

Synchronous Solutions

The continuous pursuit of excellence

Efficiency vs. Effectiveness Which is more important?



Actually, there is a significant difference in the two and one is much more important to manage than the other.

Efficiency is normally expressed as a percentage of the result that could ideally be expected. In other words, if the expected production of a particular resource is 10 units an hour and that resource actually averages 8 units an hour, it would be measured as 80% efficient. Another resource producing 12 units an hour would be measured as 120% efficient. In this context, a resource is defined as the machine and the operator combined.

It could be assumed that the latter resource is much more desirable. But, that is not always true. Consider the situation that the materials being processed by the 120% resource is already in abundance, i.e. there is a pile of completed work-in-process following it. Is it desirable to continue producing at that resource when there is already plenty of inventory in place? More specifically, is it correct to continue producing *efficiently* that which you do not need?

A common definition of *efficiency is doing things right*. Each individual step of a system can be measured against a standard. The focus of that approach is to encourage “doing things right.”

Consider this example: A process of ten operation steps has all of them at 120% efficiency except the last step which is at 80% efficiency. The average efficiency of

that process is pretty good at 116%. Nine steps at 120% and one at 80% will suggest a very efficient business operation.

1	2	3	4	5	6	7	8	9	10	Average
120%	120%	120%	120%	120%	120%	120%	120%	120%	80%	116%

But, of course, that system is clearly limited by that last operation. “A chain is only as strong as its weakest link.” That business operation is limited to 80% of its goal due to the demonstrated capacity of the last step.

So, what should be done? The answer may seem obvious, but I see it all the time. Functions desiring to maintain a given efficiency will continue to produce when it is only adding to an existing pile of inventory.

What if we take the person off of step one and place him at step ten to help its productivity? The person on step one would likely say: “What? I don’t know how to do step ten! I would be very inefficient there. Leave me at the operation that I know and where I am very efficient.”

You, as the manager should ask yourself this question: Are you better off producing *efficiently* that which you do not need, or are you better off producing *inefficiently* that which you do need? The answer is the latter.

Efficiency is defined as “doing things right.” Effectiveness is defined as “doing the right thing.”



I had the pleasure of working with Dr. Eli Goldratt, author of The Goal for many years during my tenure at Clemson University. He often said: “The most efficient plant is never the most profitable plant.” When I first heard him say that, I was surprised and confused. How could that be? My training and experience up to that point had been that higher efficiency was always desirable. He proved to me that this is not true.

Temporarily taking a person from an operation that has produced enough inventory to serve the production schedule and placing him at an operation that needs help will increase the overall productivity of the system. It may do so *inefficiently*, but the plant will be producing what is needed rather than focusing on a metric like efficiency that

may lead to the wrong behaviors. Effectiveness, *doing the right thing*, can actually increase profitability. That approach will also control system work-in-process inventory to a manageable level.

This is one of the greatest lessons I learned from working with Dr. Goldratt. He called it “global optima vs. local optima.” It is better to consider the needs of the global system (all ten steps) rather than to optimize the individual steps. I often suggest that production managers seek a higher altitude perspective of their business. Get up to a mezzanine or even on a high ladder to see the overall *flow* of materials through the system. You will see bottlenecks and inventory accumulation much more clearly. That perspective will help you make better process flow decisions.

Another way to put this is production management should be about keeping the material and information flowing rather than keeping people busy. That is, keeping people busy *doing the right thing*. Consider the well-run Subway Sandwich shop when it is busy during lunch time. The sandwich never stops moving. We can learn from that example.

Ultimately, it is all about continuous improvement. Forever.



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