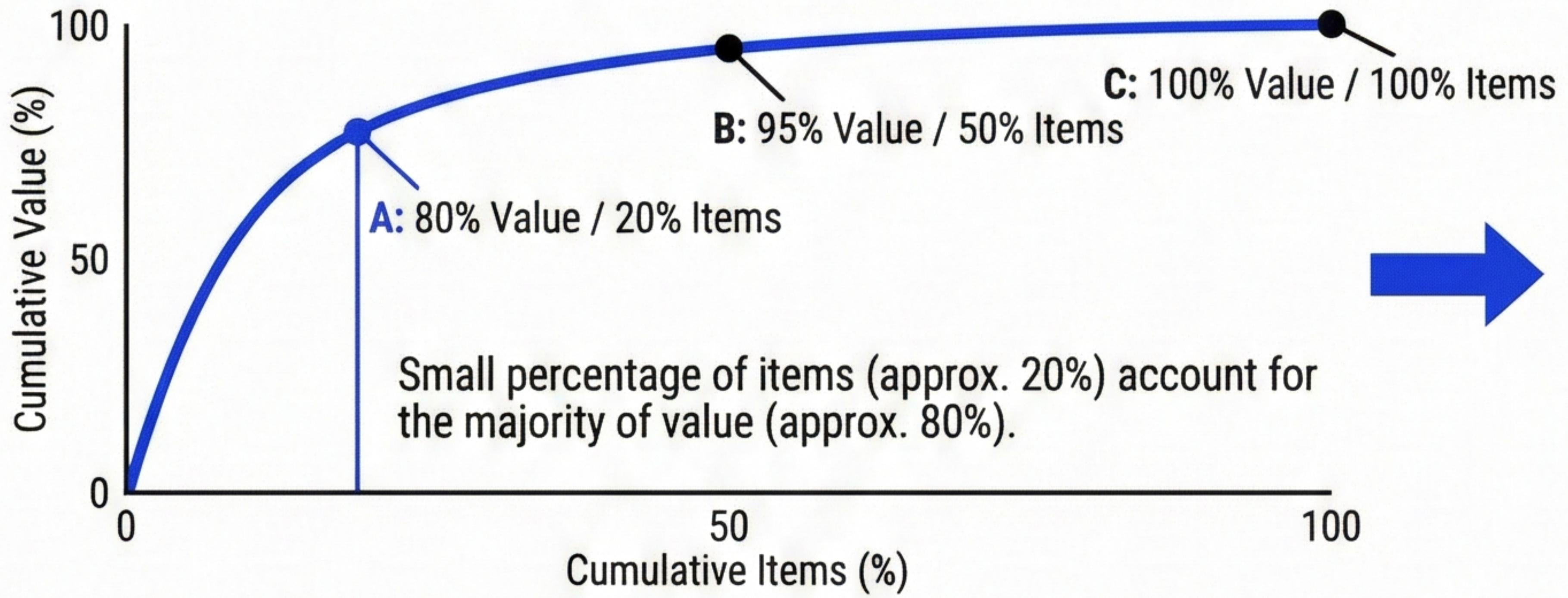


01 EN Analysis ABC in Supply Chain	2
02 EN Analysis XYZ in Supply Chain	3
03 EN Analysis Days of Inventory	4
04 EN Analysis Days of Inventory for production planning	5

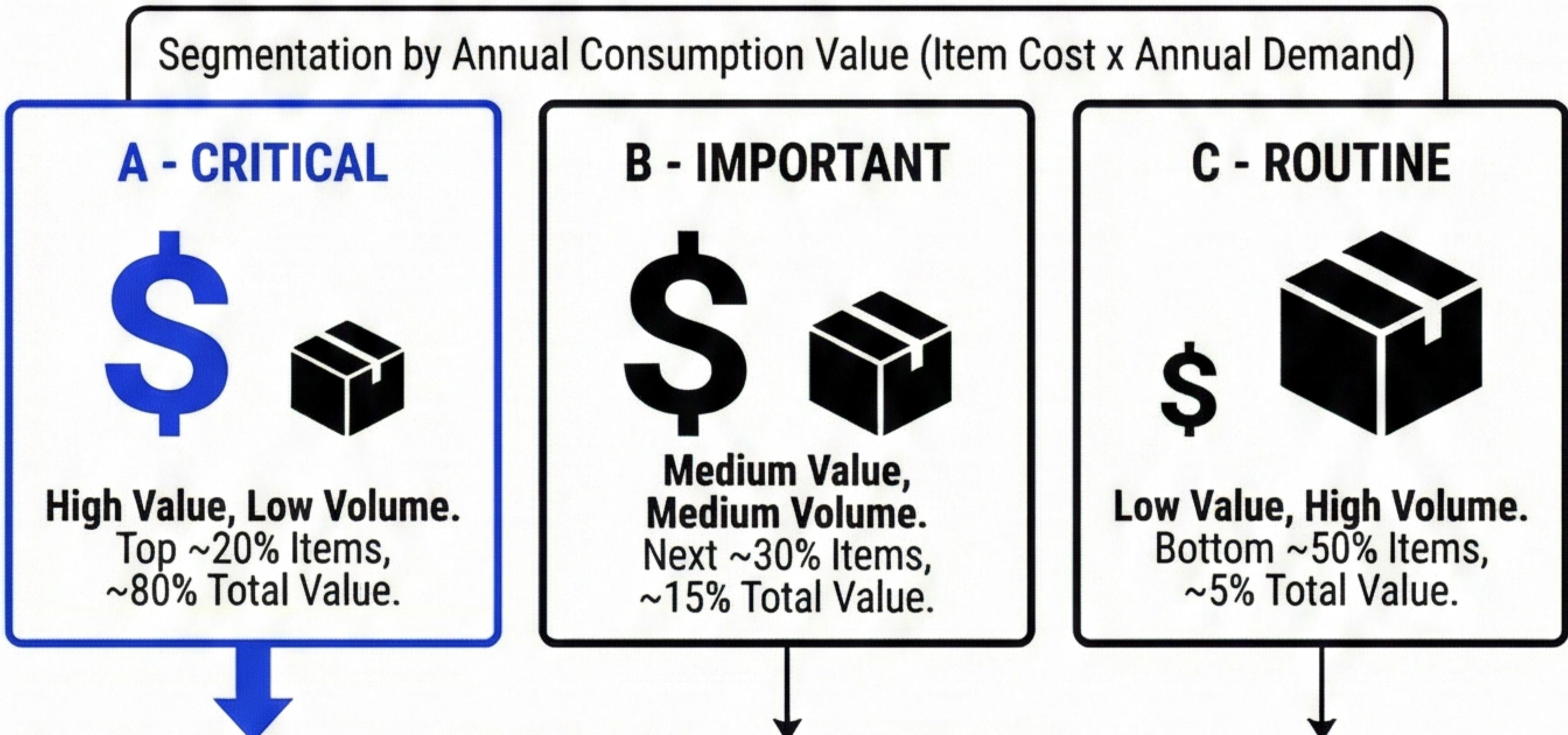
# ABC ANALYSIS IN SUPPLY CHAIN: STRATEGIC INVENTORY SEGMENTATION

Based on the Pareto Principle (80/20 Rule) for Optimizing Resource Allocation.

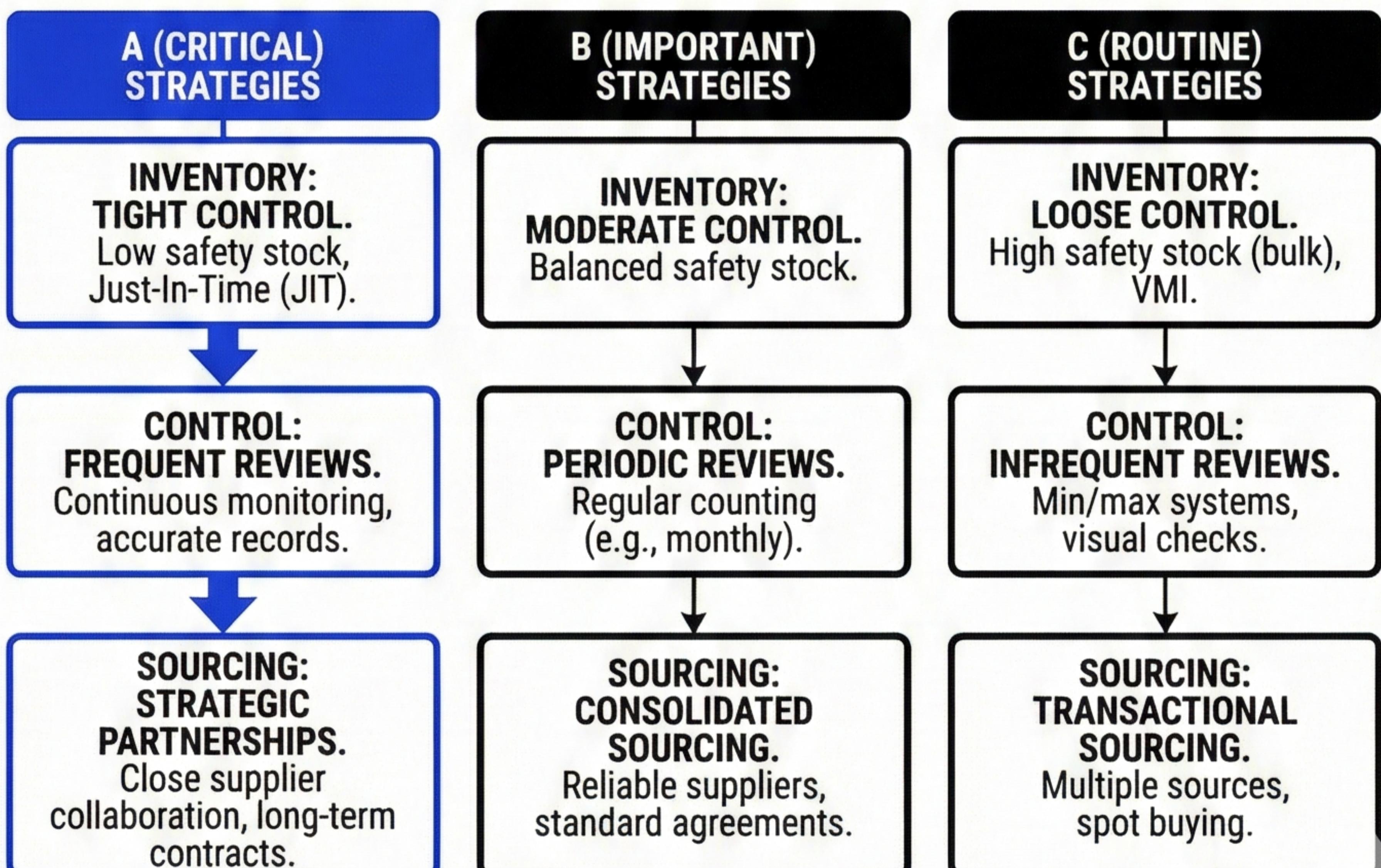
## 1. CORE PRINCIPLE (PARETO)



## 2. ABC SEGMENTATION (THE MATRIX)



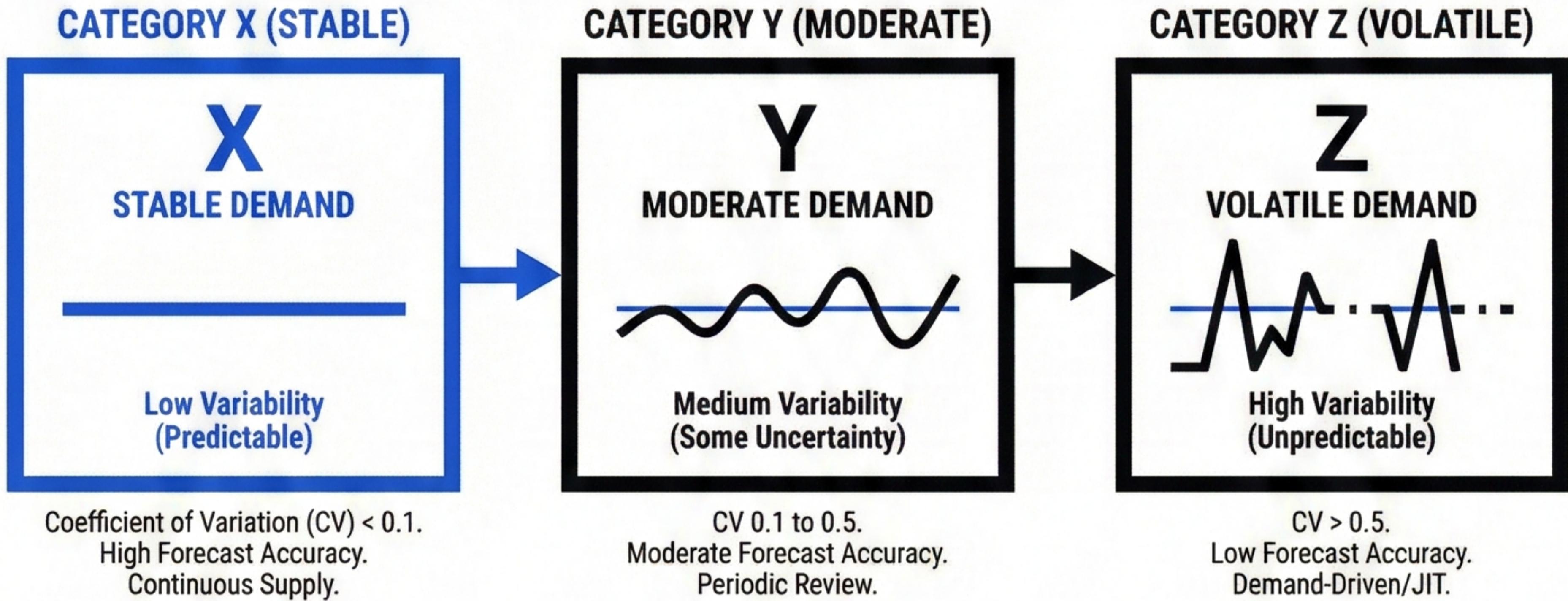
## 3. MANAGEMENT STRATEGIES (ACTION PLAN)



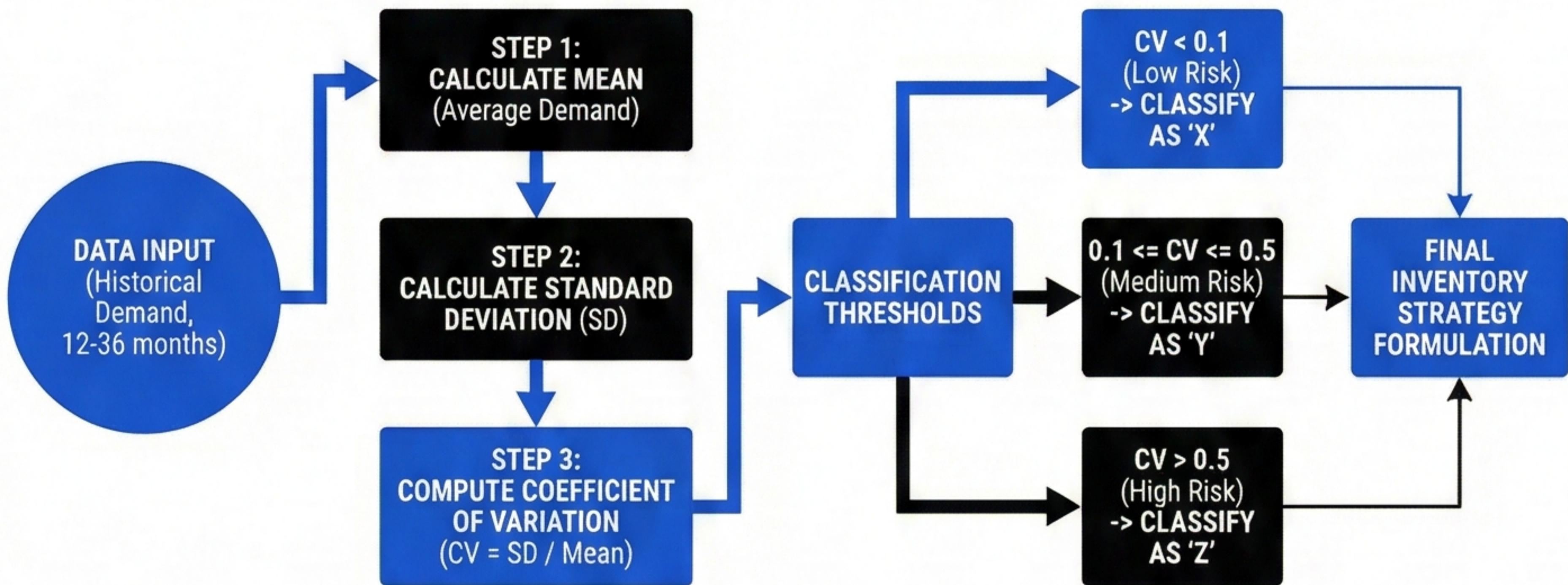
# XYZ ANALYSIS IN SUPPLY CHAIN: DEMAND VARIABILITY & INVENTORY MANAGEMENT

Cognitive Load Management for Management University Students: A Scientific Approach to Classification & Strategy

## 1. CORE CONCEPT: CLASSIFYING BY DEMAND PREDICTABILITY



## 2. ANALYSIS PROCESS: CALCULATION & CLASSIFICATION FLOW



## 3. STRATEGIC IMPLICATIONS: INVENTORY & PROCUREMENT MANAGEMENT

	X	Y	Z
INVENTORY STRATEGY	Minimize Buffer Stock. Lean & Continuous Replenishment. High Service Level Target.	Safety Stock for Variability. Periodic Reorder Point (ROP) Systems.	No Stock or Minimal Safety. Make-to-Order (MTO) or Vendor-Managed Inventory (VMI).
PROCUREMENT APPROACH	Long-term Contracts. Strategic Partnerships. Automated Ordering.	Frame Contracts. Flexible Agreements. Batch Ordering.	Spot Market Purchasing. Agile Sourcing. Demand-based Trigger.
CRITICAL RISK (VERMILION ALERT)	<b>SUPPLY DISRUPTION</b> (Single Source Risk).	<b>STOCKOUTS &amp; OVERSTOCK</b> (Forecast Error).	<b>OBSOLESCENCE &amp; HIGH HOLDING COST</b> (Dead Stock).

## 4. INTEGRATED DECISION MATRIX (ABC-XYZ)

	A (High Value)	B (Medium Value)	C (Low Value)
X (Stable)	AX: Strategic Partner, Lean & Stable (Focus: Efficiency)	BX: Standard Item, Routine Mgmt (Focus: Cost Reduction)	CX: Low Value, Automate (Focus: Low Effort)
Y (Moderate)	AY: Critical Item, Manage Closely (Focus: Availability)	BY: Normal Item, Periodic Review (Focus: Balance)	CY: Low Value, Bulk Purchase (Focus: Min. Admin)
Z (Volatile)	<b>AZ: High Value, High Risk</b> (Focus: Risk Mitigation & Agility)	<b>BZ: Problematic Item, Watch Closely</b> (Focus: Control)	<b>CZ: Low Value, Eliminate/On-Demand</b> (Focus: Rationalization)

# Days of Inventory (DOI): A Measure of Inventory Liquidity

**Days of Inventory** – also called days of supply or days of sales, is a forward-looking supply chain measure of the number of days of business operations that can be supported with the inventory on hand. The information of for how long our supply will last assumes that no more inventory is bought or produced.

## 1. CORE CONCEPT & DEFINITION

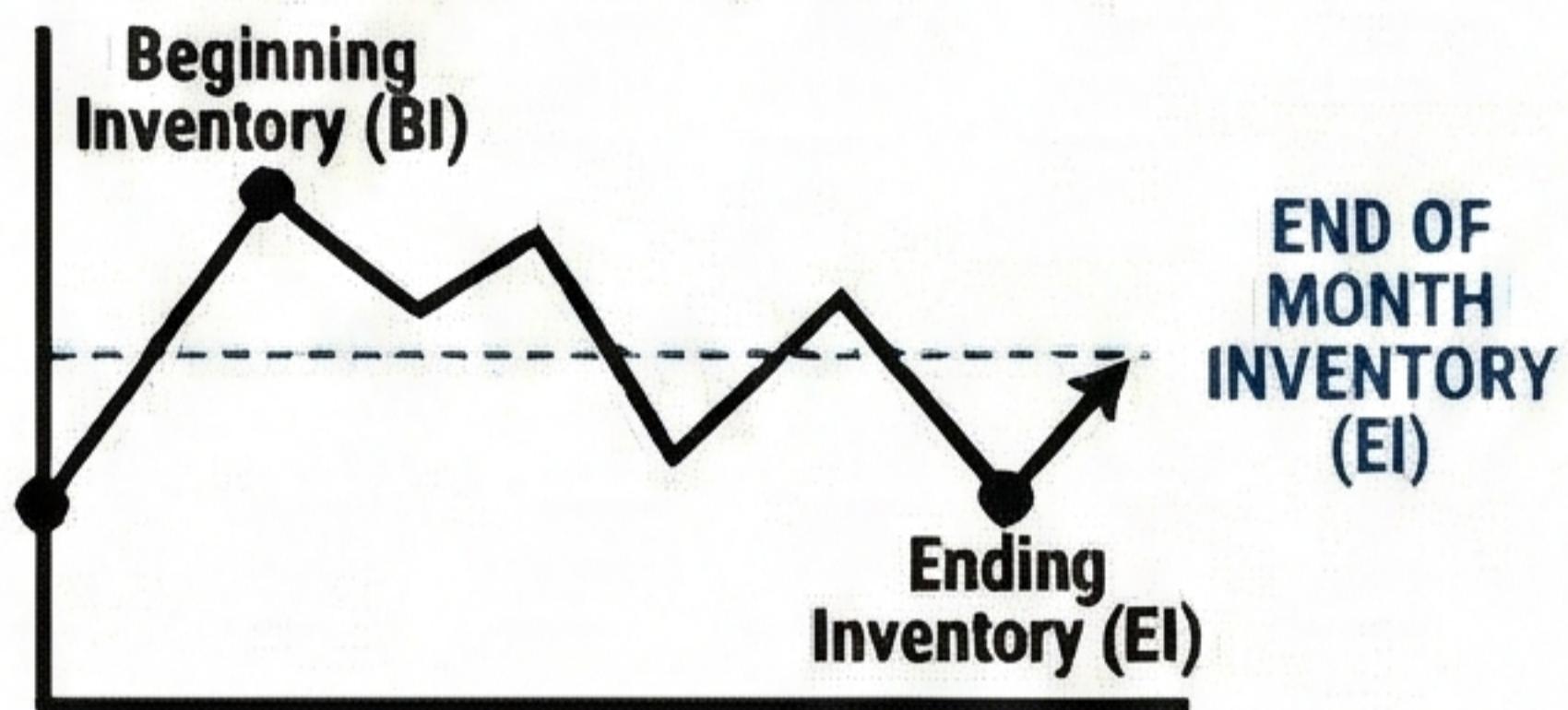


**Days of Inventory (DOI)** estimates the average number of days a company holds inventory before it is sold. It indicates operational efficiency.

## 2. THE FORMULA & COMPONENTS

$$\text{DOI} = \left( \frac{\text{End of Month Inventory}}{\text{Monthly Sales}} \right) \times 30$$

**END OF MONTH INVENTORY**  
(Snapshot at period end)



**MONTHLY SALES**  
(Total sales in period)



## 3. INTERPRETATION & STRATEGIC IMPLICATIONS

**LOW DOI**  
(EFFICIENT & AGILE)

**SHORT HOLDING PERIOD** →

↑ **FASTER CASH FLOW**

**STRATEGY: LEAN MANAGEMENT**

Reduced storage costs,  
lower obsolescence risk.  
Requires robust supply chain.

**HIGH DOI**  
(INEFFICIENT & RISKY)

**LONG HOLDING PERIOD** →

↓ **TIED-UP CAPITAL**

**RISK: OVERSTOCKING**

Increased holding costs, higher risk of  
obsolescence/spoilage.  
Indicates poor sales or excess production.

## 4. MANAGEMENT OBJECTIVE: BALANCE & OPTIMIZATION

**OPTIMAL DOI:**

Balance between minimizing costs and meeting demand without stockouts.

**EFFICIENCY**  
(Low DOI)



**AVAILABILITY**  
(Safety Stock)



# DAYS OF INVENTORY (DOI) ANALYSIS: SALES FORECAST & PRODUCTION PLANNING

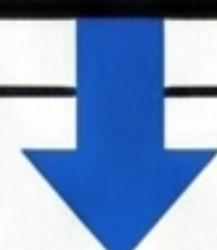
Aligning Inventory Levels with Future Demand for Efficient Production  
Scheduling & Liquidity Management.

## MODULE 1: CORE FORMULA & DEFINITION

### THE METRIC: DAYS OF INVENTORY (DOI)

$$\text{DOI} = \left( \frac{\text{CURRENT INVENTORY LEVEL}}{\text{MONTHLY SALES FORECAST}} \right) * 30 \text{ DAYS}$$

Measures the number of days current stock can support future operations, based on a *forward-looking* monthly sales forecast. It links current assets to future demand.



## MODULE 2: THE PLANNING CYCLE FLOW (Monthly Integration)

### THE INTEGRATED PLANNING PROCESS (Monthly Cycle)

#### 1. MONTHLY SALES FORECAST (Demand Input)

Data Source: Predictive Model / Market Analysis.  
Output: Forecasted Unit Sales for Next Month.



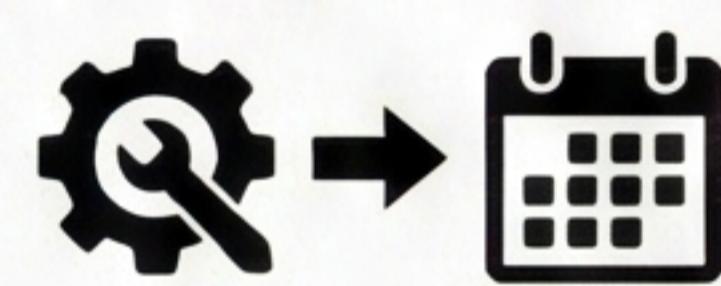
#### 2. DOI TARGET & CURRENT INVENTORY (Buffer Analysis)

Input: Current Stock Level,  
Target DOI Range.  
Action: Compare Actual DOI vs. Target.



#### 3. PRODUCTION PLANNING (Output Decision)

Decision: Determine Production Quantity.  
Goal: Maintain DOI within Target Range.



## MODULE 3: DECISION LOGIC & SCENARIOS (Actionable Insights)

### DECISION LOGIC: MATCHING SUPPLY TO FORECAST

#### SCENARIO A: DOI > TARGET (Surplus)



Actual Inventory (High)



Monthly Sales Forecast (Lower)

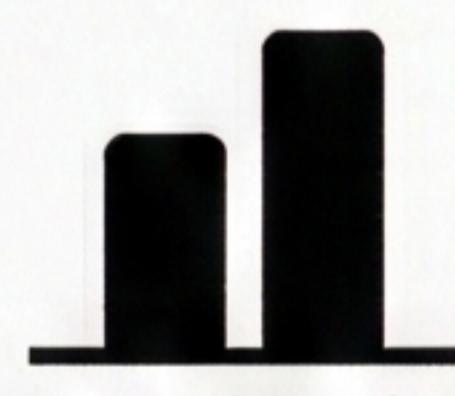
ACTION: **REDUCE PRODUCTION / HOLD**

Risk: Excess Holding Costs, Obsolescence.  
Focus on Sales.

#### SCENARIO B: DOI < TARGET (Shortage)



Actual Inventory (Low)



Monthly Sales Forecast (Higher)



ACTION: **INCREASE PRODUCTION / EXPEDITE**

Risk: Stockouts, Lost Sales, Service Level Drop  
Focus on Supply.

## MODULE 4: STRATEGIC IMPLICATION & OUTCOME

### STRATEGIC OUTCOME: OPTIMIZED FLOW & LIQUIDITY



By using the Sales Forecast to calculate DOI, production planning becomes proactive, ensuring sufficient stock to meet demand without trapping excessive capital. This balances service levels with operational efficiency.