Three persistent production planning myths, debunked

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***"Anything that can go wrong, will go wrong"*, this is the fatalistic conclusion of Murphy's law. Yet many planning problems can be traced back to three persistent myths.**

What common misconceptions are holding back better production planning? In this article, we debunk three of these production planning myths and provide pointers to potential solutions. In a series of follow-up articles, we will delve deeper into the solutions themselves. This article focuses specifically on complex production environments, specialising in small series and customisation.

Myth #1: 'All machines should always be operational'

Anyone walking through the production department with managers and visitors will most certainly get two questions: *'Are all the machines operational now?'* and *'Why isn't that particular machine running?'* A machine that is at a standstill is commonly associatied with inefficiency and poor planning.

But production planning should not ensure that all machines are running continuously. In fact, if they were, it’s more likely an indicator that something is wrong.

It is normal for production lines to run at a slower pace after a bottleneck, because there is not enough work to keep them busy. If work centers continue to run after a bottleneck, the production rate may have been reduced to the slower rhythm of the bottleneck.

Even if the bottleneck is yet to come, the story is the same: if all machines are running continuously, they may also have adjusted their speed to the bottleneck, or an unnecessary amount of intermediate stock is being built up.

The planner is not there to keep all machines running but ensures that customers receive their orders on time. If there is a temporary lack of work, it’s better to get these employees involved in a meaningful way: on improvement projects, training, maintenance tasks or other valuable activities. In the long term, these are often more valuable than the actual production.

Myth #2: ‘We need better data to plan ahead well’

Another complaint is that a lack of data prevents good planning. *‘If only we had better data, then we would be able to plan well,*’ is a common excuse.

In environments with many small series and customised production, it is difficult to accurately estimate production times. But that does not have to be an insurmountable problem. The total workload of a work center is usually calculated by adding up the individual production times. The 'law of large numbers' compensates for any incorrect estimates of production times. Because the production time of an order comprises approximately 5% of the total lead time, the impact of an incorrect estimate on the delivery time is relatively small anyway.

However, systematic underestimation of production times is a problem, as it can lead to persistent backlogs. The good news is that such errors are often easier to detect and correct.

Myth #3: ‘An advanced planning tool will solve all our problems’

Many planning problems are attributed to the limitations of the planning tool. In the past, companies have tried to solve their planning problems by using more advanced tools, such as Advanced Planning Systems (APS). These complex systems take into account a multitude of factors (capacity, materials, set-ups, etc.) to create an optimized detailed plan.

Although this seems perfect in theory, this APS approach often does not work in environments with many small series and customization (high-mix, low-volume). These systems aren’t very good at dealing with unforeseen events , such as machine failure, absences, stock shortages, late deliveries or rush orders.

The more detailed the planning, the greater the chance that the planning will no longer be correct. Instead of wasting time on replanning, it is more important to respond flexibly to deviations and to efficiently absorb disruptions.

It is therefore better to aim for simplified ‘high-level’ planning, supplemented with a system that detects deviations in time. An important role is reserved here for so-called ‘shop floor control’ systems, which provide real-time insight into the status on the shop

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