

The Order to Delivery Cycle: Quick Response is Essential

by R. Michael Donovan

Many companies have trouble delivering products on-time, never mind quickly, and are plagued with excessively long order-to-delivery cycle times and cannot seem to find a solution. Even though everyone is in a hurried scramble to ship product, often more than 95 percent of the order-to-delivery cycle time consists of *waiting*. Waiting for sales orders to be processed. Waiting for engineering documentation. Waiting for corrective actions to design information. Waiting for material. Waiting for a production process to be corrected. Waiting in a manufacturing bottleneck. All of this waiting just keeps stretching the order-to-delivery cycle time, ballooning inventories, increasing costs, and alienating customers. It also keeps adding unnecessary operating expense in the continuous mad scramble to compensate for these problems.

Cause and Effect

The causes and effects (some can be both) of long order-to-delivery cycle time are wide and varied and their cumulative impact on operating results are nearly incalculable. Identifying and correcting the root cause impediments needs to be done in order to achieve significant improvements in order-to-delivery performance. Consider the following ten common problems as you evaluate your order-to-delivery process.

- Poor delivery, unhappy customers and falling sales. On-time delivery and customer satisfaction go hand-in-hand. Cycle times that are too long lead to delivery delays, which leads to dissatisfied customers and eventually a loss of business and profits. Customers will begin to seek other suppliers as delivery times grow and become erratic.
- Overly complicated business processes. Ineffective practices and slow, fragmented systems for handling sales orders, acquiring materials, scheduling production and other information are often big contributors to overly long order-to-delivery cycle times. Complication must be replaced with effectiveness to reduce cycle times and costs throughout the process.
- Bottlenecks. Think of the order-to-delivery process as similar to a six-lane highway. When you introduce any type of impediment on the highway, be it toll booths, construction, an accident, a slow vehicle or poor weather, traffic begins to slow and queue up until it eventually stops completely. These bottlenecks can be fixed by taking action, like adjusting toll booth capacity or adjusting flow to capacity. In manufacturing, too much queue from work-in-process inventory will clog work centers slowing velocity and creating bottlenecks.
- Too much non-value added (NVA) activity. Moving inventory, storing, waiting, rework, expediting orders, lots of paperwork, etc. balloons operating expenses and consumes a lot of the cycle time it takes to produce a product in many companies. The actual value added time is often much less than 10% of the total time.

- Poor quality. Too much time is spent on fixing flaws, recycling waste, handling complaints and trying to keep customers from going to your competitors. Perfect quality products and information should be a very high priority for manufacturers because it results in lower costs and higher customer satisfaction.
- Too much inventory. Excessive amounts of raw material, work-in-process and/or finished inventories are prime indicators that a company is not adequately and effectively balancing production input and output with customer demands. Furthermore, high work-in-process gets in the way and slows manufacturing cycle times.
- Low throughput. When cycle times are extended you can be assured that the causes are also depressing total production throughput which reduces profits and cash flow.
- Inadequate production scheduling. Poor production scheduling logic and practices invariably lead to flow imbalances which create bottlenecks and depress manufacturing throughput. Production scheduling is usually an area of great opportunity. So significant is the production scheduling opportunity it should be high on top management's list of priorities.
- Poor supplier relations. Close ties to suppliers are critical to cycle time reduction. Suppliers must know your goals and needs and have production and business processes that can support nothing less than 100% of your needs. On-time delivery of quality materials is essential to reducing cycle times, decreasing inventories and lowering costs.
- Improper performance metrics. Frequently, management rewards production practices that actually result in longer cycle times. For instance, if the success of the shop floor is measured simply by efficiency, utilization and/or standard hours of output, you can be sure that parts will be produced even when they are not needed. The result: too much inventory of unneeded material and possibly shortages of what is needed.

Balance and Flow Are Key

Paramount to reducing cycle times and increasing on-time predictability is to keep material and information flowing at high velocity through value added processes. This means eliminating time wasting queues that constrain flow and prevent balance through the various administrative and manufacturing operations. At the same time, get rid of (as much as possible) the non-value added (NVA) tasks that are likely being performed in all functional areas. Those NVA tasks not only slow work flow velocity, increase cycle times and decrease predictability, but these same activities have ballooned operating expenses to unacceptable levels. Often not recognized as critical to cycle time reduction is the need to improve the quality and velocity of information flow. Reducing lot sizes can also cut cycle times but you should simultaneously, and at least proportionately, cut changeover times to effectively cut lot sizes.

Balance and flow must be maintained in order to reduce bottlenecks in every area of a company. Production bottlenecks generally occur because a poor scheduling routine created them, resulting in the need to expedite orders and a disruption in the flow of production. Many systems in use today actually increase cycle times due to their "illogical logic" about what the real schedule

should be. Many managers mistakenly rely on systems that cannot provide accurate answers to critical questions like:

- When will it ship?
- Which orders might be late?
- What is the right sequence of jobs to work on now?

When a company can easily and accurately answer these types of questions they have a handle on cycle time.

How Good Can You Be?

Cycle time reduction can mean lower costs, reduced inventory levels, improved production predictability, increased customer satisfaction, and better quality. If a company had to pick a single operational issue to focus on, time compression across the entire company would be an excellent one to start with.

Many executives I have talked to believe their organizations can do much better. These executives see the opportunity, but less than expertly planned and directed efforts often hold improvements back. In addition, many companies unknowingly limit how good they can be by setting goals based on the previous year's or month's performance. Dramatic cycle time compression, on the other hand, requires stretch goals in line with world-class performance. This means that goal-setting philosophies must undergo a fundamental shift by setting targets in line with the results necessary to be an industry leader. The fact is, companies that have pursued aggressive time compression have achieved dramatic breakthrough results such as:

- 50% to 95% decrease in the order-to-delivery cycle
- 50% plus reductions in inventories
- 20% to 40% reductions in cost
- 10% plus increase in throughput
- 60% plus reduction in cost of quality
- 30% to 80% reduction in distribution and production space
- 99% on-time performance

For many companies, the first phase of cycle time compression is comparatively easy to accomplish and offers substantial initial benefits. More significant results can only be achieved by compressing cycle times throughout the supply chain. This requires working a combination of the right issues to succeed at a breakthrough results rate. By setting aggressive, but achievable, targets and through process redesign, a company can rapidly accelerate the velocity of improvement and attain world-class performance levels. Achieving the results requires time-compressed, high-quality performance in every internal and external aspect of your business.

What Should Be Done?

For some, myopic past efforts that focused just on "hot spots" produced little or no lasting measurable results. Cycle time reduction must be a cross-company, cross-functional effort.

Cycle times must be compressed at every stage of the order-to-delivery cycle, from order processing, material procurement and production scheduling to engineering, marketing, receiving, shipping and accounts receivable. It is certain that lasting, measurable results can only come from well-designed internal processes and, then, the entire supply chain. Process redesign activities must focus on what the customer wants: high quality products, delivered on-time and quickly, and at a good price.

The number one success factor in order to delivery speed is management's compelling determination to achieve substantial cycle time reductions. Management should base their action plan on a thorough opportunities assessment of the current situation. The assessment step is an essential task for defining and subsequently initiating what improvements should be done, when they should be done and what you should expect for results.

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