END4830 LEAN PRODUCTION

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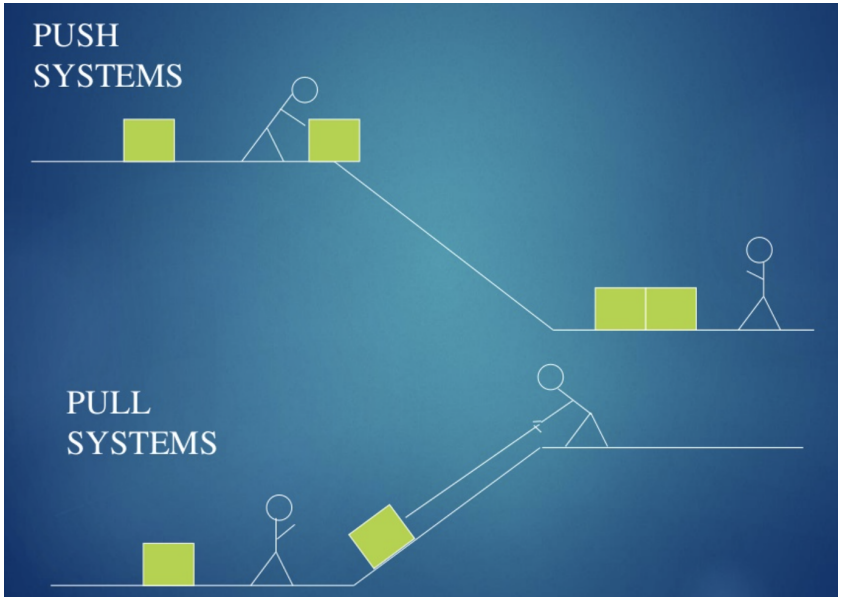


Lean Thinking Principles

Pull

Push Production

Push Production

- In push production, the materials are processed and proceeded to the next stage without considering the capacity and speed of the next process.
- The push production technique considers success & efficiency to produce as much as possible at the highest possible speed.

- In push production, because the units produce at maximum speed separated from each other, stock accumulation occurs between stations because machine speeds are not the same.

The 'push' approach leads to 'overproduction', one of the ‘8 wastes’!

Pull System of Production

A system in which the order to make and deliver parts at each workstation in the production sequence comes from the downstream station that uses those parts:

- JIT is based on a pull system of production control
- Alternative is a push system in which parts are produced at each station irrespective of the immediate need for those parts at the downstream station

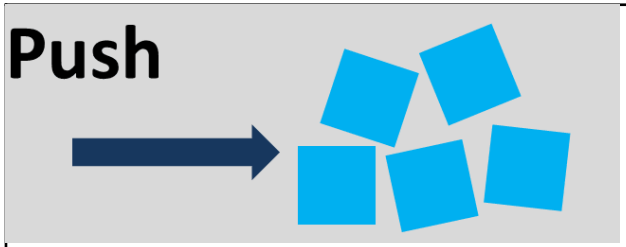
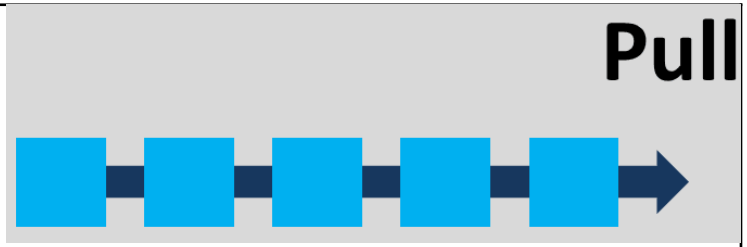
Pull Production

Pull Production:

It is not produced at continuous maximum speed, but only as the customer orders or the next step in the process.

In this way...

- significant improvement in stock quantities and thus stock keeping costs.
- process steps work in coordination with each other, not with the 'silo' logic.
- eliminates the need for production planning and improves compliance with the delivery schedule (on-time delivery).
- control passes to the customer itself (internal or external).

Push	Pull
	
to produce as much as possible to the stocks and try to sell to the customer.	***to produce the product the customer wants, at any time and quantity.***
Push	**Pull**
• production is planned according to the anticipated need.	• production is planned according to actual consumption / sales.
• each process operates according to its own production plan.	• each process works according to the requirement of its own customer.
• speed varies according to capacity differences.	• the critical process determines the speed of the entire system.
• work in large parties.	• work in small parties.
• communication is limited.	• visual communication is provided.
• there is estimated / delayed information.	• has precise information in real time.
• flow time is prolonged.	• the flow time is shortened.
• inventories increase.	• inventories are reduced.
• wastes increase.	• there is minimum waste.

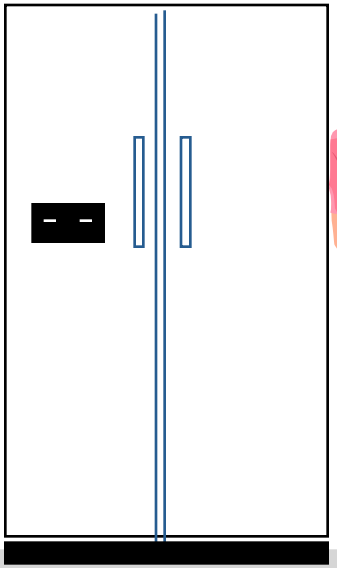
Pull

- What the customer wants,
- At the desired time and in the desired amount,
- Triggering by the 'signal' from the customer process,
- Synchronize each work step with the speed of the customer step.

Customer Pull

- Requirements
  - Fresh
  - Available
  - Brand
  - Price
  - Size

On Time Delivery
FIFO
Rotate Stock
Quality
Cost



Demand

Capacity

Supply

- Requirements
  - Communications
  - Specifications
  - Expectations
  - Timing