catalyft
Business Improvement & Advisory Services

BUILDING PRODUCTS EXPERIENCE CASE |
Getting the Best Out Of In-House Expertise

Productivity Up **30%**

On-Time Deliveries Up **21%**

Safety Incidents Down **63%**

Waste & Scrap Down **25%**

Productivity, Safety, and Quality Gains...Through a Healthy Dose of Change Management

EXPERIENCE CASE | Building Products
Getting the Best Out of In-House Expertise

Barrage of Challenges

This manufacturer specialized in complex, highly customized glass designed for discerning architectural customers with precise specifications. Product complexity, fragility, and diverse application requirements wrought havoc on one plant's ability to consistently produce, efficiently and effectively, across all three shifts per day. The team was overwhelmed with work-in-process on the floor choking workflows and tying up cash, products were getting damaged while waiting for the next treatment processes, and orders were getting bogged down in chaos. A bad habit called "running the gravy", their term for producing easier items ahead of customer demand sequencing, created nightmarish on-time delivery problems and animosity across all shifts. The firm had some additional plant capacity for select products but most orders could not be economically shifted to sister plants due to transportation cost concerns and problematic distances away from the end-customers. Project objectives included boosting productivity within the lagging plant to meet customer delivery schedules while providing Management with more flexibility to balance workloads and consolidate shifts. Ultimately, the firm expected higher operating margins.

The Path to Accelerated Improvement

Reshaping Planning and Scheduling | We developed a Sales & Operations Planning (S&OP) process driven by a more dynamic, multivariable capacity planning model. Scheduling had historically relied on tribal knowledge of a small Scheduling department. They did not have a data-oriented approach to scheduling because they lacked a comprehensive understanding of how long it really took to produce batches of all SKU permutations across the entire order-to-delivery process. So, we worked with Management and Engineering to develop updated work-to-time standards that realistically considered the complexity of the batch production with labor skill sets and machine efficiencies.

Addressing the Sea of Work-in-Process | Together with Management and a team of Production Subject Matter Experts (SMEs), we reorganized work flow from raw materials warehouses, through 5 main Production areas, and back to Shipping—removing most physical obstructions and training gaps necessary for keeping work flowing from station to station. This involved relining the entire factory floor with clear, visible lanes and no-product zones. We trained teams on lean production processes and implemented a color-coordinated cart system to easily see aging glass orders without having to scan bar codes and look at dates in the enterprise resource planning (ERP) system. Work-in-process flow redesign was developed through a series of kaizen events. Warehousing developed a more precise way of staging raw materials closer to work stations—both physically and in time. With production more in synchronicity with customer demand, work-in-process was contained within more manageable areas, orders were less at risk of being damaged, and overtime spent running delayed items was cut in half.

Building Products

Case Synopsis
- Building up productivity capabilities and operating margins with the makers of a complex, fragile, batch product through practical production controls, process re-engineering, and operational metrics

Company Profile
- $250+ million building products engineering, manufacturing, and distribution firm

Engagement Results
- 30% increase in productivity
- 63% reduction in safety incidents
- 25% reduction of waste & scrap
- 50% reduction of overtime
- 10% improvement in quality
- 21% improvement of on-time deliveries

Operational Benefits
- Improved Sales & Operations Planning (S&OP) including custom capacity planning model
- Optimized work-in-process flow and product staging & storage
- Designed more efficient plant floor layout and visual factory cues
- Implemented operational metrics for quick decision support across plant responsibilities
- Incorporated lean principles boosting safety, work flows, process controls, decision-making, and continuous improvements
- Upgraded performance reporting and trend visualization

Organizational Benefits
- Enhanced Safety and Quality training
- Accelerated data-backed decision-making in S&OP, Production, Maintenance, and Warehousing
- Facilitated harmonious Production and Maintenance communication
- Initiated "Lessons Learned" knowledge sharing across all plants

Cascading Data from Management to the Floor (and Back) | To ensure the team's newly-developed production standards tied to the capacity planning tool, new productivity, quality, and schedule-oriented key performance indicators (KPIs) were developed with specific plan numbers displayed for all production stations on every shift. These new KPIs gave each team a clear understanding of the day's expectations and a way to ask for help when off-track during the shift. Real-time production numbers were updated throughout the shift and displayed on customized whiteboards. Production numbers rolled up across all shifts and product lines to a management dashboard on a daily basis.

To get Management more involved in reviewing shift performances and coming up with plans to help support the teams out on the floor, we developed a weekly review meeting with new operating dashboards displayed on a smartboard (an interactive, internet connected screen blending the functions of a computer with annotations of a whiteboard) allowing the entire Management team to see and discuss performance trends in a novel, collaborative way. All new operating dashboards had the expected drill-down capabilities, long-term performance trending, easy-to-interpret snapshot graphs, and crisp warning signs highlighting performance constraints.

Building Stronger Production and Maintenance Coordination | We brought together the Production and Maintenance teams for several kaizen events designed to improve factory floor layouts, preventative maintenance work, and quality control measures. Through these events, the team was able to generate several new ways of addressing problems under scrutiny but also surfaced several gaps in communication between the two critical departments. For instance, the entire work order process needed to be updated with proper standards, with more useful work instructions, and with better status visibility.

Through the kaizen events, the teams came to an understanding of some light maintenance work Production could do on shift that would alleviate some of Maintenance's workload while extending uptime for key equipment. Maintenance agreed to teach Production Supervisors about centerlining the machine settings for optimal performance across product lines rather than running the machines as they found them or trying to optimize settings during the shift (and losing production time and product quality in the process).

Encouraging A Continuous Improvement (CI) Mentality | While our collaboration involved new tool development, some polishing of good practices that had fallen, and managing with operating dashboards, the biggest change made involved how the team coached and supported each other. Interaction points across the team with a focus on handoff quality were of particular importance here. Whether the handoff involved a new shift taking over, an employee flexing over to a new work station, or Maintenance working with Production to get the equipment back up, the team needed to learn how to focus on the problem to be solved rather than where to lay blame.

In other words, the team needed to spend their collective precious time and energies on solution development rather than ad hominem attacks or deflating internal divisiveness. They needed to learn to look at the facts through performance metrics, see any trend out of control, raise the alarm to get the right resources marshalled, and work together. Inherent in building a CI mentality across the organization, they needed to cultivate a deeper understanding of interdependencies across shifts, across departments, and across responsibilities. Several waves of practical in-class and on-the-floor training got the team on a healthier path.

Catalyft Team's Collective Manufacturing Engagements

5+
Building Products
Sectors Covered
(Team Total)

5
Workstreams Per Engagement
(Historical Average)

6
Months For Building Products
Engagements
(Historical Average)

$400 Million
Manufacturing Clients'
Revenue Size
(Historical Average)

4.0 to 1
Manufacturing Return On
Investment
(Historical Average)

Matching Technological Sophistication With Practical Needs | Part of our responsibilities involved getting the right tools in the hands of the Managers and Supervisors so they could support their team faster. Quite frankly, the levels of technological innovation applied on this project ranged significantly. Existing software systems, practicality, cost, and user aptitudes all counted in our deployment decisions.

For real-time Production updates within shift, a nice-and-simple whiteboard with a specific set of KPIs updated against targets worked well—easy-to-understand, highly visible, and not much to break down when water, machine oil, high humidity, or other factory challenges show up.

For the Planning & Scheduling Manager, he needed a better line balancing model using their updated work-to-time standards generated by the team; so, we developed an Excel-based scheduling model to test order scheduling, line balancing, and the latest changing parameters. When the model was validated and scheduling process re-engineering was in place, we then migrated the model into a scheduling software application supporting their S&OP process and integrated into existing information systems.

Management needed access to operational reporting systems through omnichannel devices; they also needed a more collaborative way to review the numbers in the All Performance Meeting we developed together. From a technical standpoint, the aforementioned smartboard placed smack-dab in the conference room allowed the entire team to look at performance trends and constraints together, discuss potential resolutions, and plan the improvements. The team appreciated this bit of technology because it really made the newly-developed KPIs come to life and allowed them to get involved in solution set brainstorming through the smartboard's digital whiteboard functions (circle data points, make brainstorming notes, send action items, etc.) The smartboard was a tech-enabled way to display and share snapshots of performance but, more importantly, it got Management looking at the numbers together (not sitting at their own monitors or scribbling on print-outs). For this team, galvanization through novel technology was exactly what they needed.

On the CI front, we settled upon a simple system, allowing access for everyone, rather than having good ideas and progress tracking residing within the laptops and user rights of a chosen few. So, we implemented a very old technology know as a T-Card System. Essentially, this is a series of cardboard cards with specific colors representing improvement areas (such as Productivity, Safety, Training, Environment, Company Culture, etc.). Anyone can submit an improvement idea. Upon review by Management, ideas with some promise get assigned preliminary resources to test the theory. As the idea shows promise and gets developed, the T-Card is physically moved from slot to slot on the way to implementation. Of course, merely writing down a novel solution on a colored card does not bring it to fruition; so, T-Card system management and follow-up processes must be engineered (frequency of reviews, criteria for pursuit and rejection, roles & responsibilities, confirmation there's not a team already working on the problem, data flow, etc.) This deceptively simple system had several merits once all the behind-the-scenes management infrastructure was in place. High points included universal access for all the team, a systematic way of looking into improvements, progress represented visually and quickly showing when momentum stalled. This plant even used the completed, physical T-cards (moved from idea to testing to implementation) as part of their "Improvement Hall of Fame" - placing the colored cards in a display case as the team rounded the corner to the Production floor.

Our Way of Collaborating

Identify
2-4 meetings at no cost
- Discussion of issues
- Alignment around probable causes
- Framing of analysis scope
.

Qualify
3-6 weeks at cost
- Qualify opportunities with Trapped Value Analysis (TVA)
- Quantify anticipated results
- Initial engagement design
- Key meetings: Launch, Opportunity Review, Solution Review, and Final Framing of analysis scope

Modify
4-8 months
- Final engagement design
- Execution of engagement design
- Realization & measurement of results
- Ownership & sustainability

Office Locations

NYC
One World Trade Center
Suite 8500
New York, NY 10007
212 220 3897

CHI
444 West Lake Street
Suite 1700
Chicago, IL 60606
312 260 9907

MIA
200 South Biscayne Blvd
Suite 2790
Miami, FL 33131
305 925 8112

SFO
101 California Street
Suite 2710
San Francisco, CA 94111
415 636 7999

TOR
20 Bay Street
11th Floor
Toronto, ON M5J 2N8
647 725 9662

Pragmatic Safety and Quality Control Charts | The team designed and developed a very effective way to visualize prescribed quality and safety checks across time using a simple run chart updated at reasonable checkpoints on all major workstations, across all shifts. These control chart boards had the latest upper control and lower control limits for customer specifications. By plotting production run performance of every product through a series of dots over time, comprising a trendline, anyone could see if production was within the specified control parameters. If not, the team was trained to get some intervention help from other departments, if need be, to get back on course. These simple little dots showed trending, ensured problems were caught early, and reminded employees to keep the checks on schedule. More importantly, we incorporated safety-related checks in this process, too. Safety plotting involved verifying personal protective equipment (PPE), adherence to work instructions & protocols, observing ergonomic conditions, and displaying incidents & near-misses counts) to make safety every work station's first consideration. These simple little control charts helped to infuse safety with quality output, provided more visibility for all team members, and oriented everyone toward active prevention.

Sharing Best Practices across Plants | This collaboration had a large assembly of SMEs from other plants working within the Implementation Team. In-house SMEs had the same focus as everyone else—to improve productivity and quality within this particular plant. However, the in-house members also had a wealth of experience, specific product & customer knowledge, and a good feel for the company culture, too. Our kaizen events, operational improvements, and new tool development included the in-house SMEs in all facets. Initially, we had to instill patience and transfer a few change management techniques to our in-house SMEs, ensuring they allowed their colleagues to learn from their collective experiences (as opposed to micro-managing their peers, or worse, jumping in and managing departments). Once the in-house SMEs and Management found a harmonious cadence on contribution and communication, we were off to the races. In-house SMEs were able to share very technical advice on machine settings, IT resources the plant was underutilizing, innovative safety measures, pragmatic visual factory cues, and in the spirit of lessons learned, mistakes they made in their own plants back home. The project became a vehicle for long-overdue sharing of knowledge across plants. Beyond our project timeline, this knowledge sharing amongst peers morphed into a more formal process for Plant Management across the entire firm to learn from tribulations and successes every month.

Results

With progress made across Safety, Planning & Scheduling, Production, Maintenance, Quality, and Warehousing collectively, the firm was able to meet current production demands in two shifts a day rather than having to run three shifts. This translated into a 30% improvement in productivity while experiencing a 63% reduction in safety incidents, a 25% reduction in waste and scrap, 50% less overtime, a 10% improvement in quality metrics, and a 21% improvement in on-time deliveries. Perhaps more valuable than these near-term benefits, the in-house SMEs on the Improvement Team returned back to their own plants with new tools, re-engineered processes, and well-tested procedures to implement in their own manufacturing environments, perpetuating results and sustainability well beyond our time together.

catalyft
Business Improvement & Advisory Services

Turning
Organizational Energy
Into Results
That Matter

Building Products

Plant Productivity &
Capability Build-Up

US-Based
Collaboration