Understanding BOM (Bill of Materials) in Inventory Control

A **Bill of Materials (BOM)** is a structured list of components and raw materials required to manufacture a finished product. It serves as the foundation for production, inventory management, and cost control.

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1. BOM Structure: Items & Components

A BOM consists of **two primary elements**:

- **BOM Item (Finished Product)** – The final product being manufactured or assembled.
- **BOM Components (Raw Materials)** – The individual parts or materials used to build the finished product.

For example, if you're manufacturing a **wooden table**, the BOM would look like this:

BOM Item (Finished Product)	BOM Components (Materials)	Quantity Required
Wooden Table	Wooden Planks	4
	Table Legs	4
	Screws	16
	Varnish	1 Liter

Types of BOM Configurations

1. **Single-Level BOM**
    - A simple list where raw materials are directly used to build the final product.
    - Best for straightforward products with no subassemblies.
2. **Configurable BOM (Kits & Variants)**
    - Used for products that have multiple variations or options.
    - Example: A **custom-built PC** with different CPU, RAM, and GPU configurations.

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2. Raw Material Consumption via Manufacturing (Work Orders)

Once the BOM is defined, the manufacturing process follows these steps:

Step 1: Creating a Work Order

A **work order (WO)** is generated when production begins. It defines:

- The **BOM item** to be produced.
- The **quantity** to be manufactured.
- The **raw materials required** from inventory.`

Example: If you need to produce **100 wooden tables**, the system will calculate the required materials:

- Wooden Planks: **100 × 4 = 400**
- Table Legs: **100 × 4 = 400**
- Screws: **100 × 16 = 1,600**
- Varnish: **100 Liters**

Step 2: Material Issue (Picking)

- The system will **reserve and issue** raw materials from inventory.
- If stock is insufficient, a **purchase order** is to be triggered in Sage.

Step 3: Production Process

- Workers use the issued materials to **manufacture the product**.
- Quality checks and **scrap management** occur during production.

Step 4: Completing the Work Order

- Once production is done, the system **records the finished product** in stock.
- Raw materials are **consumed**, and inventory levels are updated.
- Any leftover scrap or wastage is recorded.

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3. Key Inventory Control Features for BOM & Manufacturing

To manage BOMs efficiently, an My Data Fusion includes:

✓ **BOM Explosions** – Breakdown of raw materials required for a production run.
✓ **Work Order Tracking** – To monitor the production progress.
✓ **Stock Reservations & Allocations** – Ensuring raw materials are available before production.
✓ **Costing & Pricing** – Tracking material costs to calculate the final product cost.
✓ **Kit Assemblies & Disassemblies** – For managing bundled items or modular products.