

ABC Inventory Stratification

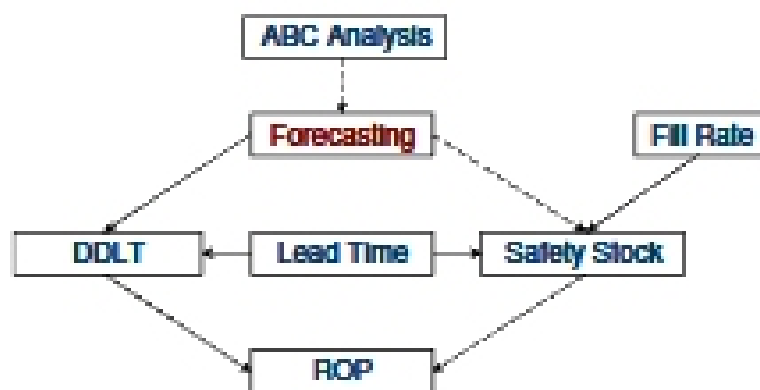
IDIS344



Objective

- Create Excel templates for Inventory Stratification
 - All 3 dimensions (Sales, Hits and GMROI)
 - Combination method
- Explore the use of Macros in during these stratification
- Some basic queries to extract data from a database package like Microsoft Access
 - The above two skills are essential for new recruits in the company

Inventory management model



Stratification Analysis

- Three ABC methods
 - GMROI (Gross Margin Return On Investment in %)

$$\frac{100 * (\text{Sales} - \text{Cost})}{\text{Avg. Inv. Value} @ \text{cost}}$$

- Avg. Inv. Value = $\frac{(\text{Ending Inv. Value for the last 12 months})}{12}$
- Sales – Based on Net Sales (Sales – Credits)
- Hits – Based on first time request by customers

Stratification Analysis

- ABC ranking according to different methods

	Sales (\$)	GMROI	Hits
A	Items contributing to top 80% of total sales volume for the branch	GMROI > 200%	Items contributing to top 80% of total hits for the branch
B	Items contributing to next 20% of total sales volume for the branch	100% < GMROI < 200%	Items contributing to next 20% of total hits for the branch
C	Items contributing to next 10% of total sales volume for the branch	50% < GMROI < 100%	Items contributing to next 10% of total hits for the branch
D	Remaining items	GMROI < 50%	Remaining items

ABC Analysis – Texas A&M Method

- Combination ABC matrix used to arrive at the final ABC rank
 - May have to be fine-tuned according to business and other relevant conditions
- Snapshot of the matrix:

Sales	GMROI	HITS	Final ABC
A	A	A	A
A	A	B	A
A	B	A	A
A	B	B	A
B	A	A	A
B	A	B	A
B	B	A	A
B	B	B	A
C	A	A	A
C	A	B	A
C	B	A	A
C	B	B	A
C	C	A	A
C	C	B	A
D	A	A	A
D	A	B	A
D	B	A	A
D	B	B	A
D	C	A	A
D	C	B	A
D	D	A	A
D	D	B	A

Calculating weighted average

Item	Sales (20%)	GMROI (30%)	Hits (40%)	Final ABC
Item1	A	B	C	
Item2	A	B	B	
Item3	B	A	A	

Weighted average value of combined ranking = $0.2(4) + 0.2(4) + 0.4(2)$ **2.2**

• Mappings to compute weighted average

- A - 4
- B - 3
- C - 2
- D - 1

Calculating the ranges



Two end points – 1 and 4
 Difference $(4-1) = 3$
 Divide into 4 equal parts
 Each part = $\frac{3}{4}$ or 0.75

Calculating weighted average

Item	Sales (20%)	GMROI (30%)	Hits (40%)	Final ABC
Item1	A	A	C	B
Item2	A	B	B	B
Item3	B	A	A	A

Weighted average value of combined ranking = $0.2(4) + 0.2(4) + 0.4(2)$ **2.2**

Score	Ranking
Score > 3.25	A
$2.25 < \text{Score} < 3.25$	B
$1.75 < \text{Score} < 2.25$	C
Score < 1.75	D

• Mappings to compute weighted average

- A - 4
- B - 3
- C - 2
- D - 1

A&M Approach

ABC Analysis – Inventory Policies Strategy			
A	⇒	SS + DDLT	(High PI Ratio)
B	⇒	SS + DDLT	(Relatively Low PI Ratio)
C	⇒	STOP BUYING (or) MIN STOCK	
D	⇒	LIQUIDATE	

SS – Safety Stock DDLT – Demand During Lead Time