



# COLGATE-PALMOLIVE COMPANY

## Driving Change through Measuring the Digital Supply Chain

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*Interview conducted on June 13, 2017*

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Interviewee:

**Andres Bejarano**

Director, factory performance and reliability, global supply chain  
Colgate-Palmolive Company

In conjunction with the Center for Global Enterprise, APQC is examining how best-practice organizations measure supply chain performance in the midst of the digital transformation. This case study examines how Colgate-Palmolive is leveraging automation and analytics to achieve profitable growth and operational excellence.

# COLGATE-PALMOLIVE COMPANY

New York City–based Colgate-Palmolive produces and distributes household, health care, pet nutrition, and personal products such as soaps, cleaners, and toothpaste. In addition to its namesakes, brands include Speedstick, Tom’s of Maine, Murphy Oil Soap, AJAX, Fabuloso, and Softsoap. With 38,000 employees, the global consumer products company reported \$15.2 billion in revenue in 2016.

APQC interviewed Andres Bejarano, the Director of Factory Performance and Reliability for Colgate-Palmolive’s global supply chain. He oversees the Lean management of the supply chain and works with the Director of Supply Chain Systems on continuous improvement and Smart Manufacturing. Bejarano shared how the organization is leveraging automation and analytics to achieve profitable growth and operational excellence.

## GLOBAL SUPPLY CHAIN ORGANIZATION

Colgate-Palmolive manages a Global Supply Chain with 45 manufacturing sites around the world.

Prior to 2006, the supply chain was organized regionally according to a variety of manufacturing continuous improvement systems. Following the global re-alignment of the supply chain by category, all plants adhered to a common corporate Factory Performance and Reliability (FP&R) playbook which consists of eight standards: management systems, 5S and visual workplace, plant maintenance, autonomous maintenance, productivity and continuous improvement (CI), production planning, people capabilities, and a standard daily meeting. The organization has consistent performance expectations and guidelines for each standard. These global standards gauge performance against numerous benchmarks in areas ranging from asset utilization (primary performance indicator), to cycle time to material losses. Each site performs a self-assessment of its compliance with these standards, which is then followed up by a global audit performed by a team from different locations.

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—Andres Bejarano

The Factory Performance and Reliability program is also a vehicle to bring new initiatives and capabilities to the factories such as Smart Manufacturing as part of Colgate-Palmolive’s continuous improvement efforts. “We’re always looking **to work smarter and faster**, every day, in everything we do,” said Bejarano. “From that point of view, we’re looking to understand new disruptive technologies and incorporate them into our processes to take our performance to the next level.” Continuous improvement is one of three core corporate values, in addition to caring and global teamwork.

## DIGITIZATION PLANS

Colgate-Palmolive has started to transform its supply chain operations with Smart Manufacturing. Smart Manufacturing supports the 2020 strategy in which the organization plans to design more agile supply chains, improve end-to-end planning and execution, and make greater use of analytics to address complex problems and further achieve operational excellence. “Our aim is to be an even more customer- and consumer-focused supply chain that drives sustainable, profitable growth,” Bejarano said. “All the new technologies and analytics will help us get there.”

The supply chain’s analytics vision was the first step in its digital strategy, set in 2015. Colgate-Palmolive is implementing analytics to enable employees to make decisions that best balance cost, service, and inventory— three key performance indicators (KPIs) of operational excellence. Using analytics, supply chain leaders are better able to surface and manage tradeoffs.

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—Andres Bejarano

And in terms of automation, Colgate-Palmolive is continuing to update its entire manufacturing process. Already widespread adopters of Industrial robots, Colgate is expanding to collaborative robots and automated guided vehicle (AGVs), as part of the transformation. Some processes are already fully automated, with one person overseeing multiple factory floors or lines via manufacturing execution systems (MES). In fact, automation fuels two of the three supply chain mandates for 2017: improve automation and integration and leverage the power of analytics in decision making. “The idea is to automate everything that can be automated in the manufacturing process and supply chain operations,” said Bejarano. All of these initiatives have people implications which we are addressing with new shop floor learning and development processes to provide our workforce with the skills required to fully utilize and leverage these technologies.

## TRADITIONAL SUPPLY CHAIN MEASURES

In gauging progress toward its supply chain goals for profitable growth and operational excellence, Colgate-Palmolive has a detailed approach to each of its three KPIs: cost, service, and inventory. For costs, the supply chain function currently tracks conversion costs and key supporting productivity metrics are asset utilization and unplanned downtime. For service, the company tracks casefill rates, and for operational inventory, the function tracks the days of coverage on a 13-month average, which reveals long-term trends. There are several other KPIs supporting the major metrics, such as the number of stock keeping units (SKUs) sold and the number of finished formulas and packaging types to inform the overall picture of how much complexity the supply chain faces.

The supply chain function reports these indicators—along with cross-functional indicators such as safety records, financial metrics, and demand and supply KPIs— to senior leaders and the CEO using a monthly scorecard.

## MANAGING DIGITAL SUPPLY CHAIN PERFORMANCE

As of mid-2017, Colgate-Palmolive has made significant progress on integrating, automating, and digitizing its global supply chain operations. For manufacturing processes, the organization has deployed controls systems such as Wonderware Inbatch, InTouch, and Historian. For packaging processes, a new MES system will be deployed by the end of 2018 to connect all packaging lines and compile performance data. Factories are starting to use sensors to predict failures, collaborative robots for material handling, auto palletizers, hand-held wireless devices for material flow, as well as radio frequency identification (RFID) to track pallets and inventory. Some factories have video feeds and cameras for remote operator support.

The organization is also piloting 3D printing for spare parts and wearables such as smart glasses for remote technical support, maturity assessments, and inspections.

All the data from these systems are coming together to an SAP HANA® database to enable deep analysis and decision making. This analytics infrastructure is already supporting factories in KPI analysis and problem solving, from managers and continuous improvement engineers to shop floor technicians and operators. For these employees, the analytics enable notifications and the reporting of factory issues to Six Sigma/continuous improvement experts; the system even tracks how many notifications are converted into work orders and subsequently resolved.

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—Andres Bejarano

The systems and technology are supported by a robust network for reliable connectivity and cyber-secured environment.

As Colgate-Palmolive's supply chain function moves forward with its automation and analytics efforts, Bejarano does not anticipate its KPIs changing. He does expect the digitization of the supply chain to enable the function to dig deeper into its KPIs, correlations, and root cause analysis to deliver superior performance.

## EVALUATING THE IMPACT AND CONTINUOUS IMPROVEMENT

From its digitization efforts, Colgate-Palmolive has already experienced improved alignment and visibility in its global supply chain operations. Since initiating its global standardization efforts in 2006, the organization has been able to reduce costs, increase operational excellence, and foster a data-driven culture. It has quantified this progress in terms such as significantly improved asset utilization. "Since launch, the factory performance and reliability program has helped improve 10 points on our asset utilization," said Bejarano, "delivering significant savings due to productivity improvement. The new Smart Manufacturing technologies are going to help us accelerate that pace."

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As the supply chain continues to roll out systems at its sites, it will track employee adoption and engagement and present changes in a transparent manner in order to accelerate progress on building growth and operational excellence.

Colgate-Palmolive's focus is currently on taking full advantage of the systems it is implementing by preparing its workforce and building capabilities. Along with the technology, the organization must ensure it is developing its current employees and hiring the right talent to fully leverage automation and analytics. With this work, the organization anticipates increasing the pace of implementation and adoption from piloting to launch.

The focus so far has been to build a solid foundation so that the organization can respond quickly to new opportunities. Over the next few years, Colgate-Palmolive will deploy the technologies being piloted at several sites. According to Bejarano, "We have to be very agile to be able to incorporate new technologies as they come along. People and organization readiness is paramount to adopt and leverage these technologies."

## ABOUT APQC

APQC helps organizations work smarter, faster, and with greater confidence. It is the world's foremost authority in benchmarking, best practices, process and performance improvement, and knowledge management. APQC's unique structure as a member-based nonprofit makes it a differentiator in the marketplace. APQC partners with more than 500-member organizations worldwide in all industries. With more than 40 years of experience, APQC remains the world's leader in transforming organizations. Visit us at [www.apqc.org](http://www.apqc.org), and learn how you can make best practices your practices.

## ABOUT CGE

The Center for Global Enterprise (CGE) is a nonprofit, nonpartisan research institution devoted to the study of the contemporary corporation, globalization, economic trends, and their impact on society. CGE's [Digital Supply Chain Institute](#) (DSCI) is a leading-edge research Institute focused on the evolution of enterprise supply chains in the digital economy and the creation and practical application of supply chain management best practices.