

5 Ways to Increase Capacity by 1-5% in 3 Months or Less

Operational Run Strategy

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What do you do?



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Increasing Production Capacity Rapidly

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You've taken the obvious steps to ensure all lines are staffed 24/7 perhaps with a few extra floaters or temps so no line is ever idle, even after weekend call-offs. You're working on equipment reliability and have the visual boards up to help supervisors and operators stay on track. But how does one find several percentage points of capacity without a year-long project to install new equipment?

The following five ideas can be implemented in 30 days with visible results in 90 days or less because they involve a few people making different decisions, rather than making a major capital investment. Each one involves a change to the planning approach or *Run Strategy*:

1. Ensure products are planned in the sequence that requires the least changeover time. This may seem obvious, but even one out-of-sequence item per week can add an hour or more of downtime.
2. Eliminate schedule break-ins that require additional changeovers. Even if the changeover is in sequence, it can still be one or more hours to change to the break-in product, then one

Run strategy key

actions:

1. Sequence production plans to minimize changeovers and downtime
2. Eliminate schedule break-ins that require additional changeovers
3. Eliminate one+ changeover per week by optimizing the sequencing over several weeks
4. Change the frequency of production planning from weekly to a longer period to reduce additional changeovers
5. Set up all small volume items as "make-to-order" with longer lead times

or more hours to change back to the regular schedule. Note: if higher level leaders are requiring the schedule break-ins and “no” doesn’t seem to be an option, create a log for schedule break-ins that includes the requestor, the time required, the lost time due to additional changeovers, and the value of the time lost. (Usually contribution margin per unit X number of units.) Email the requestor with these details and have them “approve” the lost capacity. If they don’t get the concept right away, then a list of the lost capacity decisions during the monthly financial review usually gets leaders’ attention.

3. Eliminate one changeover per week by optimizing the sequencing over several weeks. Instead of running products ABCDE in Week1, then ABCDE in Week 2 and so on, try something like ABCDE in week 1, then EABCD in week 2 then DEABC in week 3 and CDEAB in week 4. Making a “double run” of the week-ending product in a 5-product sequence reduces the number of changeovers per week from 5 to 4. It may result in slightly higher inventory (approximately 7 days), but is usually worth it, especially in the short-term.
4. Change the frequency of production from weekly to bi-weekly, or bi-weekly to monthly, or monthly to quarterly (if shelf-life allows). Changing two products from weekly to bi-weekly eliminates one changeover per week. In a 5-product system that would look like: ABCD in week 1, DEAB in week 2, BCDA in week 3 and ABDE in Week 4. Changing the week-ending sequence and changing the weekly to bi-weekly frequency results in a reduction of two changeovers per week with only three changeovers remaining.
5. Set up all small volume items as “make-to-order” with six to eight-week lead times, which allows for order consolidation on a monthly basis. Depending on how these types of products have been manufactured in the past, this can eliminate one or more changeovers per month. Additional inventory of slow movers should cost relatively little compared to the complexity removed from manufacturing.

None of the above suggestions requires any capability, rate or performance changes to be achieved. They are all Run Strategy decisions that can become part of the planning guidelines or simply “how we do business.”

A project X/Celerant just completed at a chemical plant with seven products running on the bottleneck asset achieved a 65% reduction in weekly changeover time worth \$1.5 million annually. This savings was achieved by implementing #1, #2 and #4. We implemented a change log and approval process for schedule break-ins, but after the first one, no one asked anymore.

In this case example, step #3 wasn’t an option because of periodic system clean-outs. The client did standardize the timing of the system clean-outs rather than waiting for quality failures, which allowed for better planning and timing of these activities. They were already on a make-to-order run strategy for slow movers due to shelf-life requirements, so #5 was essentially already in place.

We combined this project with a SMED (Single Minute Exchange of Die) or cycle time reduction implementation on the clean-outs which added another \$1 million in capacity annually. This was a 4% increase in capacity annually. Within 30 days of the initial implementation we observed the average changeover time start to decrease. There were some unrelated production issues that prevented achieving the run rate until 120 days into the implementation. A sustainability review 60 days after the end of the project confirmed the run rate of \$2.5 million annual capacity increase has been maintained.

Implementing these types of changes requires strong leadership and organization discipline to maintain them. Consistent communication is also a factor, but if capacity truly is important then it's easy to get leaders' attention in marketing, sales, customer service and operations. Once people see what the old decisions were costing, or what it means to break into the production schedule for an emergency order, it's possible to ride the momentum to sustainable change.

Results



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