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Manufacturing Master Data

Presented By: Amol Sutar

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Agenda

- Manufacturing Basic Data
  - Item Master
  - Bill of Material
  - Work Center
  - Routing
  - Planning Parameters
    - Manufacturing Lead Time
    - Purchase Lead Time
    - Safety Stock

Item Master

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Item Master

- An item master is a record of all the key information about a particular item of inventory.
- Contains attributes like item description, specifications, size, weight, and manufacturing information
- Cost Data
  - Standard Cost (Direct & Indirect cost)
- Inventory Information
  - Current Stock Levels, minimum order quantities & lead times
- Supplier Information
  - Details about supplier

Item Master

Item Master						
	Finished Goods	**Raw Materials**	**Semi Finished Goods**	**Tools & Spare Parts**	**Expense Item**	**Fixed Asset**
Item Code	FG01	RM01	SFG01	TS001	EX001	FA001
Description	FG Description	RM Description	SFG Description	T&S Description	Electricity Bill	Dell Laptop
Item Type	FG	Component	Assembly	Tools	Expense	Computer
Item Group	Finished Product	Production	Semi Finished Product	Direct Material	Indirect Material	IT
Manufactruing Lead Time	2	0	2	0	0	0
Purchase Lead Time	0	4	4	1	0	0
Supplier	Supplier 1	Supplier 2	Supplier 3	Supplier 4	Supplier 5	Supplier 6
Buyer / Planner	John	Chris	John	Tom	Amy	Amy
Cost	150 $	10$	100$	2$	0$	50$
Safety Stock	5	100	10	100	0	0

Item Master


Inventory
Production
Purchasing
Financials
Production Planning
Item Master
Collaboration
Quality
Logistics
Sales
Demand Planning

Item Master Example

Item Master Example

Bill of Material

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Bill of Material

- A Bill of Materials (BOM) is a structured list that details all the raw materials, sub-assemblies, components, and parts needed to manufacture a product.
- Comprehensive Inventory
  - It lists every item required, from raw materials to finished sub-assemblies.
- Quantity Specifications:
  - It specifies the exact quantities of each component needed.
- Hierarchical Structure:
  - BOMs can be single-level, showing only the direct components, or multi-level, outlining the relationships between sub-assemblies and their components.

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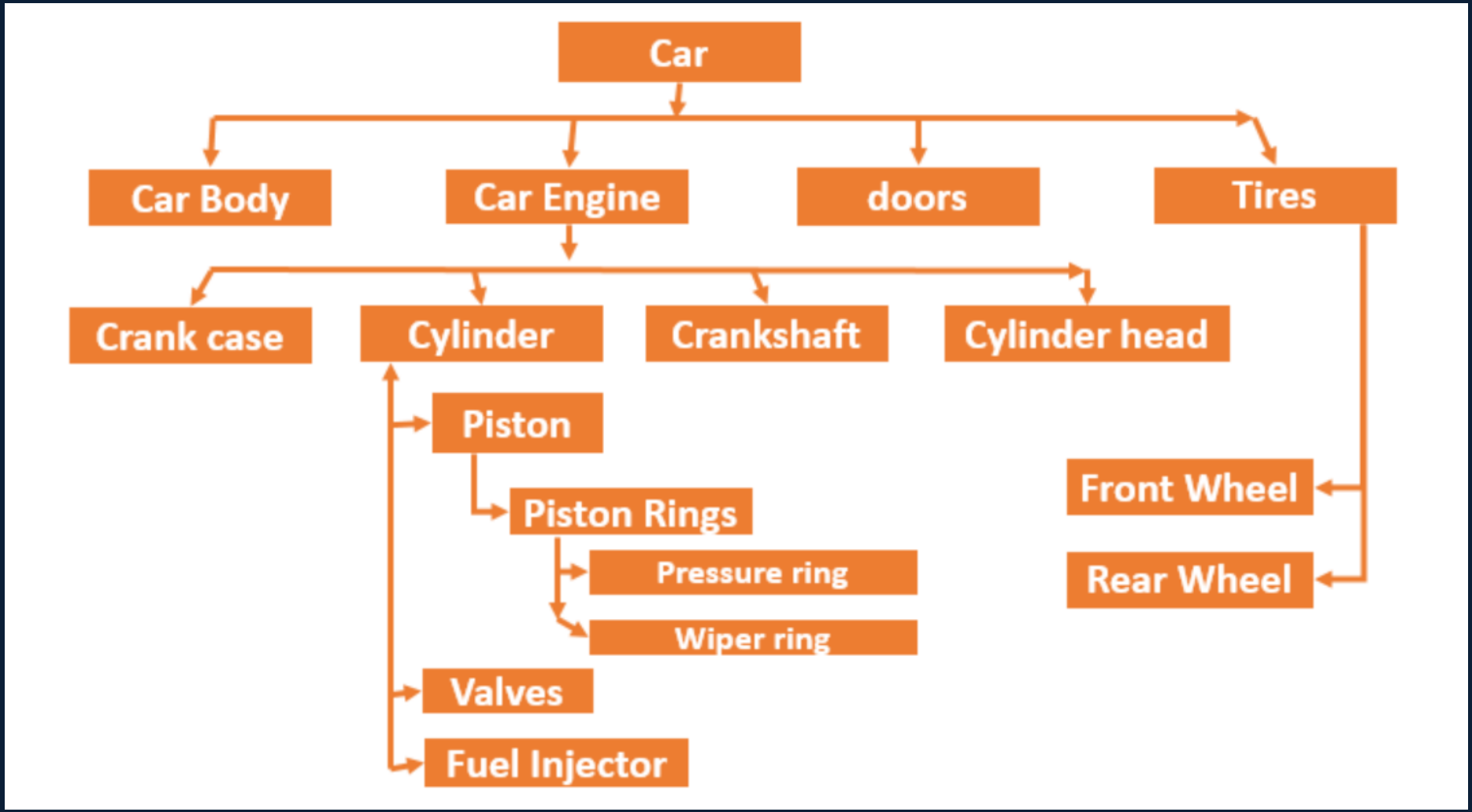
Bill of Material



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Bill of Material

Item	Part Number	QTY	Unit QTY	Description
1	10-001	1	Each	Rear Assembly
2	20-014	1	Each	Front Assembly
2.1	20-019	1	Each	Cab Drivetrain
2.1.1	400-201	2	Each	Electric Drive Motor
2.1.2	400-151	1	Each	Cab Undercarriage
2.1.3	400-149	2	Each	Cab Pivot
2.1.4	20-021	1	Each	Rear Attachment
2.1.4.1	400-175	1	Each	Rear Attachment
2.1.4.2	200-177	1	Each	Bracket
2.1.5	400-148	1	Each	Cleaner Conduit
2.1.6	400-018	1	Each	Control Box
2.1.7	400-034	2	Each	Wheel and Tires
2.1.8	400-187	2	Each	Front Hub
2.1.9	400-188	1	Each	Cab Fan Assembly
2.2	20-013	1	Each	Heads
2.3	20-029	1	Each	Cab

Work Center

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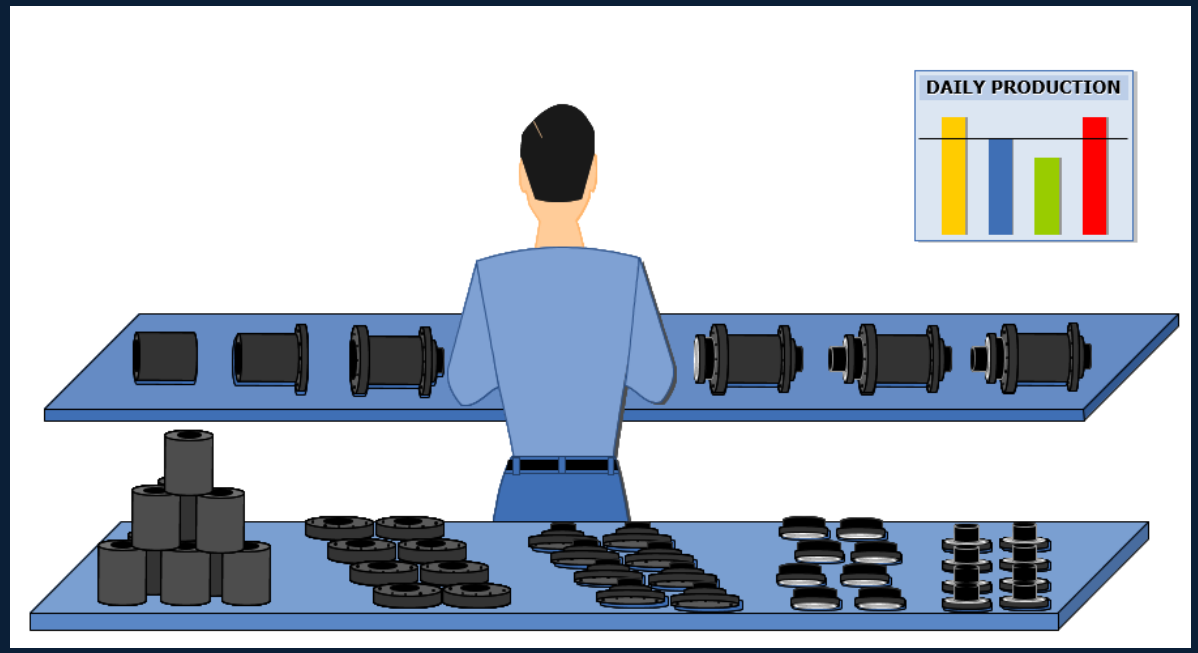
Work Center

- A work center is a physical or logical location where work is performed, often within a manufacturing or production environment.
- Physical or Logical:
  - Work centers can be a defined physical area (like a specific workshop) or a logical grouping of resources (like a team of employees performing a specific task).
- Resource Management:
  - They allow for the allocation of resources (machines, labor, materials) to specific tasks or operations.
- Scheduling and Routing:
  - Work centers are used to schedule and route operations, ensuring that tasks are performed in the correct sequence and at the appropriate location.

Work Center example

Work Center example



Routing

Routing

- Routing refers to the sequential order of operations needed to transform raw materials into finished products
- Defining the Production Flow:
  - Routing maps out the step-by-step process of manufacturing, from initial raw materials to the final product, ensuring that each task is performed in the correct order.
- Resource Allocation:
  - Routing also helps determine which work centers, machines, and labor resources are needed for each operation, facilitating effective resource planning and allocation.

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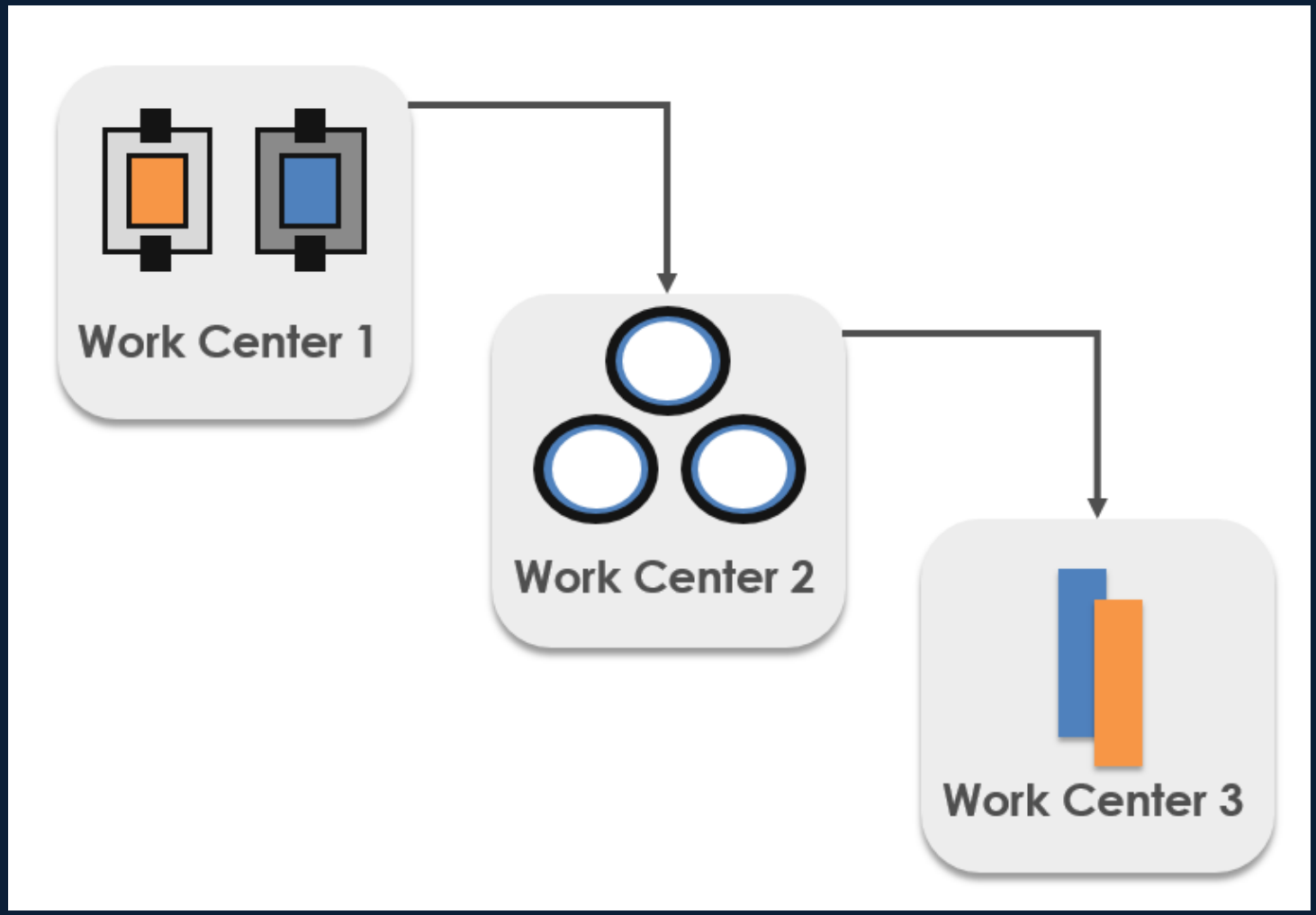
Routing



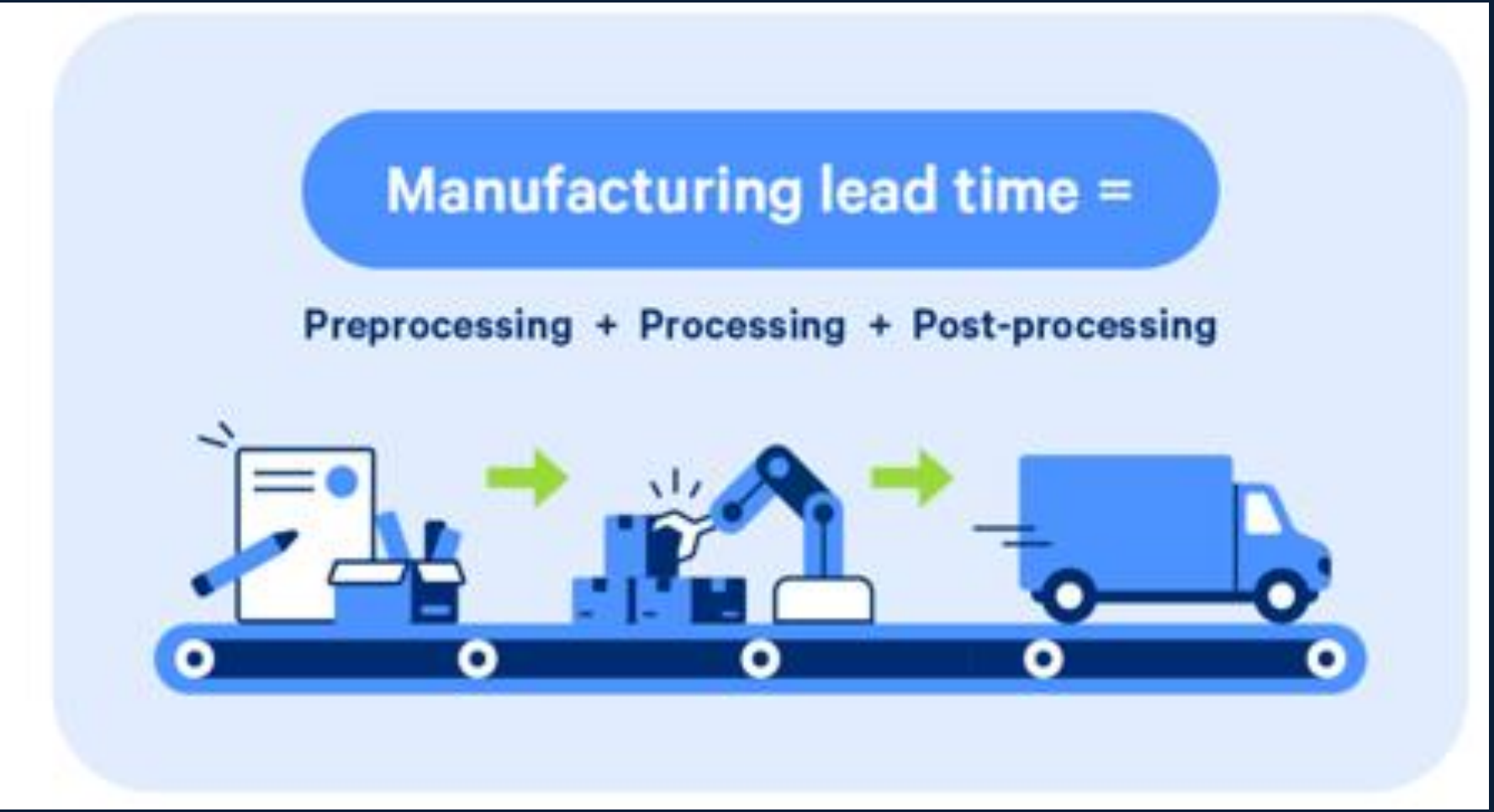
Routing

Planning Parameters

Planning Parameters

- Manufacturing Lead Time
  - Manufacturing lead time is the total time it takes for a product to move through the entire production process, from initial order placement to final shipment.
  - It includes order preparation, Sourcing & Procurement, Production, Quality control, Packaging & shipping.
- Purchase Lead Time
  - Purchase Lead time refers to the time it takes for a company to receive an order after it has been placed with a supplier.
- Safety Stock / Capacity
  - Safety stock, also known as buffer stock, is extra inventory held to mitigate the risk of stockouts due to unforeseen circumstances, such as demand fluctuations or supply chain disruptions

Manufacturing Lead Time



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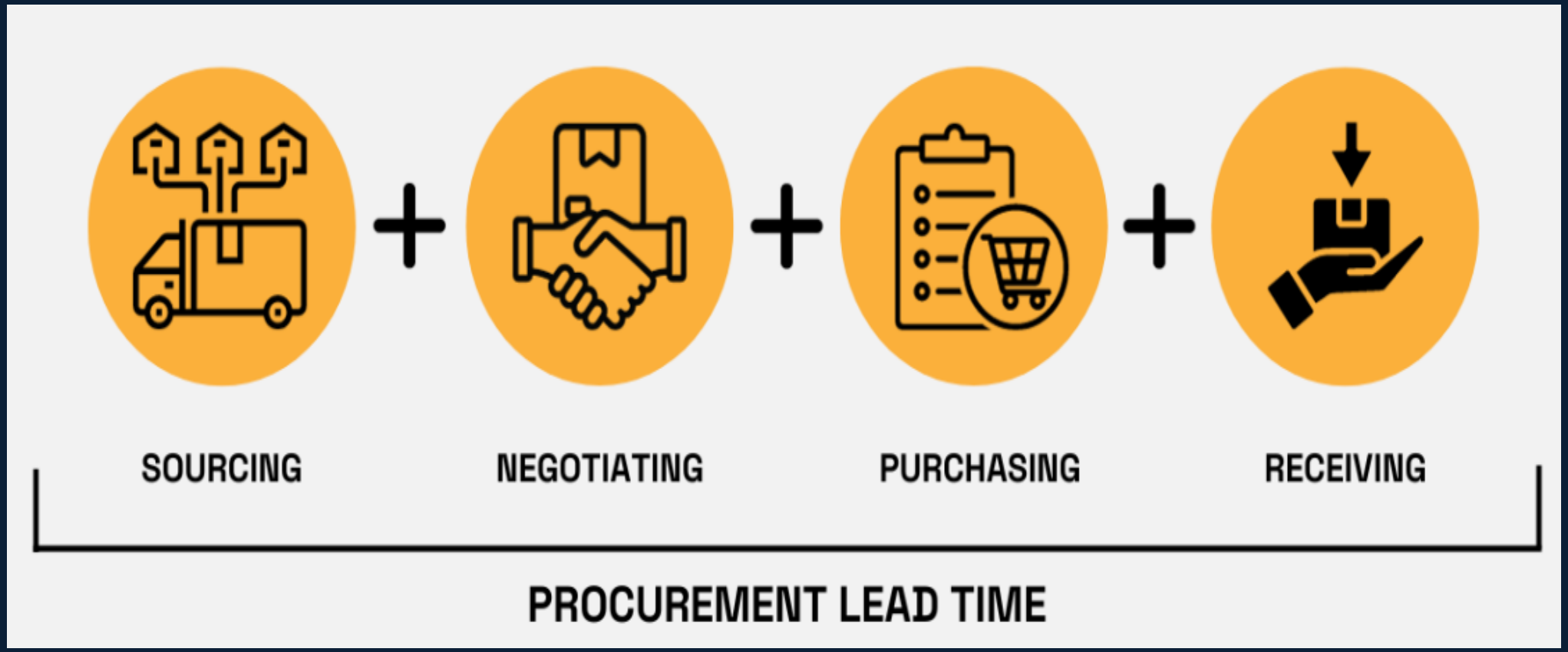
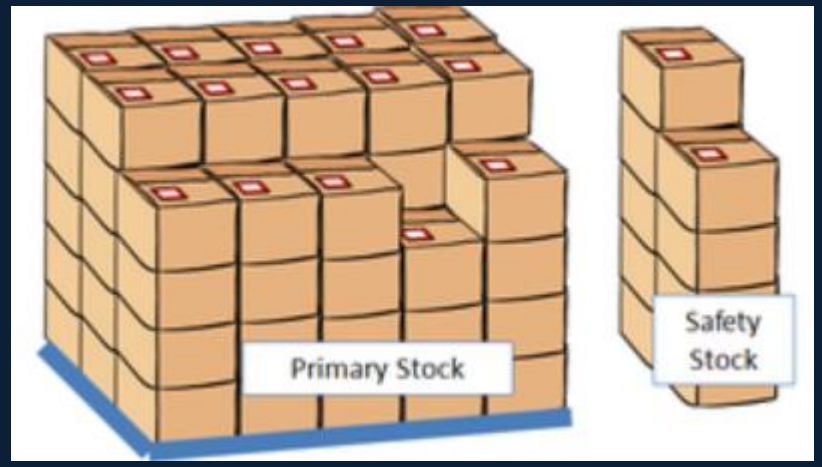
Purchase Lead Time



Safety Stock / capacity



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Questions ?

Thank You