

Do We Really Need More Capacity (and Reliability)?

by Ron Moore PE

With the economic downturn, and the resulting reduction in consumer spending, the world is awash in manufacturing capacity. With capacity being a key goal of reliability practices, and the anticipated long road back to where markets require full capacity, does this mean that reliability is of little importance in the coming years, or no longer meaningful? Why should we focus on creating more capacity when we're already awash in it?

It is the wrong question to be asking? Capacity is a consequence of reliability. It is not the overall goal of reliability. The overall goal is lower costs, higher gross profits, and greater market share, with a minimum of fixed and working capital. The question to be asking during these trying times is "How do we lower our costs, increasing our gross profits, and positioning for market share?" Reliability is even more important in a market where there is excess manufacturing capacity. The winners in those markets will be those with the best reliability, and thus the lowest costs, the lowest inventory and working capital, and the highest gross profits that allow them to survive the downturn and ultimately prosper in an improved market.

We should always be working to maximize the capability of our manufacturing assets through reliability and best practices. When we do, we eliminate defects and waste. As a result we achieve lower costs, lower inventory requirements, and higher gross profits for minimal capital. To those who say we have more capacity than we need right now, I say you're looking at the wrong issues and too tactical in your thinking. Granted, we must survive in the short term to prosper in the long term. Reliability helps eliminate defects and waste in our systems. And, it creates additional capacity, and its attendant lower costs and inventory, and higher gross profits. We now have options for the additional capacity created. We can:

1. Sustain and cash flow the business in the short term (going after more volume or market share may not be a particularly good option in the short term); and more importantly,
2. Rationalize some of our less productive capital assets, while still meeting market demand, and achieving lower costs. That is, having created more capacity in our better performing assets, we rationalize the poorer performing assets. These are typically ones with higher costs, and/or structural disadvantages. These structural disadvantages can be numerous, such as energy or raw material costs, distribution costs and location to market, or in some cases older technology, or some combination of these. These assets are no longer viable in the current market, and should be "restructured" out of the business, while we still meet market demand with the existing assets. This approach positions the company for greater strategic success, and allows it tactically to survive and even prosper in the downturn.

Cost cutting is not the same as cost management. Costs are a consequence of your processes, and cost management focuses on getting those processes right. Get those processes right, e.g., apply reliability and defect elimination principles, think at a systems level vs. silos, and your costs will come down naturally. That said, in a major market downturn, shift or disruption, cost cutting may be essential to survive in the short term. My concern is that you may do this and survive the short term, only to cripple the organization in the longer term - witness GM, Chrysler, and Ford. Granted, even Toyota has had to reduce its staffing level over the past year, but their processes had built in buffers to manage that. They routinely use temporary staff en route to permanent employment, part-time staff, contractors, and have a large cash buffer, all counter measures for

use in a downturn, along with excellent practices. This will allow them to survive in the short term, and prosper in the long term, that prosperity likely continue at the expense of others.

So, back to the title of this article - Do we need more capacity (and reliability) in a world where there is a glut of capacity? My answer is a firm, unflinching yes. Reliability is the very foundation of effectively utilizing your assets at minimal cost and working capital, assuring higher gross profits. And to the point of the current economic situation, it provides options that would not otherwise be available for securing the short term, while positioning for the long term.

How do we achieve reliability? We must design, procure, store, install and startup, operate and maintain with reliability principles in mind.

Designing for reliability requires that we go beyond budgets and schedules and specifications and seek those operating similar equipment to help us understand and mitigate process and equipment failure modes and consequences - a life cycle cost approach.

Procuring for reliability requires that we go beyond price and specification, and think at a systems level about the impact of purchasing decisions on the operation of the plant - a total cost of ownership approach that includes operations, maintenance, and often energy costs.

Running an excellent storeroom requires that we go beyond having a catalogue of parts, ordering, stocking and checking out “stuff” for operations and maintenance, and run it like a business to support the customer - operations and maintenance - minimizing inventory while maximizing service levels; keeping things clean, tidy, well organized, and being fully integrated into an excellent maintenance planning process.

Installation and Startup requires that we, and our contractors, have precision standards for installation, startup and commissioning. These standards should make it easily recognizable that there are no defects in the system, or if present, quickly identify them for corrective action. It is critical to recognize that the highest risk of defect introduction, and failure, is at startup. Our processes here must be excellent.

Operation requires that we operate with care and precision, and operations must take the leadership role for reliability. Some 90% of production losses and 67% of equipment failures for existing equipment/process designs are controlled by operations. To expect maintenance to deliver reliability is like expecting the mechanic at the garage to deliver a reliable car. They can't, and won't. And besides, in most plants there are 3-15 times more operators than maintainers. How can one person assure reliability if the other 3 -15 don't?

Maintenance requires that we have disciplined precision practices, driven by a thorough understanding of failure modes and consequences, and working closely with operations to minimize defects using that precision, and driving their understanding of failure modes back through the system to its root cause, e.g., poor design, poor operation, poor maintenance, or some combination.

We must always be applying reliability principles to our assets and thus our business. Without reliability, we are at much greater risk for failure. With it, we have much greater probability for success. It always applies, but especially in these difficult times.

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