

Wood-Working Tools Manufacturing Client Changes Off-Shore Strategy and Meets Covid Demand

Our client is the manufacturer of unique tooling for the do-it-yourself woodworker. They are headquartered in a small town in the Midwest and employ over 200 people. The company was facing increasing labor and material costs and had developed a strategic model in which manufacturing capabilities were to be moved overseas. Covid-19 brought new challenges and opportunities beginning in March 2019. The company was experiencing a manufacturing demand increase by 100 percent. Due to their inability to meet that demand they were facing the possibility of losing significant shelf-space with retailers. DB&A not only helped the client meet the growing demand and maintain their relationship with retailers, but also reduced the need to move the majority of manufacturing overseas.



In addition, during the initial pandemic lockdowns, the manufacturer faced high absenteeism due to COVID shutdown restrictions. Simultaneously more people were staying at home and had time to spend on personal hobbies, including home-improvement and woodworking projects. This created a twofold increase in demand for the client's products.

While product demand had doubled in a matter of weeks, orders fell behind from a few weeks to a few months. Lead times quadrupled from 14 days to 56 days. Major home improvement retailers were threatening to dramatically change how the clients' products were displayed. They were looking at the elimination of their highly coveted cap spacing and a 400% reduction in their in-line shelf space because the company was not able to keep retailers' shelf space full.

The DB&A Difference

Analysis Financial Proposal

- Proposed Project Cost: \$854,000
- Projected Out of Pocket: \$569,000
- Guaranteed Savings: \$1,666,000
- Payback in 9 months

Business Need

- Unable to meet a demand increase of over 100%
- Losing retail shelf space if unable to maintain supply
- Prepare to outsource all manufacturing oversees
- > Labor and skills shortage due to Covid pandemic

Actual Financial Results

- Annualized Savings: \$2,006,056
- > Actual Out of Pocket: \$237,440
- Paid back in 6 months

Project Results

- ► 50% increase in throughput & productivity
- Eliminated 2-month backlog in 2 months
- Majority of manufacturing remains domestic.
- Cross-training resolved skills shortage

The client realized their capacity for meeting the rising demand was suboptimal and they were struggling to meet the new volume requirements at the right cost structure to maintain profitable margins. They knew they needed help in quickly implementing change.

In June 2020, they sought out DB&A to determine if our business model could help them increase productivity and throughput. As a result of DB&A's engagement, the client was able to focus on improving resource utilization, labor management, and communications. The outcome allowed the client to reverse course on their offshore strategy and decided to keep manufacturing local.

Within two months of working with DB&A, the client was able to meet the twofold increase in demands and exceeded the project payback in just 6 months, instead of the proposed 9-month timeline. Results happened quickly; their actual financial liability during the project was 50 percent less than what was initially planned.

DB&A Analysis

The client had two initial goals, first to improve manufacturing and meet the growing demand for their products, and second to take steps in preparation of moving their manufacturing offshore in an effort to control labor costs. Their strategy was to focus on engineering new tools and products for the everyday DIY consumer at their existing state-side location and shift manufacturing overseas to control labor costs.

During the two-week analysis, the DB&A team quickly discovered that machines were not being fully utilized due to several issues, including:

- Poorly executed changeovers
- Inadequate scheduling
- Ineffective reaction times for downtime events
- Substandard utilization of machines when they were running

Our analysis team estimated this resulted in an under 60% uptime metric for machine utilization.

Additionally, we discovered:

- > Assembly departments were poorly managed
- Lines were not properly balanced
- Scheduling was reactive and frequently changing intra-day
- > Quality was random and not standardized
- Line performance was operating at less than 50% of optimal efficiency

After doing an in-depth analysis, the DB&A team was able to gather minute-by-minute data on how the



front-line managers were spending their time. Their existing management culture resulted in managing the problems of the day rather than being proactive and prescriptive in managing the high-level goals set forth by the company.

DB&A found that front-line leaders believed they were spending 20 percent of their day supervising (actively leading, guiding, setting expectations and follow-up), when in reality it was only 6 percent of their average day. This gap in perception was attributed to management's belief that merely being available, attending meetings, and reactively solving problems was supervision. This misperception of "good" supervision was a critical deficiency missing in the organization to properly drive a continuous improvement mentality and manage resources to overcome adversities.

In summary, front-line management was not able to control their areas of responsibility successfully. This lack of effectiveness was a result of:

- Mis-aligned roles and responsibilities across the levels of management
- Lack of understanding of what "good" supervision or management looks like
- Lack of process metrics
- Lack of tools to proactively manage the floor

The inability to instill a disciplined shop floor resulted in the majority of supervisory time being spent reactively solving issues. Front-line management did not have the needed Leader Standard Work (LSW) sought by the company nor the discipline to execute to LSW if they had it.

By creating proactive behavior practices such as assigning work, following up, and preventing gaps in production, the front-line leaders could leverage the company's assets to reach the company's goals.

Implementation Actions

As DB&A moved into the Implementation stage of the engagement in June 2020, Covid was still relatively new and the challenges that it posed were unseen in comparison to any previous engagements.

DB&A immediately started addressing the technical discrepancies in their injection molding department. This was accomplished by changing the way products were scheduled from a daily changing schedule to a firm 2-week schedule to feed the assembly division a steady supply of subcomponents. This minimized the impact of changeovers that were costing the department nearly 4 hours of downtime per occurrence. DB&A then implemented the classic



SMED (single minute exchange of die) technique to the changeovers, eliminating all non-valued activities and moving out all external activities to machine uptime time. Changeovers went from taking almost 4 hours per event to just 1 hour. This was a 75 percent improvement, adding back almost 6 hours a day in capacity. Stabilizing the scheduling process from an intra-daily changing schedule to a fixed 2-week schedule dramatically decreased the number of changeovers on the machines from last minute "break-in" jobs.

Another DB&A team worked simultaneously in the assembly area to instill a shop floor discipline equivalent to an automotive assembly line. This would ensure assembly lines were properly balanced so no one station was ever waiting for product from a previous station. Our consultants worked alongside supervisors to implement standards for keeping the lines full in the first hour and last hours of the shifts. Previously the lines were bled dry at the end of every shift costing the first hour of the next shift to reestablish the flow.

Visual boards were placed at every line (over 20 lines in assembly) to show how each line was performing against the company's targets. Supervisors were trained to update the boards every hour and share updates with employees every hour. As a result of this new management behavior, a healthy competition arose over the shifts as to who could perform better.

"I went from 'just doing a job' mentality to a mindset of 'am I winning or losing' to the capacity of my line," said a lead in assembly.

Overall, the assembly team accomplished a 50% improvement in throughput to meet the increase in demand the Covid pandemic shutdown brought on.

Labor availability was another new challenge brought on by Covid. Absenteeism was high and skill sets short. DB&A recognized in this environment crosstraining would be a premium factor in achieving success. Employees were training in areas they had never experienced before and at a level the company had never seen, anticipated, or ever thought they would need. This allowed the client to keep the gains they got through the initial part of the engagement and through the supply chain issues of not having materials needed to fulfill orders. So rather than decrease hours or pay employees to be idle, crosstraining provided a much-needed relief in other areas such as shipping.

In the end, our client was able to meet new demands from their retailers and sustain the improvements gained through the engagement and beyond. Because of these results, the client made a strategic decision to keep injection molding and assembly local and forgo the plans to move manufacturing overseas. The gains they would have realized in labor rates savings were outdone due to the massive increase in their local productivity. They opted to only send the metal shop that fabricated product components overseas, as metal material costs were more competitive.

Project Results

During this DB&A engagement, active supervision by front-line managers improved by 31% per day due to the new management behaviors, including a management and communication process and cadence that drove the continuous improvement mindset. Additional results include:

- Went from 2 months behind schedule on orders to no late orders in 2 months
- Met 100 percent increase in demand with zero capital expenditures
- Increased throughput and productivity by 50 percent
- Kept majority of manufacturing domestic rather than outsourcing overseas
- Cross-training became a premium due to COVID absenteeism and work-from-home mentality
- Increased engineering capacity by 35 percent allowing for more capacity in new product design and decreasing the typical 1- year time span from design to manufacturing down to 6 months.



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