



# Getting Results

## Five Ways to Reduce Inventory, Improve Service and Reduce Cost

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**M**anagers need practical science they can use to get results quickly. This article provides five ways for executives and operations professionals to get quick wins by using proven science to diagnose how they can improve service, reduce inventory and reduce cost.



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**1 Align Operations Strategy With Business Strategy**  
Business strategy should drive operations strategy. If desired business results are not being achieved, the first place to check is to ensure that operations strategy aligns with business strategy. Recent examples from well-respected companies show what can happen when operations strategy is not aligned with business strategy.

At UPS and FedEx last Christmas, the business strategy was to heavily promote next-day shipment on Dec. 23 for arrival on Christmas Eve. The companies did not have an operations strategy that provided enough capacity in the face of variability — a huge spike in demand and bad weather. Christmas gifts arrived late.

At Southwest Airlines, operations strategy and capability did not align with the business plan to increase profits and offer better connections with quicker turnaround times at gates. When operations proved unable to support quicker gate turnaround times, Southwest Airlines dropped to the bottom of the rankings for on-time arrivals.

**2 High Level Assessment of Utilization**  
Capacity is a first-order effect. If a company has too much open capacity, the business won't make money. If it has too little capacity, it won't be responsive enough. Think about the level of utilization that makes sense for the business and ensure you are targeting the right spot on the curve.

**3 Bottleneck Analysis**  
The science of operations shows that the operation's output is limited to the rate of the bottleneck. Sometimes, in support of a fanatical pursuit of lean, operations executives and managers unintentionally starve the bottleneck. If lean results for responsiveness are great but the operation is struggling with throughput, check to make sure the bottleneck isn't starved.

Another variation of this is trying to implement one-piece flow. Sure, one-piece flow would be the ultimate performance in a perfect world (zero variability) but no one works in that world. Consider this example: After 15 years of struggling to achieve desired throughput, an operation increased output by 30 percent in

one day just by adding more work in process (WIP) inventory to the line — moving away from one-piece flow. It's true that the added WIP increased cycle time. However, the company only shipped once a day so customers saw no service impact. The plant's financial performance was greatly improved simply by making sure the bottleneck was not starved for lack of WIP.

## 4 Potential for WIPCAP Deployment

The magic of lean is in the WIPCAP. There are many ways to limit WIP. Sometimes, the most effective solution is not the most complex solution. For businesses that have not started a lean effort but need reduced cycle time to advance business strategy, consider starting in a simplified fashion with a WIPCAP. It can be as simple as limiting releases to the floor. For businesses well down the path of a lean journey, consider the complexity of the existing implementation and current results. Is the bottleneck unintentionally starved by a Kanban system that is too restrictive? Is the environment characterized by low-volume, high-mix, which makes it difficult to maintain a kanban supermarket?

Constant WIP (CONWIP) pull protocol has been well documented for decades. CONWIP caps the amount of WIP in a line but not at each station. The WIPCAP is set for a flow. A flow is a routing of process centers and steps. CONWIP provides a flexible WIPCAP that is easier to manage than kanban and produces better results.

With CONWIP, changing bottlenecks within a flow (usually due to a changing product mix) creates no problems. WIP will naturally accu-

mulate at the bottleneck. As a practical matter though, managers need to be aware that there will sometimes be no WIP at some stations in the line with CONWIP. This is called a capacity buffer and can be addressed with flexible labor — move labor to other stations when there is no work at a station.

## 5 High Level Analysis of Lead Times

We often find companies promise somewhat arbitrary lead times to their customers. This is often true with “standard” lead times. This can lead to poor service or excess cost depending on the operating environment at a given company. Executives should consider options for adjusting lead times in view of the characteristics of their companies' markets.

Using a time buffer where possible will reduce the cost of the inventory and capacity buffers. On this note, we find it useful to look at the demand profile of the product portfolio. Some products are standard in the market and often require quick lead times. Other products are custom, and customers are often willing to wait.

Executives should segment product lead times based on market requirements. The “one size fits all” approach to lead time leaves money on the table.

Finally, make sure measures and targets align with chosen market

segments. We see many companies that segment lead times but then use one arbitrary measure and target to assess performance. For example, same-day, quick-ship programs for spare parts may require 99+ percent on-time delivery. However, the target for a same-day, quick-ship program may not be an appropriate target for delivery of projects or prototypes. It might be a better business decision to have a 90 percent target with low average days late to avoid the cost of capacity and inventory required to always be on time no matter what the circumstance. Executives should

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implement different lead times by business opportunity when setting strategies for customer responsiveness.

This science of concepts is common to all manufacturing, supply chain and service operations. However, the science is not common knowledge to many managers, and the result is poor operations results and uncertain career progress. These suggestions provide some help in applying the science in action. •

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