The route to no-touch planning:
Taking the human error out of supply-chain planning

Slow, manual supply-chain planning processes can be a thing of the past, with machines taking on repetitive tasks that aren't a good use of human capacity.

Ignacio Felix, Christoph Kuntze, Ildefonso Silva, and Eduardo Tobias Benoliel

Supply-chain planning keeps getting harder and more time-consuming, with the consumer goods sector as one of the most extreme examples. The causes are familiar: Online retailing's endless shelf encourages consumers to be ever more demanding, yielding product portfolios that are ever more complex and lifecycles that are ever shorter. Retailers continue to increase their service and delivery requirements, with stiff financial penalties for non-compliance. On the flip side, more and more real-time data are becoming available, with automation technology rapidly getting cheaper, more capable, and easier to implement—raising the competitive bar for the entire sector.

Traditional planning processes and tools weren't designed either to take advantage of technology's advances or to address the demands it creates. By and large, planning still relies heavily on labor-intensive data aggregation and cleaning, manual analysis, and personal judgment. Worse, with more customer and consumer demand signals now available instantaneously, planners often feel compelled to keep tweaking their plans, despite the weaknesses of existing planning systems and processes. Well-intentioned adjustments end up creating more problems than they solve, introducing even more errors and subconscious bias that can increase costs and exacerbate service disruptions.

The time has come for a new approach. Led by pioneering players in high tech and online retail, the digitization of planning promises unprecedented levels of responsiveness, agility, and speed. At one advanced-industry player, for example, an automated inventory-planning system now automatically integrates and analyzes data from more than a dozen different data sources. The ensuing reduction in inventory levels allowed the company to release more than $75 million in free cash flow. At a high-tech company, automating 95 percent of the order-to-ship process (from order receipt through to transportation to the outbound shipping hub) reduced end-to-end processing time by 60 percent, reducing variability and making planning more consistent. And a major food and beverage player has piloted predictive analytics to double the accuracy of its weekly demand forecasts at the retail outlet level.

In this digital environment, monthly or weekly planning cycles—driven not by the needs of the business but by the capacity of planning teams—become a thing of the past. Instead, no-touch, fully automated planning enables a continuous, seamless closed-loop cycle of planning and re-planning, increasing accuracy and efficiency both for the company and its customers.

What it will take

For automated planning to work, however, machines will need to perform planning tasks at least as well as a human: If they don't, loss of trust or the need for time-intensive human supervision will defeat the purpose of the exercise. For companies, this makes activity mapping and segmentation crucial, so they can differentiate between activities that can be fully automated and those that still require some level of manual intervention.

Maximize today's technologies, and tomorrow's.
Some activities, such as the development of short-term demand forecasts for base stock-keeping units (SKUs), can already be done completely automatically. The automation of other tasks, such as mid- to long-term sales and operations planning (S&OP) or supply- and demand-risk management, still requires development and experimentation. In some cases, the required technologies or data resources are not yet available, or are still too expensive or complex to apply economically.

Build the right foundation.
To fill these technology gaps, companies will need the ability to experiment with innovative processes and new solutions without disrupting

their day-to-day operations. That calls for a two-speed IT architecture, building a fast "test-and-learn" environment (suitable for rapid prototyping and iterative development) on top of the company's current technology base. An agile development methodology with weekly (or even daily) releases allows new approaches to be developed rapidly. Once new solutions are refined and proven, they can be migrated to the traditional architecture with a focus on repeatable and reliable service delivery.

Automation is only part of the story.
To capture the full potential of no-touch supply-chain planning, companies will also need to invest in advanced analytics, machine-learning technologies, and process redesign, while also adapting their organizational structures. Technology may produce many "fractional FTE" savings, for example, as some parts of existing roles are automated or eliminated. Turning those improvements into real cash savings or re-investments will require a meaningful degree of role redesign.

The journey toward automation needs a governing infrastructure that develops the right talent and change- and performance-management practices. A proven approach relies on a digital-planning center of excellence (CoE), whose function can range from shaping the overall vision and direction to providing tactical program- and performance-management assistance, such as through leadership capability-building and vendor selection guidance. The CoE also provides critical support for cross-functional collaboration, bringing disparate experts together and aligning their work to the company's digital strategy.

How to get there
A global consumer-packaged-goods (CPG) player demonstrates the pattern followed by many companies that have successfully digitized their planning processes:

Set the course.
The company's leaders started by establishing a bold aspiration that went beyond automation to encompass digitization and analytics. Crucially, senior executives also drafted a multi-year road map for reaching the goal, making the ambition far more tangible to the entire organization.

Let the machine do the job.
Reexamining business rules, systems, and tools throughout the company revealed the simple, repeatable processes that were most amenable to digitization. In some cases, existing enterprise resource planning (ERP) systems were enough to automate the relevant tasks, others relied on basic robotic-process-automation (RPA) software. Ultimately, more than 90 percent of planning tasks were automated, dramatically reducing the number of manual interventions required while providing decision support tools at the planner's fingertips.

Infuse advanced analytics.
Identifying the biggest pain points in the company's supply-chain planning uncovered major opportunities for advanced analytics. After collecting all available data—no small task, but one made increasingly feasible by new technologies—the company was then able to apply machine-learning algorithms to improve the accuracy and granularity of its inventory-management, production-scheduling, and demand-planning processes.

Think beyond S&OP and integrated business planning.
As the new model is fully implemented, reporting will happen on a continuous basis, eliminating the need for monthly and weekly planning cycles and enabling faster, leaner, and better decision making.

Hardwire the process into the business.
To make the entire structure self-sustaining, the company revamped its governance structure, basing

it on an aligned and clearly defined set of truly cross-functional performance indicators (and incentives) for all operations, commercial, and finance functions.

This type of low or no-touch planning process can dramatically increase service levels, while reducing supply-chain costs and inventories to levels that most CPG players can only dream of today. And it's available now, not years in the future. ∎

Ignacio Felix is a partner in McKinsey's Miami office, where **Christoph Kuntze** is an associate partner and **Eduardo Tobias Benoliel** is a consultant; **Ildefonso Silva** is a partner in the Chicago office.