Abc analysis

ABC Analysis Introduction ABC Analysis of inventory control is based on the Pareto principle that for many events, roughly 80% of the effects come from 20% of the causes (Bunkley, 2008). ABC analysis is the method of dividing on-hand inventory items into three classifications based on annual dollar volume (Heizer et. al. 2009, pg. 449). The ABC methodology of inventory control is based on the value of inventory consumption for each product every year. For the ABC analysis of the inventory, we categorize all inventory items in three categories:

A category items: These are those products that are very critical to the organization and require frequent analysis of the value of the inventory.

B category items: These are the set of products that lie second in the ranking of importance to the organization. These need to be valued less frequently than ' A' category.

C category items: C category items in the inventory are the least important for the organization.

The importance of the product in the inventory can be calculated by multiplying the average cost per unit with the actual usage in the last year.

Example

Let us see an example where the inventory of an organization has 10 items with the usage in no of units and the unit cost per each item as given in the table below:

Item No.

Average usage (Units)

Unit Cost ($)

1

15

3

2

45

15

3

17

15

4

23

15

5

7

16

6

48

120

7

150

6

8

19

2

9

17

3

10

18

3

The first step in the ABC analysis will include calculation of Annual usage in $ and ranking them according to the same. The table calculated with the same is shown below:

Item No.

Average usage

(Units)

Unit Cost

($)

Annual Usage

($)

Rank

6

48

120

5760

1

7

150

6

900

2

2

45

15

675

3

4

23

15

345

4

3

17

15

255

5

5

7

16

112

6

10

18

3

54

7

9

17

3

51

8

1

15

3

45

9

8

19

2

38

10

Now, we calculate the cumulative annual usage of each of the top items and then cumulative annual usage as a percentage of the total annual usage. The same is shown in the table below:

Item No.

Average usage

(Units)

Unit Cost

($)

Annual Usage

($)

Rank

Cumulative Annual Usage ($)

Annual Usage (%)

6

48

120

5760

1

5760

69. 95%

7

150

6

900

2

6660

80. 87%

2

45

15

675

3

7335

89. 07%

4

23

15

345

4

7680

93. 26%

3

17

15

255

5

7935

96. 36%

5

7

16

112

6

8047

97. 72%

10

18

3

54

7

8101

98. 37%

9

17

3

51

8

8152

98. 99%

1

15

3

45

9

8197

99. 54%

8

19

2

38

10

8235

100. 00%

We categorize the items as per the annual usage (%) of the items. Products below 70% of the cumulative annual usage will be categorized as A. Products with annual usage (%) between 70% and 95% will be categorized as B and the remaining C. The same is highlighted here in the table:

Item No.

Average usage

(Units)

Unit Cost

($)

Annual Usage

($)

Rank

Cumulative Annual Usage ($)

Annual Usage (%)

Category

6

48

120

5760

1

5760

69. 95%

A

7

150

6

900

2

6660

80. 87%

B

2

45

15

675

3

7335

89. 07%

B

4

23

15

345

4

7680

93. 26%

B

3

17

15

255

5

7935

96. 36%

C

5

7

16

112

6

8047

97. 72%

C

10

18

3

54

7

8101

98. 37%

C

9

17

3

51

8

8152

98. 99%

C

1

15

3

45

9

8197

99. 54%

C

8

19

2

38

10

8235

100. 00%

C

As we can see from the table, item no. 6 which has annual usage as a percentage of 69. 95% is a category A product. At the same time, item nos 7, 2 and 4 are category B and the remaining are category C.

References

Bunkley, Nick (March 3, 2008), " Joseph Juran, 103, Pioneer in Quality Control, Dies". [Online]. Available at: http://www. nytimes. com/2008/03/03/business/03juran. html.

Heizer, J., Render, B., & Rajashekhar, J. (2009). Operations Management, 9th ed. New Delhi: Pearson Education India