Solve planning challenges by reducing Work in Progress (WIP)

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Why reducing WIP streamlines production planning

WIP, or Work in Progress/Process, refers to all unfinished goods at various stages of production, somewhere between raw materials and finished products. WIP is a critical concept in manufacturing: better insights into WIP lead to smoother planning and production processes.

In the first article of this three-part series, we debunked common myths about production planning. In this second article, we dive deeper into the benefits of reducing WIP. The third part will explain how to minimise WIP.

Why high WIP slows down production and increases costs

The lead time of a production order significantly increases with higher WIP levels. Orders often sit idle, waiting for processing, causing delays in production flow. This phenomenon is explained by Little’s Law: the more WIP, the longer the production lead time.

Longer lead times also become harder to predict. High WIP creates highly variable lead times, making it difficult for planners to estimate when an order will be completed.

As a result, planners are often tempted to release orders as early as possible in the hope they'll be finished on time. Releasing orders too soon only adds to the WIP burden.

Excessive WIP is typically accompanied by waste, of products and space, and increased searching and walking times. This reduces effective production capacity and extends delivery times. In fact, companies that reduce WIP by 80% often see a 20% productivity increase.

WIP also requires working capital, as materials and labour costs must be pre-financed. By reducing WIP, companies can free up capital to invest in other areas, such as equipment upgrades.

The benefits of reducing Work in Progress (WIP) in manufacturing

Reducing Work in Progress (WIP) in production offers numerous benefits, including cost savings, improved cash flow, and greater production efficiency.

- **The most urgent orders are completed faster**: With fewer orders in circulation, operators are less likely to "cherry-pick" tasks.
- **Idle workstations reveal bottlenecks**: Initially, idle workstations may seem problematic. However, they highlight where bottlenecks are, allowing operators to step in and address them. As a result, output increases, customer deliveries are faster, and productivity grows.
- **Shorter, more stable lead time**s: With less WIP, the production process becomes simpler and easier to manage, a "black box" with predictable lead times.
- **Later order releases improve material availability**: This gives suppliers more time to deliver materials on time, reducing rescheduling work.
- **Greater flexibility for changes**: Until an order is released, changes can be made more easily since only order information is affected. Once production starts, changes become much more disruptive.
- **Reduced risk of damage or obsolescence**: Lower WIP levels mean fewer defective or outdated products. Rework is minimised, lead times are shortened, and delivery times stabilise.
- **Simpler capacity planning**: With lower WIP, lead times are shorter, eliminating the need for complex "lead-time offsetting." This reduces planning errors and streamlines production.

Streamline your production by reducing WIP: get started!

You too can address the factors contributing to high WIP levels, achieving smoother operations, cost savings, and better responsiveness to customer demands.

Questions? Feel free to ask our experts!

Contact our expert Pascal Pollet

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