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Sales Forecast by Taking the Concept of Blue Ocean Theory using MatLab Programming

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Abstract

Recently the market become red ocean and the concept of blue ocean decides that the demand and supply of any incoming goods and services can produce the drastic change in economy if it shows the Growth pattern and precise enough to create the impact on customers mind. This will create lot of time to turn blue ocean into red ocean.

Keywords: blue ocean, market analysis, segmentation, economic analysis, Matlab programming.

1 Introduction

1.1 Red Oceans are all the industries in existence today – the known market space. In the red oceans, industry boundaries are defined and accepted, and the competitive rules of the game are known. Here companies try to outperform their rivals to grab a greater share of product or service demand^[1]. As the market space gets crowded, prospects for profits and growth are reduced. Products become [commodities](#) or [niche](#), and cutthroat competition turns the ocean bloody. Hence, the term *red oceans*

1.2 Blue oceans, in contrast, denote all the industries not in existence today^[3] – the unknown market space, untainted by competition. In blue oceans, demand is created rather than fought over. There is ample opportunity for growth that is both profitable and rapid^[1]. In blue oceans, competition is irrelevant because the rules of the game are waiting to be set. Blue ocean is an analogy to describe the wider, deeper potential of market space that is not yet explored

Blue ocean strategy, on the other hand, is based on the view that market boundaries and industry structure are not given and can be reconstructed by the actions and beliefs of industry players. This is what the authors call “reconstructionist view”^[3]. Assuming that structure and market boundaries exist only in managers’ minds, practitioners who hold this view do not let existing market structures limit their thinking^[18]. To them, extra demand is out there, largely untapped. The crux of the problem is how to create it. This, in turn, requires a shift of attention from supply to demand, from a focus on competing to a focus on value innovation – that is, the creation of innovative value to unlock new demand^[3]. This is achieved via the simultaneous pursuit of differentiation and low-cost^[5]. As market structure is changed by breaking the value/cost tradeoff, so are the rules of the game. Competition in the old game is therefore rendered irrelevant. By expanding the demand side of the economy new wealth is created. Such a strategy^[9] therefore allows firms to largely play a non-zero-sum game, with high payoff possibilities

1.2.1 The three strategy propositions

The three strategy propositions are defined as follows:

- Value proposition – the utility buyers (referring to both customers and noncustomers) receive from an offering minus the price they pay for it^[8]
- Profit proposition – the revenues an organization generates from an offering minus the cost to produce and deliver it^[19]

- People proposition – the positive motivations and incentives put in place for people needed to support and implement the strategy

2.1 Marginal revenue-marginal cost method

An alternative argument says that for each unit sold, marginal profit (MP) equals marginal revenue (MR) minus marginal cost (MC)^[5]. Then, if marginal revenue is greater than marginal cost, marginal profit is positive, and if marginal revenue is less than marginal cost, marginal profit is negative. When marginal revenue equals marginal cost, marginal profit is zero. Since total profit increases when marginal profit is positive and total profit decreases when marginal profit is negative^[2], it must reach a maximum where marginal profit is zero - or where marginal cost equals marginal revenue. If there are two points where this occurs, maximum profit is achieved where the producer has collected positive profit up until the intersection of MR and MC (where zero profit is collected)^[5], but would not continue to after, as opposed to vice versa, which represents a profit minimum^[18]. In calculus terms, the correct intersection of MC and MR will occur when

$$dMR/dQ < dMC/dQ$$

2.1.1 Break-Even Point

A company's break-even point is the amount of sales or revenues that it must generate in order to equal its expenses. In other words, it is the point at which the company neither makes a profit nor suffers a loss. Calculating the break-even point (through break-even analysis) can provide a simple, yet powerful quantitative tool for managers. In its simplest form, break-even analysis provides insight into whether or not revenue from a product or service has the ability to cover the relevant costs of production of that product or service^[9]. Managers can use this information in making a wide range of business decisions, including setting prices, preparing competitive bids, and applying for loans.

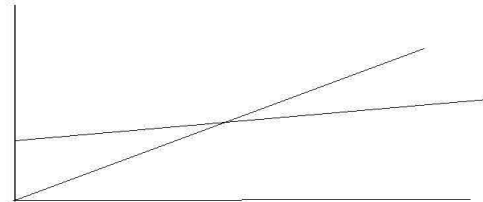
The break-even point has its origins in the economic concept of the "point of indifference." From an economic perspective^[4], this point indicates the quantity of some good at which the decision maker would be indifferent, i.e., would be satisfied, without reason to celebrate or to opine^[18]. At this quantity, the costs and benefits are precisely balanced^[11].

Similarly, the managerial concept of break-even analysis seeks to find the quantity of output that just covers all costs so that no loss is generated. Managers can determine the minimum quantity of sales at which the company would avoid a loss in the production of a given good. If a product cannot cover its own costs^[9], it inherently reduces the profitability of the firm

2.1.2 Managerial Analysis

Typically the scenario is developed and graphed in linear terms. Revenue is assumed to be equal for each unit sold, without the complication of quantity discounts. If no units are sold, there is no total revenue (Rs0). However, total costs are considered from two perspectives. Variable costs are those that increase with the quantity produced; for example, more materials will be required as more units are produced. Fixed costs, however, are those that will be incurred by the company even if no units are produced^[2]. In a company that produces a single good or service, this would include all costs necessary to provide the production environment, such as administrative costs^[9], depreciation of equipment, and regulatory fees. In a multi-product company, fixed costs are usually allocations of such costs to a particular product, although some fixed costs (such as a specific supervisor's salary) may be totally attributable to the product.

Figure 1 displays the standard break-even analysis framework. Units of output are measured on the horizontal axis, whereas total Rupees (both revenues and costs) are the vertical units of measure. Total revenues are nonexistent (Rs0) if no units are sold^[8]. However, the fixed costs provide a floor for total costs; above this floor, variable costs are tracked on a per-unit basis. Without the inclusion of fixed costs, all products for which marginal revenue exceeds marginal costs would appear to be profitable.



break-even analysis 1
Total cost Vs revenue 1

Figure 1 Simple Break-Even Analysis: Total Revenues and Total Costs

In Figure 1, the break-even point illustrates the quantity at which total revenues and total costs are equal; it is the point of intersection for these two totals. Above this quantity, total revenues will be greater than total costs, generating a profit for the company^[4]. Below this quantity, total costs will exceed total revenues, creating a loss.

To find this break-even quantity, the manager uses the standard profit equation, where profit is the difference between total revenues and total costs. Predetermining the profit to be Rs0, he/she then solves for the quantity that makes this equation true^[7], as follows:

Let TR = Total revenues

TC = Total costs

P = Selling price

F = Fixed costs

V = Variable costs

Q = Quantity of output

$$TR = (Y1) = mX \dots \dots \dots (i)$$

$$TC = (Y2) = F(K) + mIX \dots \dots \dots (ii)$$

TR intersection TC = profit

Because there is no profit (Rs0) at the break-even point, $TR \hat{=} TC = 0$, and then $P \hat{=} Q \hat{=} (F + V \hat{=} Q) = 0$. Finally, $Q = F(P \hat{=} V)$.

This is typically known as the contribution margin model, as it defines the break-even quantity (Q) as the number of times the company must generate the unit contribution margin ($P \hat{=} V$), or selling price minus variable costs, to cover the fixed costs^[10]. It is particularly interesting to note that the higher the fixed costs,

the higher the break-even point. Thus, companies with large investments in equipment and/or high administrative-line ratios may require greater sales to break even^[11].

While it is useful to know the quantity of sales^[16] at which a product will cease to generate losses, it may be even more useful to know the quantity necessary to generate a desired level of profit, say D .

$$TR \hat{=} TC = D$$

$$P \tilde{A} Q \hat{=} (F + V \tilde{A} Q) = D$$

$$\text{Then } Q = (F + D) \tilde{A} \cdot (P \hat{=} V)$$

Here $\hat{=}$ and \tilde{A} denotes the intersection terms.

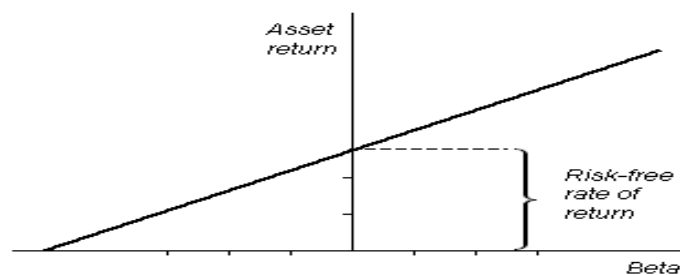
This has the effect of regarding the desired profit as an increase in the fixed costs to be covered by sales of the product. As the decision-making process often requires profits for payback period^[10], internal rate of return, or net present value analysis, this form may be more useful than the basic break-even model

At a particular point $Y1=Y2$

$$mX = F(K) + mIX$$

thus by applying state –space Analysis we conclude that for taking the concept of Blue Ocean Theory, we define arbitrate taken state of different parameters in increasing Order which will create a break even point. Note(Analysis1(a))

3.1 Capital asset pricing model (CAPM)



The CAPM is a model for pricing an individual security or a portfolio^[12]. For individual securities, we make use of the [security market line](#) (SML) and its relation to expected return and [systematic risk](#) (beta) to show how the market must price individual securities in relation to their security risk class^[4]. The SML enables us to calculate the reward-to-risk ratio^[15] for any security in relation to that of the overall market. Therefore, when the expected rate of return for any security is deflated by its beta coefficient, the

reward-to-risk ratio for any individual security in the market is equal to the market reward-to-risk ratio^[19], thus:

$$\frac{E(R_i) - (R_f)}{\beta} = E(R_m) - R_f$$

where

- 1) $E(R_i) - (R_f)$ is also known as the *risk premium*^[12]
- 2) β (the *beta*) is the *sensitivity* of the expected excess asset returns to the expected excess market returns^[14]
- 3) $E(R_m) - R_f$ is sometimes known as the *market premium* (the difference between the expected market rate of return and the risk-free rate of return)^[19].

Note2(Analysis2(a))

4 Conclusion

In the future growing Economic Market^[11], there should be drastic change in economy^[2] of any country by the introduction of any typical growing sector^[16], thus with the help of introduction to the concept of Blue Ocean theory and Matlab programming we can assess the Break Even point, any managerial analysis in terms of profit and loss and Even the calculation Capital asses pricing Model^[13]. Here substitution of parameter decides the concept which is decides the market trend with respect to the product sales^[20].

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Note1(a)

Analysis 1(a)

x=1;

k=1;

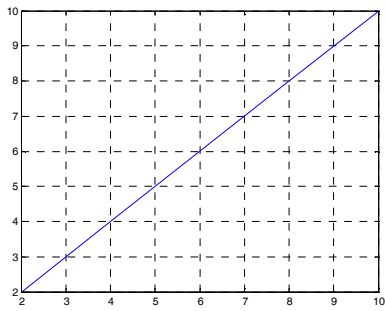
y1=[1 3 5 6 7]*x;

y2=[1 2 5 2 1]*k + [1 2 3 6 9]*x;

y1=y2

plot(y1,y2);

grid on



Note2(a)

Analysis 2(a)

```
x=1;  
k=1;  
y1=[1 3 5 6 7]*x;  
y2=[1 2 5 2 1]*k + [1 2 3 6 9]*x;  
plot(y1,y2);  
grid on
```

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