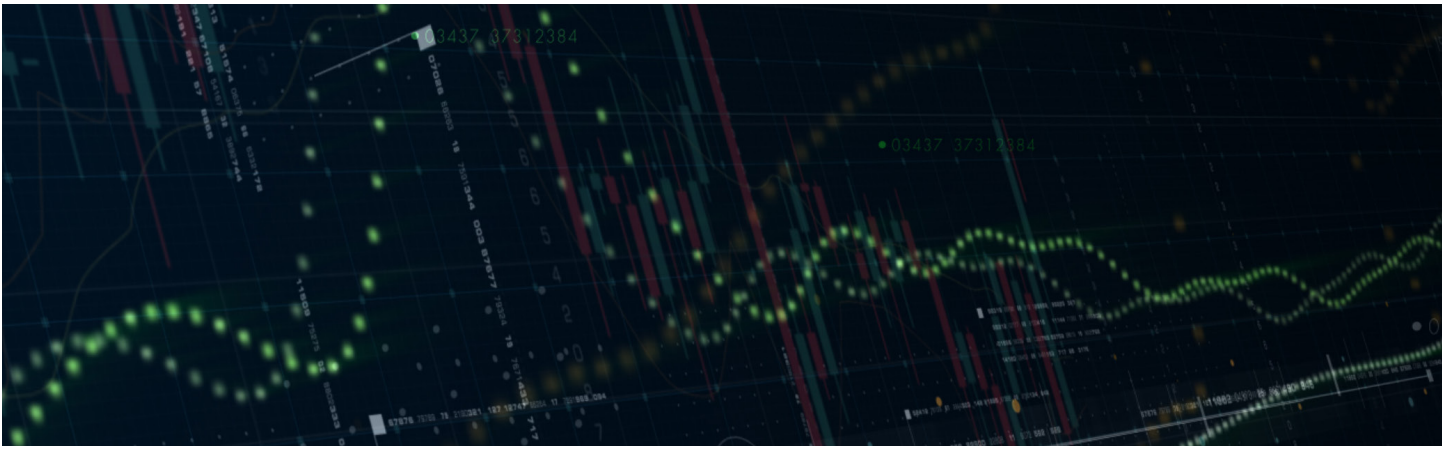
Furthermore, due to the sheer volume of data and analytical routines involved in implementing the Smart Factory at scale, analytic and data management costs can ramp up quickly. For example, duplicating data sets and their accompanying analytical routines unnecessarily increases the overall costs of Smart Factory deployments.

Teradata Vantage® offers proven analytic scalability, which combined with Teradata's expertise in data ops and analytics ops, is an ideal foundation for a truly smart factory. The same code base is directly transferable whether Teradata instances are on-premises, in a hybrid environment, or across any of the leading cloud service providers—ensuring longevity and reusability even if the analytic hosting platform strategy varies between countries or factories.

Teradata can enable Smart Factory capabilities that reinforce the retail and CPG industry's leadership in manufacturing, enabling highly efficient, mass produced, mass customized, and high-quality productsfor years to come.

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About Teradata

Teradata is the connected multi-cloud data platform company. Our enterprise analytics solve business challenges from start to scale. Only Teradata gives you the flexibility to handle the massive and mixed data workloads of the future, today. The Teradata Vantage architecture is cloud native, delivered as-a-service, and built on an open ecosystem. These design features make Vantage the ideal platform to optimize price performance in a multi–cloud environment. Learn more at **Teradata.com**.

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