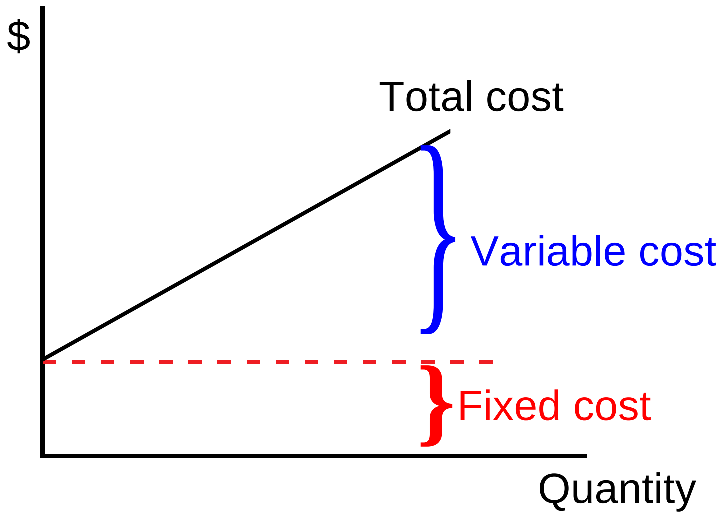
Marketing arithmetic and related concepts

Two of the core concepts of marketing arithmetic are “cost” and “revenue.”

Cost represents what we have to expand to acquire resources. Through our operations, we add value to these resources and by selling them generate revenue.

Fixed costs result from acquiring resources that do not depend on the quantity of output.
Variable costs result from acquiring resources that change by the quantity of output.
Total cost is the sum of fixed and variable costs



Total cost = Fixed cost + Total variable cost
Total cost = Fixed cost + Quantity x Variable cost per unit
TC = FC + Q.V

Revenue results from selling our products at certain prices

Total revenue = Price x Quantity

TR = P.Q

Break even
Where total cost and total revenue are the same, we break even. In other words, there is no profit or loss.

P.Q = FC + V.Q
P.Q - V.Q = FC
(P - V).Q = FC
Q = FC / (P- V)
At this quantity, the seller breaks even

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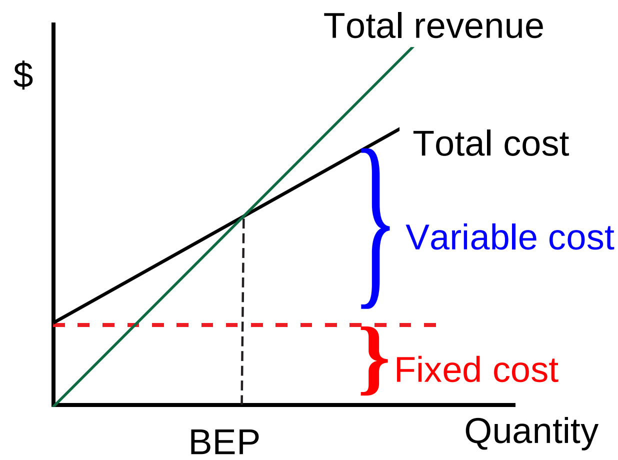
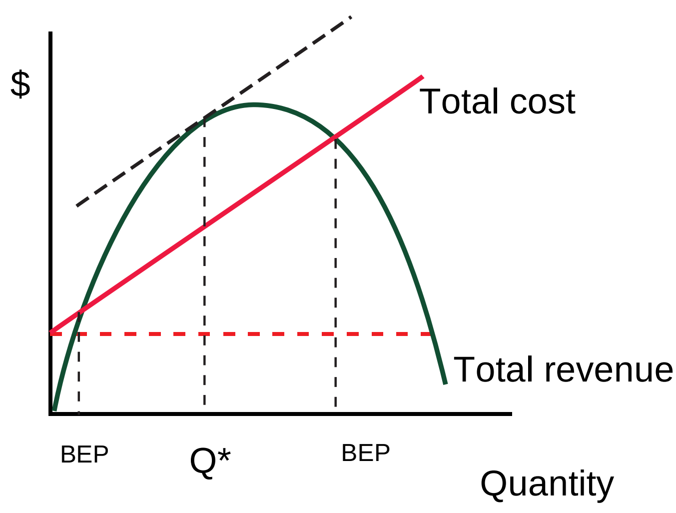
Contribution

Part of the selling price goes covering unit variable cost. What is left after that is called "contribution." In the above equation, unit contribution is P - V. If this is considered for the entire volume of sales, it becomes "total contribution," (P - V).Q Break even point is where total contribution and fixed costs are equal.

Graphically:



Although this analysis appears to base on a single assumed price, a more dynamic analysis that considers various prices and quantities sold at those prices can easily be developed.



Where Q* represents the quantity that will yield maximum profits.