Make or Buy Criteria

Introduction.

1. In the process of carrying out business activities of an organization, a product/service can be made or bought.

2. In many situations, the organization should EVALUATE each alternative depending on several criteria: cost, knowledge lost, quality, ...

3. In the long run, the M or B decision is NOT static.

4. The MoB decision should be periodically reviewed (i.e. yearly for Key Products, every 3 years for the rest), in order to cope with changes throughout the supply chain.

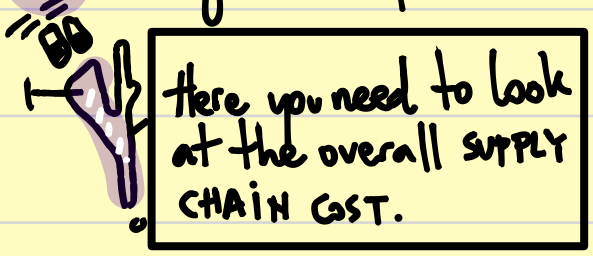
B → DELIVER
Supplier

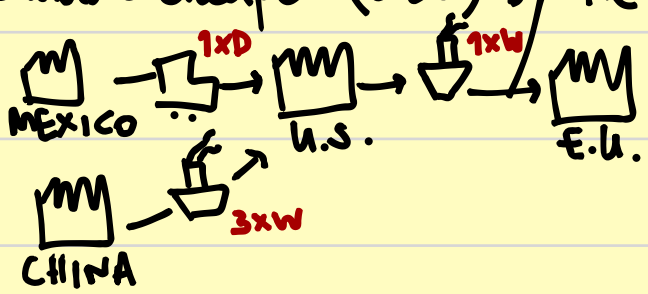
M → Raw Material → Make → DELIVER

QUALITATIVE CRITERIA FOR M or B DECISION

MAKE

M.1. The finished product can be made cheaper (COST) by the outside supplier.





M.2. Demand variability @ customer is high. In this case, your production should be more responsive and this is difficult in "B" situations.

M.3. Overall demand variability increases along the supply. (BULLWHIP)

M.4. Inventory increases, for this will impact quality negatively. (LITTLE'S LAW)

LITTLE's LAW. $\text{Throughput}\left[\frac{\text{PARTS}}{\text{TIME}}\right] = \frac{\text{WIP [PARTS]}}{\text{LEAD TIME [TIME]}}$

Excercise: Explain why quality goes down, when inventory goes up

> Even when the cost per unit at the supplier (B) is smaller than the cost per unit at our facility (M) this does not mean that B is better (!)

M.5 the finished product is being manufactured only by a limited number of outside firms, which are unable to meet demand or flexibility reqs.

M.6 The product has an utterly importance for the firm and requires extremely close quality control.

M.7. The product can be manufactured within the existing facilities and is similar (design) to other items in which the company has experience.

BUY

B.1. The product requires instruments which are only available at the potential supplier's plant.

B.2. The company does not have facilities to make the product and there are more profitable opportunities for investing the capital.

B.3. The people skills employed by the company are not sufficient or adaptable to make the new parts.

B.4. Patent or legal barriers that prevent the company from making the part.

B.5. Demand might be temporary or seasonal.

B.6. We can work on a JUSTINSEQUENCE basis with the supplier.

QUANTITATIVE CRITERIA FOR MorB

1. SIMPLE COST ANALYSIS

A company has extra capacity that can be used to produce a product which has been buying for 900€ each.

If the company makes the product, it will incurr in material cost of 300€/unit, labor cost of 250€/unit and overhead of 100€/unit. The fixed cost associated with unused capacities is 1Million€.

Demand is 5000 units/year.

MAKE or BUY?

COST of B: $\text{Purchase cost} = \frac{\text{Price}}{\text{Unit}} \cdot \text{Demand} =$

$= 900\frac{€}{\text{Unit}} \cdot 5000\frac{\text{Unit}}{\text{Year}} = 4.500.000\frac{€}{\text{Year}}$

Fixed cost Capacity $= 1.000.000\frac{€}{\text{Year}}$

Cost of B $\longrightarrow$ $5.500.000\frac{€}{Y}$

Cost of M: $\text{Variable}\frac{\text{Cost}}{\text{Unit}} = \text{Material} + \text{Labor} + \text{Overhead} =$

$= (300 + 250 + 100)\frac{€}{\text{Unit}} = 650\frac{€}{\text{Unit}}$

$\text{Total Variable Cost} = 650\frac{€}{\text{Unit}} \cdot 5000\frac{\text{Unit}}{\text{Year}} = 3250000\frac{€}{Y}$

Fixed cost Capacity $= 1000000\frac{€}{Y}$

Cost of M $\longrightarrow$ $4250000\frac{€}{Y}$

Problem: ABC Corporation is a global manufacturer of advanced tech. products. The company is currently producing Component X, a complex part. in-house (MAKE). However, recent market dynamics, including fluctuating raw materials prices, and geopolitical uncertainties, have impacted the cost structure and supply chain related.

In the last fiscal year, the in-house production incurred a total cost of €8million, with a defect rate of 5%, leading to additional warranty claims costing 500000€. The current lead time in-house is 12 weeks. On the other hand, external suppliers are offering to produce at a total cost of €7 Million with a guaranteed defect rate of 2% and a lead time of 26 weeks.

Please argue if you would keep the M or would change to B.

RISK TOLERANCE: 20%.