Deloitte.

THE RIPPLE EFFECT

Stories of purpose and lasting impact

Want to transform a business? Start by changing minds.

Could a team get the smartest people in the room at a semiconductor company to shift paradigms? And could that unlock company strategy? (Yes!)

METICULOUS SUPPLY CHAIN PROCESSES COULDN'T KEEP UP WITH A NEWLY AGILE INDUSTRY.

THE SITUATION

Henry Ford brought a lot of innovations to the business world, including the concept behind his Model T factory, where pre-manufactured, interchangeable parts were assembled to create a car.

Pre-building things in smaller sections like this (aka modular manufacturing) allowed for greater efficiency and flexibility than before—a method especially embraced decades later by PC companies. By then, modular design principles had people customizing their new computers with different, swappable components—a practice that continues today.

Only today, electronics companies often face new and complex global supply chain challenges. So, to stay competitive, they need to adopt even more sophisticated supply chain strategies and technologies than before.

One such company is a semiconductor company. It faces a particularly wicked challenge in that it's subject to Moore's law—an observation that the number of transistors on a microchip doubles about every two years (with knock-on benefits).

Moore's law, while great for consumers, can be tough for chipmakers. It prompts an ever-increasing variety of chip designs. So if demand is to be met on time, these manufacturers need quick visibility into risks across a complicated supply network.

This chipmaker was preparing to launch production on an especially sophisticated new product, but there was a problem: An internal review found critical risks to the process in three areas.

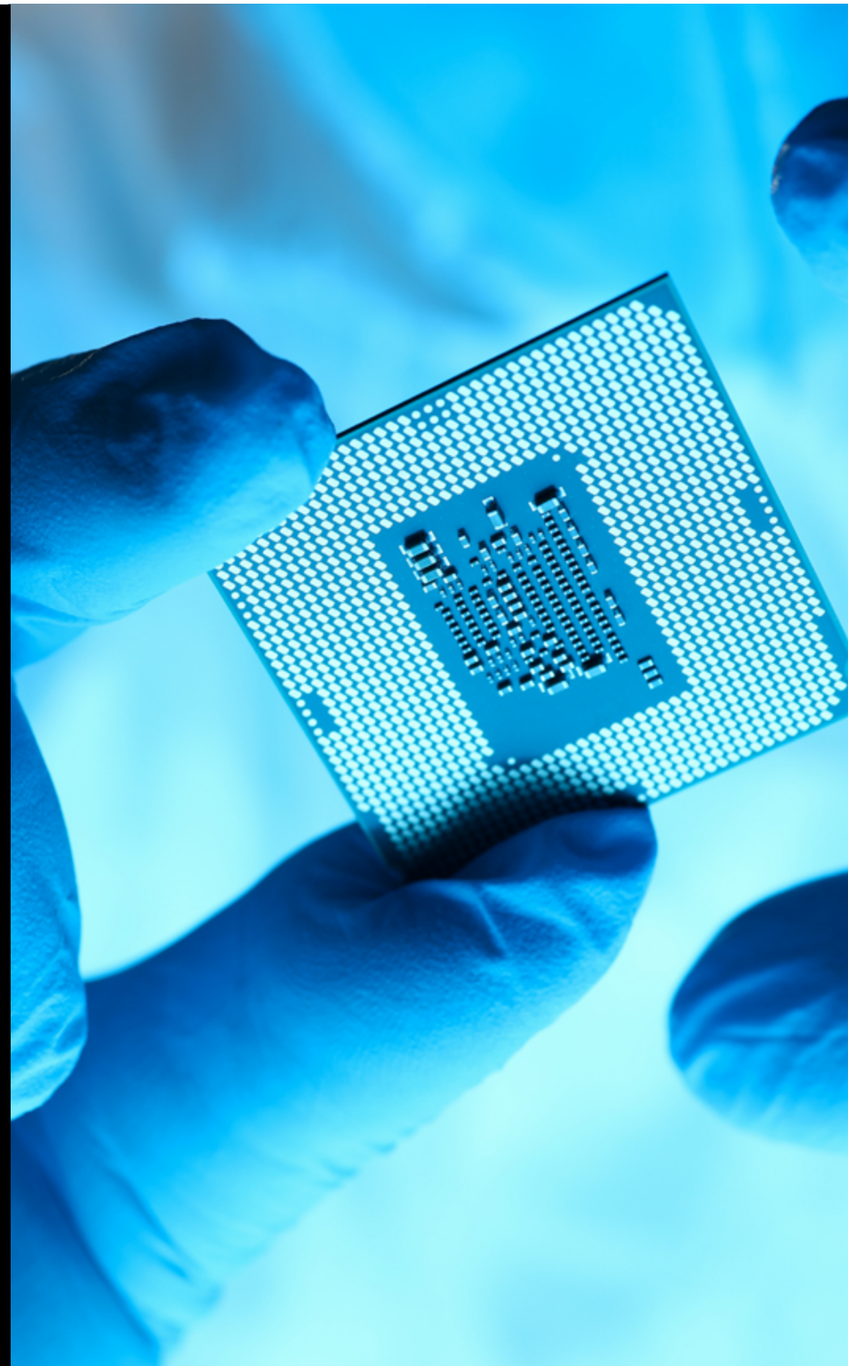
First, company supply chain planners (the people who matched manufacturing supply to demand, and generally handled variances) were managing supply and demand changes in an outmoded way: In an era of real-time data, they checking status—*monthly*. Unsurprisingly, monthly reviews meant (manual) adjustments within cycle, and then even more (manual) adjustments to account for changes *between* cycles.

Next, if there was a problem with fulfillment (like getting certain components) planners would have trouble figuring out why. Could it be capacity bottlenecks? Material delays? Something else? This lack of insight might persist even after weeks of (again, manual) analysis.

Finally, the company operations research team (the people who built the supply and demand models the planners worked with) had spent decades perfecting algorithms to address individual, discrete, and bespoke processes within the manufacturing process—with custom technology to support them. This optimization approach, while meticulous (and an early competitive advantage), hadn't evolved with an industry that had shifted to a faster, agile heuristic approach. Instead, the operations research team still used a sequential handoff process that couldn't scale and caused longer cycle times than the competition. Maybe most importantly: Workers' comfort with the optimization approach was preventing the company from adopting modern supply chain planning practices and technology.

Together, these challenges were affecting daily operations, increasing employee workload...and now, potentially jeopardizing the new product launch.

Company leaders called Deloitte—specifically professionals within its Supply Chain and Network Operations and Semiconductor groups. This would be a rare instance of the company revisiting its supply planning processes, with the potential to transform the organization all the way through to its business strategies overall.



THE SOLVE

In a way, the Deloitte team's approach to the engagement would be straightforward: Address the people, processes, and technology involved in the company's supply planning, with a near-term goal of implementing not a monthly, but a *responsive* demand-to-supply match (RDSM).

The approach wasn't without its risks. A first attempt at a supply planning overhaul would necessarily come with a lot of unknowns—like unforeseen data limitations and process gotchas. Then there were the challenges of supporting a complex project under the strict go-live date of a new product launch.

There was a deeper dynamic to contend with too. Because if skilled, veteran employees were going to adopt industry leading practices, then they'd first have to accept a paradigm shift in how they saw their professions. Company leaders, too, would need to shift how they thought about business operations. Everyone would need to agree that the proposed changes were effective. And they were skeptical.

Yet despite these potential risks and anticipated resistance, the Deloitte team was confident it could demonstrate what was possible—and in so doing, change both minds and business outcomes. Confident because of its IndustryAdvantage™ approach, which spans a deep knowledge of the sector, and access to the full breadth of thinking, experience, and technology from across Deloitte, its people, and its business ecosystem.

The team effectively turned things on their heads. Challenging the client's belief in the competitive advantage of custom solutions, the team instead proposed an "out of the box" (OOTB) solution with leading-practice capabilities and efficiencies already baked in. (In theory, OOTB solutions can be ready to use almost immediately after installation, with little customization or configuration—reducing implementation time-to-value from years…to months.)

First the team built a proof of concept from the OOTB solution to demonstrate capabilities and compiled a detailed comparison between that solution and the legacy system. Users got a chance to kick the tires on the proof of concept and provide feedback.

Then, in collaboration with company leaders and company planning technologists the Deloitte team held a bake-off, running the new solution head-to-head with the legacy system to see how it handled the customized exceptions.

How'd all that work out? In short: Paradigm shift achieved. Company skeptics who'd been fiercely protective of the custom solution model for supply chain—on both technical and business sides—agreed that the Deloitte team should set up a pilot program for the new solution. They'd put it to work under relevant business conditions and use data for the coming new product.

Each step in this process had a dual focus: data-driven decision-making plus thorough stakeholder engagement and buy-in. Taken together, these approaches helped to ensure that decisions were evidence-based and that stakeholders could be confident in both process and outcome.

The project wasn't without its challenges. The stakeholder group was large, with differing priorities. It's never easy training end users on new technology *and* processes simultaneously. Resistance to the paradigm shift proved stronger than expected. The data (when it was available) did indeed have issues and needed significant scrubbing.

Of course there were highs as well. Among them: Breakthrough moments when stakeholders understood the benefits of a demand-driven supply chain and demand-supply pegging. The day they realized their current process was not, in fact, the gold standard, leading (maybe counterintuitively) to enthusiasm for the changes underway. (Paradigms shifted!) Then there were the valuable lessons learned from the data issues—issues that helped the company foresee (and mitigate) obstacles to a successful new product introduction.

Throughout, the Deloitte team focused on the future-state vision over rigid process (i.e., modeled heuristic thinking versus optimization) and actively engaged with company leaders, ultimately delivering a working OOTB pilot.

THEN STAKEHOLDERS REALIZED: THEIR PLANNING PROCESS WASN'T THE GOLD STANDARD.

THE IMPACT

Regardless of whether the company adopts the specific OOTB solution used as a proof of concept (and paradigm shifter), the project has proven transformative, providing an evidence-based rationale for standardizing the company's supply planning. Along the way, it's also surfaced other important lessons.

The project uncovered data gaps. The company will start focusing on fit-for-purpose data. It demonstrated the efficacy of a heuristic approach for supply planning. Planners have adopted this new mindset and will start applying prioritization schemas and rules for matching demand and supply, focusing on the accuracy of input data rather than optimizing (i.e., manually overwriting) the outputs.

The company will also no longer fly blind or need to conduct manual troubleshooting; planners now benefit from *simultaneous* visibility of capacity and material constraints, meaning the time it takes to identify a constraint has dropped from a high of five days to near real time.

Planners who once spent days troubleshooting supply issues now identify constraints in near real time. What used to require manual analysis and took several days now could happen in under two minutes, giving the company unprecedented agility in responding to market changes. Meanwhile, incremental refreshes of feasible master production schedules have streamlined planning and management, enhancing productivity overall.

Together, these improvements have exceeded the company's goals in engaging Deloitte. It has established a scalable foundation for enterprise-wide deployment of a new supply planning solution that will be welcomed by its end users, while lowering the risk of its broader, ongoing business transformation overall.

Henry Ford, were he to visit us today…wouldn't have the faintest idea of what was going on. But, with enough evidence-based explanation, he would —as today's supply chain planners did—definitely shift his paradigm and almost certainly approve.

LET'S CONNECT.

Do these challenges sound familiar?

Learn more about Deloitte IndustryAdvantage™

KEN DEVRIESE
Senior Manager
Deloitte Consulting LLP
kedevriese@deloitte.com
+1 312 206 7045

BLAKE STIMPSON
Senior Consultant
Deloitte Consulting LLP
bstimpson@deloitte.com
+1 212 436 5132

NILAY PANDEY
Senior Consultant
Deloitte Consulting LLP
nilapandey@deloitte.com
+1 615 209 2877

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