

order into a pick ticket, a packing list, and an invoice. If products are sourced from other suppliers, the original customer purchase order is turned into a purchase order from the first supplier to the next supplier. That supplier in turn will either fill the order from its inventory or source products from other suppliers. The purchase order it receives is again turned into documents such as pick tickets, packing lists, and invoices. This process is repeated through the length of the supply chain.



IN THE REAL WORLD

OfficeMax (now merged with Office Depot) (<https://www.officedepot.com/>) sells office supplies, office furniture, and office technology through a network of hundreds of stores. In a tough economy calling for improved supply chain operations, OfficeMax found that increased collaboration between different internal groups delivered significant benefits. Reuben Slone then Executive Vice President of Supply Chain, and Nikhil Sagar then Vice President of Inventory Management, describe how these improvements were achieved.

While OfficeMax was in the midst of executing a major turnaround plan, the onset of the Great Recession set a much greater hurdle, calling for it to overcome the effects of rapidly shrinking sales and volatile fuel costs. More than ever, OfficeMax had to deliver greatly improved working capital productivity and cost productivity levels while maintaining the customer experience through strong product availability. The case for internal collaboration was never stronger.

This was also the time that an economic value added (EVA) mindset was being developed within the company. EVA training was widely rolled out with the help of the University of Notre Dame, and caused a much greater focus on asset and working capital management.

Reuben Slone, Executive Vice President of Supply Chain, called his team together and communicated his vision for the transformation needed to overcome the new economic challenge. The Supply Chain team had already established a powerful track record

(Continued)

IN THE REAL WORLD (CONTINUED)

of delivering strong results against the turnaround plan, but the challenge at hand now called for the team to reach new and higher levels of performance, and develop and implement strategies that made conscious trade-offs between supply chain operational costs and working capital productivity. The Supply Chain Operations and Inventory Management groups were asked to challenge each other's assumptions. This was not going to be easy—there was a lot of high-performing talent in both groups. These were people who now had to work together on the same team.

Guidelines for the internal collaboration were established. All parties on the project were declared equal, no existing practices were considered sacred, and all parties were encouraged to question everything. The project group would make fact-based decisions, not emotional reactions, and the EVA model would be used as an empirical framework for decision making. The team was given a clear set of priorities—product availability, working capital productivity, and cost productivity. And finally, business goals were revised to reflect a broad set of shared supply chain outcomes.

Interpersonal relationships were focused on open discussions between the Supply Chain Operations and Inventory Management teams to discuss past problems (perceived or real) and close collaboration was strongly encouraged between the two teams. For example, a territorial mindset would no longer be tolerated and a good idea would be a good idea regardless of which team it came from. A low-cost team-building event was held to help lay the foundation for this new collaborative working model.

These guidelines and the resulting collaboration delivered a highly effective solution to the challenge. The team improved the use of delivery truck storage volume (known as cube utilization) through modification of limitations on stops per truck. They established the optimal number of deliveries for all stores based on the EVA model. By comparing delivery costs with working capital, the EVA model

IN THE REAL WORLD (CONTINUED)

offers a very relevant framework for making supply chain trade-offs between operating cost and working capital.

The model's strength lies in its ability to compare the impact of decisions on post-tax net operating profit with the opportunity cost of working capital invested to implement that decision. In the delivery example, the team estimated the working capital impact of progressively increasing delivery frequencies to a store. This was done across clusters of stores grouped together based on similar sales-velocity levels. The EVA model was then used to identify the inflection point for each store velocity group—essentially the point at which the trade-off was EVA positive—and this was used as the ideal delivery investment for that store group.

Clearly, higher-velocity stores deserved higher delivery frequencies, because they had the potential to sell more inventory. This model, however, allowed people to make the intuitive decision more of an exact science, allowing them to save valuable delivery-cost dollars without hurting service levels and minimizing the working capital impact. The functional teams worked together to allocate delivery frequencies down to the individual store level. In addition to looking at quarterly store rankings based on sales, they also incorporated unique location level constraints (such as isolated, single-store deliveries with higher cost per delivery) through collaborative review with the Transportation team.

The team modified delivery spacing to maximize productivity of deliveries through more even balancing of the point-of-sale (POS) capture between multiple deliveries. This ensured that for a two-delivery-per-week store, each replenishment run should target three or four days of sales. For a three-delivery-per-week store, each replenishment run should have two or three days of sales.

They next moved the creation of replenishment delivery schedules from evening to morning. When the deliveries were being created in the evenings, the POS captures for the current day were

(Continued)

IN THE REAL WORLD (CONTINUED)

not completed yet, so the delivery plan was based on the POS movement up to the previous day only. By moving the delivery-creation process to the following morning, an additional day's worth of POS movement was captured, reducing the latency of the plan, without increasing the overall lead time since the execution against the delivery plan was still allowed to commence at its normal time every morning.

The team also created Opportunistic Delivery Skipping—by introducing a check into the delivery schedule-creation process to eliminate extremely low cube loads. The inventory management group developed and executed the criteria for this check. They used criteria such as store-in-stocks measured as a percent of SKUs within a store that had one or more units on hand, ensuring at least one delivery a week and avoiding two consecutive skips.

The team then implemented palletization of loads—enabling easier loading and offloading and allowing for reduced handling costs at distribution center (DC) and store level. The quicker receipt process at store level also enabled greater store flexibility around receipt planning, weekend deliveries and a broader receipt window being a couple of the favorable outcomes.

Next the group worked with OfficeMax's third-party transportation carrier, Werner, to migrate from a graduated stop charge to a flat stop charge. And finally, they shifted the delivery-truck trailer-storage capacity target from 1,800 cubic feet to 2,500 cubic feet.

All of this work resulted in breakthrough results. The total number of miles driven to retail stores was reduced by 24 percent, or 6.9 million miles, from 2007 to 2009. Store inventory shrunk by 16 percent year-over-year while maintaining a record low number of stock-outs per store. OfficeMax proved that internal collaboration enabled unprecedented supply chain improvements despite the extraordinary challenges of the Great Recession.

IN THE REAL WORLD (CONTINUED)

Reuben Slone is Senior Vice President, Supply Chain and Logistics at Walgreens and Board Member, Advance Auto Parts. He is a recognized supply chain authority, and his specialties are product development, manufacturing, supply chain, strategic sourcing, store development and information technology. He was formerly SVP of supply chains at Office Max. Achievements include successful turn-arounds and business growth in industries such as automotive, consumer goods and retail. He is co-author of *The New Supply Chain Agenda: The 5 Steps that Drive Real Value* (Harvard Business Press, 2010).

Nikhil Sagar is Vice President and General Manager, Goods at Groupon. His expertise is in supply chains and inventory management. He has led teams in turnaround and start up environments, and built processes and systems from scratch. He is experienced in marketplace development in the national and local commerce space. Previously he was VP Inventory Management at OfficeMax and Sears Holding Corporation. He is the author of the article "CPFR at Whirlpool Corporation: Two Heads and an Exception Engine" (*Journal of Business Forecasting*, Winter 2003–2004).

Supply chains are becoming noticeably more complex than they previously were. Companies now deal with multiple tiers of suppliers, outsourced service providers, and distribution-channel partners. This complexity has evolved in response to changes in the way products are sold, increased customer service expectations, and the need to respond quickly to new market demands.

The traditional order-management process has longer lead and lag times built into it due to the slow movement of data back and forth in the supply chain. This slow movement of data works well enough in some simple supply chains, but in complex supply chains faster and