

Case Study: \$6 Billion Tier 1 Automotive Supplier (90-day project)

A six-billion-dollar tier 1 automotive supplier retained my consulting services. The production facility was just over one million square feet, with nearly \$175 million in annual revenue. The goal was to rescue a facility that had lost its true north and had forgotten what "good" looks like, customers placed them on a no bid list and profits were well below expectations. The organization did not invest in supply chain leadership and thought the ERP system could guide the organization. Additionally, the facility was without a supply chain manager for over one year.

To make matters worse, Kevin, a vital member of the organization, took an extended vacation (four weeks), causing the facility to lose the few controls they had in place. With deficiencies in multiple areas and the facility already skating on thin ice for quite a while, this vacation put them over the top, and the internal supply chain processes crashed, causing on-time deliveries to drop to the mid 80s percentile.

To further set the stage for the challenges that lay ahead, within my first two hours at the facility, I chartered a plane to deliver parts to a major customer's assembly plant and avoided a line-down situation. If you shut down an automotive customer, they can charge you \$25,000 per minute, which can quickly turn into \$1,500,000 per hour!

Another challenge to overcome was that the supply chain team was spread throughout the facility without a method to keep them aligned. Some of the team's office areas were the bleakest I had ever seen. The ceiling tiles were falling, there were broken light bulbs, and everywhere, piles upon piles of paper and rat droppings. At the time of my arrival, here were the key indicators of how badly the facility's performance had declined:

- On-time delivery had dropped to an appalling low of the mid-80s percentile.
- Premium freight costs had skyrocketed to over \$100,000 per month.
- Inventory accuracy was horrific. The stock rooms doors were wide open without any guidelines on who was authorized to enter, and there was no monitoring of parts movement activities.
- Multiple inaccurate bills of material routings caused backflushing of parts from the incorrect work center locations, creating \$2.5 million of negative inventory. Because there were so many part numbers with negative work center location balances, accurate cycle counting was impossible, resulting in material planners being forced to guess inventory balances, leading to surprise part outages.
- Defective material was not correctly transacted in the ERP system and placed in reject locations, and not reworked or scrapped. This transaction error created significant data integrity issues, which resulted in painful part shortages.
- The manufacturing plant also was a supplier to sister facilities. Because of the chaos, the parts did not get scheduled or were used internally, resulting in dissatisfied customers at the sister facilities.
- The supply chain team was burnt out and had excessively high overtime of 20 to 25 percent.
- Plant safety was nonexistent.

There were several barriers blocking progress everywhere I turned. Since I was hired by corporate, the existing leadership team did not trust me. They were not receptive

to any outside criticism of their supply chain organizational design and leadership style. The location was fast approaching a "No Bid" list from their primary customers, which meant the facility would be out of business in four years.

It was an exercise in brute force, tenacity, and willpower for me not to give up on this seemingly hopeless situation.

As with all barriers, there are opposite positive forces. You need to find them. I found many bridges for progress.

Dolores, the plant manager, joined the company one week before I arrived. Together we won over several vital influencers. The supply chain team was thirsty for leadership, even though leadership was not. I'm a scrapper, and I love this type of fight! Barring an on-site fatality, this facility was at rock bottom, and there was no place to go but up.

Establishing People and Process Foundation

The first step needed at this facility was to start establishing the foundations of leadership. I focused on bringing Christina and Patricia from the materials management team into the picture. They had been pushed aside by past leadership. Their new voices helped to empower them as part of the solution rather than part of the problem. We integrated daily Gemba walks of manufacturing with the materials team (previously, they had not engaged in this process).

Gemba means "actual place" in Japanese. Lean thinkers use it to mean the place where value is created.

Making this minor yet impactful change, we helped the supply chain team identify and resolve issues as they occurred. This effort significantly increased their team shop floor presence and raised the team's morale. As a result, the team felt respected and part of the solution.

Next, I combined the offices of two production planners (Debbie and Francis) into the same office as the production buyers (Susana and Julio) and materials control supervisors (Molly and Laura). As I had mentioned earlier, the office was in rough shape. We 5S'ed the area (see Figure 1), scrubbed surfaces, cleared away the junk, and installed proper lighting. 5S is a workplace organization methodology that uses five words: sort, straighten, shine, standardize, and sustain.

By performing the 5S method regularly, workplace performance improves.

In this instance, the team immediately started to feel like the facility was a better place to work.

We implemented a visual daily management team review for safety, quality, delivery, inventory, and productivity within the materials department and a shift change hand-off meeting.

Next, we started weekly staff meetings and monthly one-to-one meetings with all three shifts to discuss open items, problems, and successes.



Figure 1 5S methodology

To highlight what needed to be accomplished, we created a visual management board and established meaningful key performance indicators (KPIs). These actions dramatically increased the materials team engagement, improved morale, and created urgency within the supply chain team.

We hired Joseph and Juan to be the materials group leaders for managing shipping, receiving, and production inventory control. Because other functional areas were picking up the slack for the organization's neglect in backfilling these roles, the materials group leaders' addition allowed the rebalancing of workloads across all supply chain functions. The additional professionalism allowed for increased leadership and focus on inventory control, and we were able to gain traction in implementing corrective actions.

The materials team led the efforts to 5S all the operations, which earned them excellent reviews from senior leadership and a well-deserved confidence and credibility boost.

We implemented daily Gemba walks with manufacturing and then added all supply chain areas. Also, we introduced the five whys and plan-do-check-act, the fundamentals of operational excellence.

The 5 Whys is a method of getting to the root cause of a problem or opportunity by asking a minimum of five questions.

Here is an example of the five whys to help you see the process in action, in the example it took six ways to get to root cause (Figure 2).

We assessed the team's proficiency of their ERP system. As a result of the assessment, all supply chain and many operations members needed retraining. They were then

required to pass a proficiency test to demonstrate how to complete the systems tasks of their roles. In addition to cultivating their new skills and knowledge, we also engaged corporates' internal ERP expert to help resolve the negative inventory situation.

With renewed confidence and increased positive exposure to leadership, the SCM team started to thrive. They reintroduced improved tigger routes for material delivery. The team also enhanced material presentation

Problem Statement: We need to expedite parts from a supplier

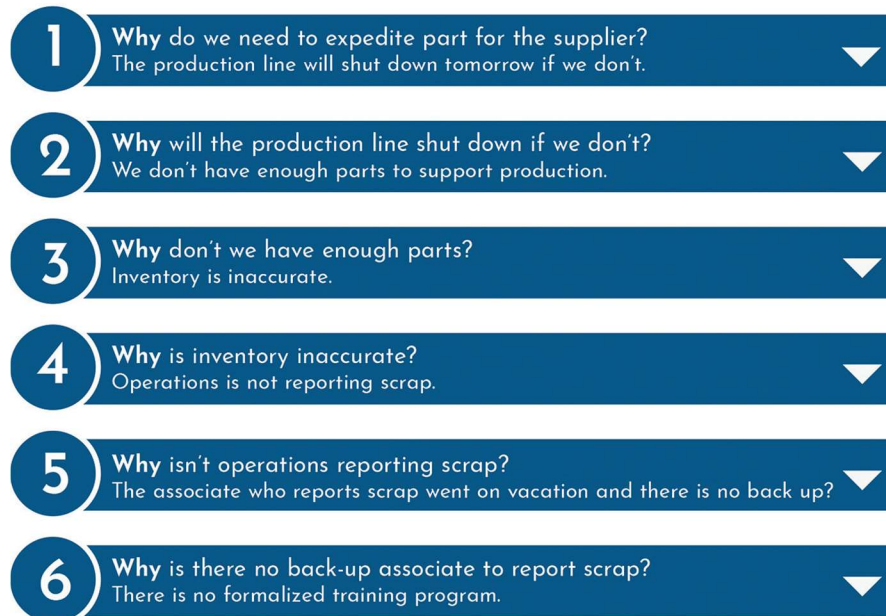


Figure 2 Six whys analysis

at supermarkets and assembly cells so machine operators had better access to the parts they used. We used these learnings to design and implement a model cell for best visual materials control practices: FIFO, sequential pull lanes, and Kanban. Kanban is a just-in-time inventory pull process based on parts usage and triggered by empty parts bins or movement cards.

- FIFO (first in, first out)–The principle and practice of maintaining accurate production sequence is that the first part entering a storage location or process is the first part to be consumed. FIFO processes help to ensure parts don't become obsolete, quality defects don't become hidden in inventory and are a prerequisite for pull system implementation.
- Sequential pull lanes–Used when there is a high part number count for pull inventory processes. Very practical pull process in make-to-order manufacturing.
- Supermarkets–Holds a set amount of each product it produces. Each process simply produces to replenish what is consumed from its supermarket. Typically, the material is consumed by the downstream customer process.
- Tigger routes–A material delivery route utilizing a small tractor to pull a train of "cars" loaded with parts to their assembly destination. Very practical in medium to large manufacturing facilities.

Professional leadership and addressing SCM fundamentals will reward those who take the time and expend the energy. As outlined in the client example earlier, these efforts led to stabilizing manufacturing operations and SCM during a crisis period. Within only 90 days, the team was able to achieve the following substantial results.

Results

- Improved on-time delivery by 14 points to +99 percent.
- Reduced negative inventory from \$2.5 million to \$184K and reduced rejected inventory from +\$275K to \$76K.
- Reduced premium freight of \$100K/month to below \$5K/month.
- Improved overall equipment effectiveness by 9 percent.
- Improved supplier on-time delivery performance from 88 to +99 percent by reducing past due line items from +500 to 139.
- Improved machine downtime due to purchase parts availability from 4 to 8 hours per day to 45 minutes or less per day.
- Reduced safety incidents from 4.6 incidents per month to zero per month.
- Reduced unnecessary hourly overtime and balanced work hours, took team members out of unnecessary meetings, and focused on value-added activities.
- Established a future model for what “good” looks like; increased supply chain’s team engagement and focus.
- Dramatically improved employee engagement, performance, and commitment to the company.

Art Koch is a globally recognized supply chain transformation expert and consultant with over three decades of transforming business performance at mid-market and Fortune 500 companies. He’s increased corporate valuations by over a billion dollars, utilizing his proprietary methodologies to improve customer loyalty, reduce inventory by over \$250 million, and increase EBITDA by \$100 million-plus annually. His new book is *The Supply Chain Revolution: Unlocking the Sustainable Profit Chain*. Learn more at arthurkochmgt.com



