

Economies of Scale (Not so much)

By Dwight Comer CPIM CIRM CSCP

It was in 1938 when Franklin Delano Roosevelt had a brilliant bit of insight. He came to the realization that American aircraft manufacturers needed to ramp up to the point where they could deliver 1000 aircraft every month. He also saw the need for the logistical support such as enough trained pilots and crews to fly those 1000 aircraft being built every month. Still it would be nearly another four years before the US entered the war. It was most expedient that he didn't wait until 1942 to ramp up production because the war might have had a far different outcome. As a result of his insights, it virtually assured the Allies of victory. As US manufacturers produced an over-whelming superiority in air capability it was just a matter of when the Allies would win the war and not a matter of if.

Now what does any of that have to do with APICS and operations management, well the fact of the matter is that WWII was the last time that economy of scale manufacturing was a practical way to do business. Back then any aircraft they could roll out the door was a guaranteed sale. If they experienced a little obsolete inventory because of engineering revisions, well the volume of sales more than covered it. If they just kept producing the same thing day in and day out, profitability was assured.

That is not the way manufacturing is today and in fact hasn't been that way for decades. What makes this discussion relevant is the observation that many managers are still trying to figure out how to reduce costs through economies of scale thinking. A strategy that in today's global markets is for sure to leave advocates on a downward spiral. The markets today require mass customization. We cannot batch produce because of the demands of our customer's. Also, because of global competition, product life cycles are exceedingly short. Improvements in technologies and materials can require changes to product lines almost over night. Every change in the process is likely to leave significant amounts of material stranded as obsolete. This makes managing costs through economy of scale pretty dubious.

What makes trying to achieve cost control through economy of scale activities even more fascinating is that most companies really don't know all their actual costs. To those who might say, "Oh yes we do!" I will maintain they will lie about other things too. I'll give you one example where we generally don't know our costs. It's what Dr. Armand Feigenbaum referred to as the "hidden factory", this would be those activities which sort through and rework product that wasn't produced correctly the first time. I'm reasonably certain those activity are not captured on the work order, which means they are not being "pay pointed" (i.e. costed). And observation will generally show that the more economy of scale activity going on in the factory will result in more of the hidden factory.

Systems and operation management techniques need some fine-tuning and the latest ideas to keep pace with the competition. A focused effort on perfecting what it took to be successful last year is a sure fire way to fall behind. Instead of looking at last year's goals we need to figure out where we should be five years from now. Then we need to figure out how to get there. If at least some

of the conversation on the factory floor doesn't involve working on those long-term plans then the unfortunate truth is, we are falling behind.

The days when the same part would be produced day after day are over. There is even a good possibility that every single part (or assembly) in the production flow will be different. Quality systems have long since stopped focusing on measuring the part and placed the focus on statistical process control which means we are focused on the results of the process and not so much the dimensions of each part.

The honest truth of the matter is that we need to stay plugged into the latest ideas in operations management. Involvement in organizations like APICS are a hedge against being left behind in the supply chain. No one is fully in-tune with every trend that is happening in the global market. It requires an effort to constantly come up to speed to with new ideas. Our monthly Professional Development Meetings (called PDM's) are a great place to find out the latest information as well as a network of professional connections. In addition we routinely entertain joint meetings with other organizations where you have an opportunities to be exposed to additional new ideas as well as meet a new group of people.

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