ABC Inventory Analysis

ABC inventory analysis sorts stock into three classes by value, so that managers can put their attention where it matters most. It applies the Pareto principle, named after the Italian economist Vilfredo Pareto, which says that a small share of causes often produces most of the results. The method is often credited to a General Electric manager named Dickie, who described it in the early 1950s. We follow Samer, who runs the spare parts store of a small factory.

1. Rank by Annual Value

The first step is to measure every item by its annual usage value. We multiply the quantity used in a year by the cost of one unit. Then we sort all items from the highest value to the lowest and add up the running share of the total. The list quickly shows that a few items carry most of the money.

Example: A family lists its monthly spending and ranks every item by cost. Rent, food and transport come first, and together they take most of the budget, while dozens of small items fill the rest.

At work: Samer's store holds 1,000 items. He multiplies the yearly usage of each item by its unit cost, sorts the list and adds the running total. The first 120 items already make up 75 percent of the total yearly value.

2. Draw the Lines

Next we draw lines on the sorted list to form three classes. Class A holds the few items with the highest value, commonly about 10 to 20 percent of the items and about 70 to 80 percent of the value. Class B is the middle group, and class C holds the many items with low value, often half of the items but only a few percent of the value. The exact cut-off points are a choice and not a law, so each company sets its own.

Example: A restaurant kitchen draws the lines: seafood and meat are class A, flour and rice are class B, and salt, napkins and spices are class C. Only a handful of costly items decide most of the food bill.

At work: Samer draws his lines. The top 120 items, with 75 percent of the value, become class A, the next 280 items, with 20 percent, become class B, and the last 600 items, with only 5 percent, become class C. Now every item carries a class label.

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3. Match Control to Class

Each class gets a different level of control. Class A items deserve tight control: frequent counts, accurate records, careful forecasts and close contact with suppliers. Class B items get moderate control, such as regular reviews and standard reorder rules. Class C items get simple control, such as ordering in bulk and checking stock only now and then, because the time spent would cost more than it saves.

Example: A café applies class A control to its expensive coffee beans and counts them every week, but treats napkins as class C and checks them once a month. The beans never run out, and nobody wastes time counting napkins.

At work: Samer counts class A items every week and agrees delivery dates with the suppliers, while class C items are ordered in bulk and counted once a year. His team now spends most of its time on the 120 items that matter most.

4. Review and Adjust

Value is not the only thing that matters. A cheap item can be critical if its absence stops a machine or a service, and lead time or shelf life can also change the care it needs. Demand and prices change as well, so the analysis should be repeated regularly. ABC analysis is a guide to focus, to be combined with judgement.

Example: A family's torch batteries are cheap, so by value they are class C. After a power cut in the dark, the family adjusts the list and always keeps spare batteries at home.

At work: Samer reviews the list and finds a cheap seal that stops a machine whenever it is missing. He moves it up to class A care and keeps spare stock. He repeats the whole analysis every quarter, because demand keeps changing.

Conclusion

In summary, ABC inventory analysis sorts stock into classes A, B and C by annual usage value, using the Pareto principle. Four steps put it to work: rank by annual value, draw the lines, match control to class, and review and adjust. Used with judgement, it focuses time and money on the few items that matter most.

Sources

- ASCM (formerly APICS), Supply Chain Dictionary - entry "ABC classification" (print and online editions)
- ABC analysis - overview of the method, classes and history (Wikipedia) – https://en.wikipedia.org/wiki/ABC_analysis
- Pareto principle - the idea behind ABC analysis (Wikipedia) – https://en.wikipedia.org/wiki/Pareto_principle

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