Chapter 3

↳ Process capacity

↳ To match supply with demand

↳ We need to determine bottlenecks

↳ Approach → Find / Assess the path of the product

↳ Flow unit.

Flow Diagram

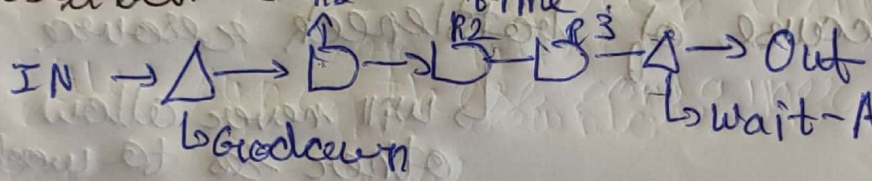
↳ Activities + Inventories.

↳ Process

↳ Consume resource.

↳ Wait time.

Diff resource based acti. ← R1



* Consider order size while processing capacity

1 ord = 2 doz or 10 doz

↳ Littles law :

Avg Inv = Flow rate × Avg time.

↳ in process

↳ Flow rate.

Process Capacity = Min { R1, R2, R3 ... Rn }

Flow rate = Min { Input, demand, Process capacity }

↳ current + Seasonal Inventory.

Profit.

⇒ Process should be demand-constrained with optimal demand level.

⇒ Time to produce certain order.

↳ X × $\frac{1}{\text{flow rate}}$ (Process in action + didn't start from zero)

↳ Else 0 + 0 + (X − 1) × $\frac{1}{\text{flow rate}}$

Supply Constrained

Flow rate helps to determine Utilization of a process.

Utilization → # Produced / # Total Capacity

1) If demand ← constrained (flow_rate i < flow_rate max)

There can be other inspection, breakdown, maintainence etc related issues.

↳ sub-resources.

** Utilization of sub-processes gets affected (lowered) - because of bottleneck resource.
↳ will never allow other res to work at full capacity

* FLOW UNIT → * Product Mix → Diff Processing time
↳ Order size
↳ for flow rate.
↳ Application / hr
↳ Long application
short application

Processing time → Capacity
~Flow rate

** Introduction to Que - Priority theory