

MANAGERIAL ECONOMICS – BEC53

Objective

To make the students understand the application of economic tools and logic to business decision making: demand forecasting and pricing methods.

UNIT-I

Definition, Meaning, Nature and Scope of Managerial Economics – Economics and Managerial Economics - Demand Forecasting: Meaning - Purpose & methods - Criteria for good forecasting.

UNIT-II

Managerial Decision Making: Risk and Uncertainty - Classification of Managerial Problem - Decision taking under certainty and uncertainty - Cost control & Cost Reduction.

UNIT-III

Pricing Methods - Full cost Pricing, target pricing, Going rate pricing – customary pricing, differential pricing - Specific pricing methods - pricing a new product - pricing over the life cycle of a product - product line pricing - mark up and mark down pricing by retailers - Resale price maintenance - Duel pricing - Brand Value.

UNIT-IV

Profit and Profit Management: Accounting profit and Economic profit – Theories of profit.

UNIT-V

Capital Budgeting: Need for Capital Budgeting - forms of capital Budgeting - Nature of Capital budgeting problems - project profitability: Methods of Appraising project Profitability.

Unit - I

Introduction

Managerial economics is a discipline which deals with the application of economic theory to business management. It deals with the use of economic concepts and principles of business decision making. Formerly it was known as “Business Economics” but the term has now been discarded in favour of Managerial Economics.

Managerial Economics may be defined as the study of economic theories, logic and methodology which are generally applied to seek solution to the practical problems of business. Managerial Economics is thus constituted of that part of economic knowledge or economic theories which is used as a tool of analysing business problems for rational business decisions. Managerial Economics is often called as Business Economics or Economic for Firms.

Definition of Managerial Economics

“Managerial Economics is economics applied in decision making. It is a special branch of economics bridging the gap between abstract theory and managerial practice.” - **Haynes, Mote and Paul.**

“Business Economics consists of the use of economic modes of thought to analyse business situations.” - **McNair and Meriam.**

“Business Economics (Managerial Economics) is the integration of economic theory with business practice for the purpose of facilitating decision making and forward planning by management.” - **Spencer and Seegelman.**

“Managerial economics is concerned with application of economic concepts and economic analysis to the problems of formulating rational managerial decision.” - **Mansfield.**

Nature of Managerial Economics

The primary function of management executive in a business organization is decision making and forward planning.

Decision making and forward planning go hand in hand with each other. Decision making means the process of selecting one action from two or more alternative courses of

action. Forward planning means establishing plans for the future to carry out the decision so taken.

The problem of choice arises because resources at the disposal of a business unit (land, labour, capital, and managerial capacity) are limited and the firm has to make the most profitable use of these resources.

The decision making function is that of the business executive, he takes the decision which will ensure the most efficient means of attaining a desired objective, say profit maximisation. After taking the decision about the particular output, pricing, capital, raw-materials and power etc., are prepared. Forward planning and decision-making thus go on at the same time.

A business manager's task is made difficult by the uncertainty which surrounds business decision-making. Nobody can predict the future course of business conditions. He prepares the best possible plans for the future depending on past experience and future outlook and yet he has to go on revising his plans in the light of new experience to minimise the failure. Managers are thus engaged in a continuous process of decision-making through an uncertain future and the overall problem confronting them is one of adjusting to uncertainty.

In fulfilling the function of decision making in an uncertainty framework, economic theory can be, pressed into service with considerable advantage as it deals with a number of concepts and principles which can be used to solve or at least throw some light upon the problems of business management. E.g is profit, demand, cost, pricing, production, competition, business cycles, national income etc. The way economic analysis can be used towards solving business problems, constitutes the subject matter of Managerial Economics.

Thus in brief we can say that Managerial Economics is both a science and an art.

Scope of Managerial Economics

The scope of managerial economics is not yet clearly laid out because it is a developing science. Even then the following fields may be said to generally fall under Managerial Economics:

1. Demand Analysis and Forecasting
2. Cost and Production Analysis
3. Pricing Decisions, Policies and Practices

4. Profit Management

5. Capital Management

These divisions of business economics constitute its subject matter.

Recently, managerial economists have started making increased use of Operation Research methods like Linear programming, inventory models, Games theory, queuing up theory etc., have also come to be regarded as part of Managerial Economics.

1. Demand Analysis and Forecasting

A business firm is an economic organisation which is engaged in transforming productive resources into goods that are to be sold in the market. A major part of managerial decision making depends on accurate estimates of demand. A forecast of future sales serves as a guide to management for preparing production schedules and employing resources. It will help management to maintain or strengthen its market position and profit base. Demand analysis also identifies a number of other factors influencing the demand for a product. Demand analysis and forecasting occupies a strategic place in Managerial Economics.

2. Cost and production analysis

A firm's profitability depends much on its cost of production. A wise manager would prepare cost estimates of a range of output, identify the factors causing or cause variations in cost estimates and choose the cost-minimising output level, taking also into consideration the degree of uncertainty in production and cost calculations. Production processes are under the charge of engineers but the business manager is supposed to carry out the production function analysis in order to avoid wastages of materials and time. Sound pricing practices depend much on cost control. The main topics discussed under cost and production analysis are: Cost concepts, cost-output relationships, Economics and Diseconomies of scale and cost control.

3. Pricing decisions, policies and practices

Pricing is a very important area of Managerial Economics. In fact, price is the genesis of the revenue of a firm and as such the success of a business firm largely depends on the correctness of the price decisions taken by it. The important aspects dealt with this area are: Price determination in various market forms, pricing methods, differential pricing, product line pricing and price forecasting.

4. Profit management

Business firms are generally organized for earning profit and in the long period, it is profit which provides the chief measure of success of a firm. Economics tells us that profits are the reward for uncertainty bearing and risk taking. A successful business manager is one who can form more or less correct estimates of costs and revenues likely to accrue to the firm at different levels of output. The more successful a manager is in reducing uncertainty, the higher are the profits earned by him. In fact, profit planning and profit measurement constitute the most challenging area of Managerial Economics.

5. Capital management

The problems relating to firm's capital investments are perhaps the most complex and troublesome. Capital management implies planning and control of capital expenditure because it involves a large sum and moreover the problems in disposing the capital assets off are so complex that they require considerable time and labour. The main topics dealt with under capital management are cost of capital, rate of return and selection of projects.

The various aspects outlined above represent the major uncertainties which a business firm has to reckon with, viz., demand uncertainty, cost uncertainty, price uncertainty, profit uncertainty, and capital uncertainty. The subject-matter of Managerial Economics consists of applying economic principles and concepts towards adjusting with various uncertainties faced by a business firm.

Differences between Managerial Economics and Economics

Managerial Economics has been described as economics applied to decision-making. It may be viewed as a special branch of Economics. However, the main points of differences are the following:

1. The traditional Economics has both micro and macro aspects whereas Managerial Economics is essentially micro in character.

2. Economics is both positive and normative science but the Managerial Economics is essentially normative in nature.

3. Economics deals mainly with the theoretical aspect only whereas Managerial Economics deals with the practical aspect.

4. Managerial Economics studies the activities of an individual firm or unit. Its analysis of problems is micro in nature, whereas Economics analyzes problems both from micro and macro point of views.

5. Economics studies human behaviour on the basis of certain assumptions but these assumptions sometimes do not hold good in Managerial Economics as it concerns mainly with practical problems.

6. Under Economics we study only the economic aspect of the problems but under Managerial Economics we have to study both the economic and non economic aspects of the problems.

7. Economics studies principles underlying rent, wages, interest and profits but in Managerial Economics we study mainly the principles of profit only.

8. Sound decision-making in Managerial Economics is considered to be the most important task for the improvement of efficiency of the business firm; but in Economics it is not so.

9. The scope of Managerial Economics is limited and not as wide as that of Economics.

Thus, it is obvious that Managerial Economics is very closely related to Economics but its scope is narrow as compared to Economics.

Managerial Economics is also closely related to other subjects, viz., Statistics, Mathematics and Accounting.

A trained managerial economist integrates concepts and methods from all these disciplines bringing them to bear on business problems of a firm.

Demand forecasting

A forecast is a prediction or estimation of a future situation. Demand forecasting means estimation of the demand for the product in question for the forecast period.

Demand forecasts are also classified into active and passive forecasts.

Active forecasts consider the likely changes in the relevant variables in future in estimating the future demand. Passive forecasts refer to the estimation of future demand if things continue the way they have been in the past.

Thus, it is clear that the active forecasts are more meaningful though passive forecasts assess the impact of new policies on the market.

Purposes of Forecasting

The purposes of forecasting differ according to types of forecasting: Short-term forecasting and long term forecasting.

A. Short term

1. Helps in reducing costs of raw materials and control inventories.
2. Make arrangements for short terms financial requirements, such as working capital for day-to-day requirements.
3. Establish targets and to provide incentives to sales force.
4. Make arrangements for appropriate promotional efforts such as advertising and sales campaign etc.
5. Formulate pricing policies for achieving desired results.
6. Demand forecasting assists in production planning and scheduling Operations to avoid overproduction and underproduction.

B. Long term

1. Frequently, the objective of forecasting is to predict demand.
2. Forecasts can also provide information on the proper product mix.
3. Long term demand forecasting tries to achieve the objective of ascertaining future demand for the demand for the product so that the firm can plan for new units, new projects, new plants, expansion of existing scale of operations.
4. Demand forecasting is also significant for preparing plans for long-term financial requirements and take steps for arranging these finances.

5. Demand forecasting helps the firm in planning long term human resource planning with training Programs well in time for future expansion programmes and also for adopting itself to new products likely to come up in the market.

6. It also helps in developing different processes if there is going to be a heavy growth in the demand for the product.

7. The forecast may be little more than an intuitive assessment of the future by those involved in the decision. In other cases, the forecast may have required deliberate effort.

Methods of Demand forecasting (or) Demand forecasting Technique

Several methods are employed for demand forecasting. It can be classified under two categories, namely,

1. Survey Methods

In this method, we try to elicit information about the desires of the consumers and the opinions of experts by interviewing them. Short-term forecasting depends heavily on the Survey methods.

The new products require the use of survey methods only. In the absence of part information or historical data for the new products, the survey methods alone would help.

2. Statistical methods

These methods use the past date as our guide for knowing the level of future demand. Lay -term forecasting makes use of this method.

The method of forecasting is not the same for all products. It is possible to forecast the demand for established products by using any methods, but for the new products it is not so.

The broad classification of Survey methods and statistical methods are further subdivided into different categories, as is shown in the diagram.

Techniques & Methods of Demand Forecasting

Different organizations rely on different techniques to forecast demand for their products or services for a future time period depending on their requirements and budget. Methods of demand forecasting are broadly categorized into two types.

1. Qualitative Techniques

Survey Methods

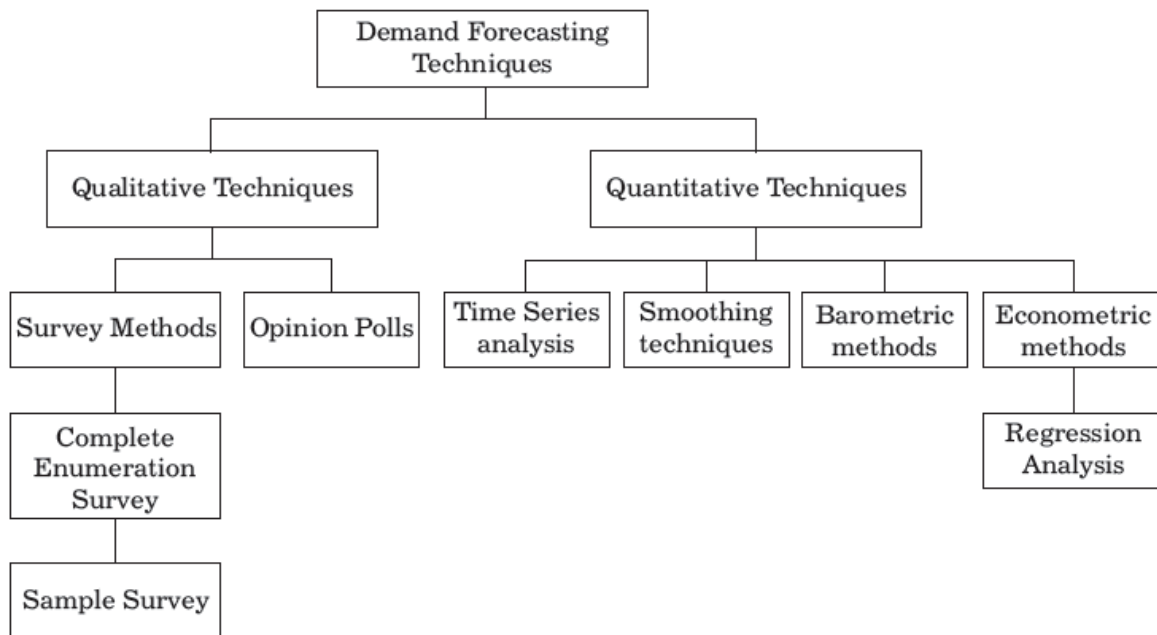
2. Quantitative Techniques

Time Series Analysis

Smoothing Techniques

Barometric Methods

Econometric Methods



I. Qualitative techniques

Qualitative techniques rely on collecting data on the buying behaviour of consumers from experts or through conducting surveys in order to forecast demand. These techniques are generally used to make short term forecasts of demand.

Qualitative techniques are especially useful in situations when historical data is not available; for example, introduction of a new product or service. These techniques are based on experience, judgment, intuition, conjecture, etc.

1. Survey Methods

Survey methods are the most commonly used methods of forecasting demand in the short run. This method relies on the future purchase plans of consumers and their intentions to anticipate demand.

Thus, in this method, an organization conducts surveys with consumers to determine the demand for their existing products and services and anticipate the future demand accordingly. The two types of survey methods are explained as follows:

a. Complete enumeration survey

This method is also referred to as the **census method** of demand forecasting. In this method, almost all potential users of the product are contacted and surveyed about their purchasing plans. Based on these surveys, demand forecasts are made. The aggregate demand forecasts are attained by totaling the probable demands of all individual consumers in the market.

b. Sample survey

In this method, only a few potential consumers (called sample) are selected from the market and surveyed. In this method, the average demand is calculated based on the information gathered from the sample.

2. Opinion poll

Opinion poll methods involve taking the opinion of those who possess knowledge of market trends, such as sales representatives, marketing experts, and consultants.

The most commonly used opinion polls methods are explained as follows:

a. Expert opinion method

In this method, sales representatives of different organizations get in touch with consumers in specific areas. They gather information related to consumers' buying behaviour, their reactions and responses to market changes, their opinion about new products, etc.

b. Delphi method

In this method, market experts are provided with the estimates and assumptions of forecasts made by other experts in the industry. Experts may reconsider and revise their own estimates and assumptions based on the information provided by other experts.

c. Market studies and experiments

This method is also referred to as market experiment method. In this method, organizations initially select certain aspects of a market such as population, income levels, cultural and social background, occupational distribution, and consumers' tastes and preferences. Among all these aspects, one aspect is selected and its effect on demand is determined while keeping all other aspects constant.

II. Quantitative Techniques

Quantitative techniques for demand forecasting usually make use of statistical tools. In these techniques, demand is forecasted based on historical data.

These methods are generally used to make long-term forecasts of demand. Unlike survey methods, statistical methods are cost effective and reliable as the element of subjectivity is minimum in these methods. Let us discuss different types of quantitative methods:

1. Time Series Analysis

Time series analysis or trend projection method is one of the most popular methods used by organizations for the prediction of demand in the long run. The term time series refers to a sequential order of values of a variable (called trend) at equal time intervals.

Using trends, an organization can predict the demand for its products and services for the projected time. There are four main components of time series analysis that an organization must take into consideration while forecasting the demand for its products and services. These components are:

a. Trend component

The trend component in time series analysis accounts for the gradual shift in the time series to a relatively higher or lower value over a long period of time.

b. Cyclical component

The cyclical component in time series analysis accounts for the regular pattern of sequences of values above and below the trend line lasting more than one year.

c. Seasonal component

The seasonal component in time series analysis accounts for regular patterns of variability within certain time periods, such as a year.

d. Irregular component

The irregular component in time series analysis accounts for a short term, unanticipated and non-recurring factors that affect the values of the time series.

2. Smoothing Techniques

In cases where the time series lacks significant trends, smoothing techniques can be used for demand forecasting. Smoothing techniques are used to eliminate a random variation from the historical demand.

This helps in identifying demand patterns and demand levels that can be used to estimate future demand. The most common methods used in smoothing techniques of demand forecasting are simple moving average method and weighted moving average method.

a. The simple moving average

This method is used to calculate the mean of average prices over a period of time and plot these mean prices on a graph which acts as a scale. For example, a five-day simple moving average is the sum of values of all five days divided by five.

b. The weighted moving average

This method uses a predefined number of time periods to calculate the average, all of which have the same importance. For example, in a four-month moving average, each month represents 25 per cent of the moving average.

3. Barometric Methods

Barometric methods are used to speculate the future trends based on current developments. This method is also referred to as the leading indicators approach to demand forecasting.

Many economists use barometric methods to forecast trends in business activities. The basic approach followed in barometric methods of demand analysis is to prepare an index of relevant economic indicators and forecast future trends based on the movements shown in the index.

The barometric methods make use of the following indicators

a. Leading indicators

When an event that has already occurred is considered to predict the future event, the past event would act as a leading indicator. For example, the data relating to working women would act as a leading indicator for the demand of working women hostels.

b. Coincident indicators

These indicators move simultaneously with the current event. For example, a number of employees in the non-agricultural sector, rate of unemployment, per capita income, etc., act as indicators for the current state of a nation's economy.

c. Lagging indicators

These indicators include events that follow a change. Lagging indicators are critical to interpret how the economy would shape up in the future. These indicators are useful in

predicting the future economic events. For example, inflation, unemployment levels, etc. are the indicators of the performance of a country's economy.

4. Econometric Methods

Econometric methods make use of statistical tools combined with economic theories to assess various economic variables (for example, price change, income level of consumers, changes in economic policies, and so on) for forecasting demand.

The forecasts made using econometric methods are much more reliable than any other demand forecasting method. An econometric model for demand forecasting could be single equation regression analysis or a system of simultaneous equations. A detailed explanation of regression analysis is given in the next section.

a. Regression Analysis

The regression analysis method for demand forecasting measures the relationship between two variables. Using regression analysis a relationship is established between the dependent (quantity demanded) and independent variable (income of the consumer, price of related goods, advertisements, etc.). For example, regression analysis may be used to establish a relationship between the income of consumers and their demand for a luxury product. In other words, regression analysis is a statistical tool to estimate the unknown value of a variable when the value of the other variable is known.

After establishing the relationship, the regression equation is derived assuming the relationship between variables is linear. The formula for a simple linear regression is as follows:

$$Y = a + bX$$

Where Y is the dependent variable for which the demand needs to be forecasted; b is the slope of the regression curve; X is the independent variable; and a is the Y-intercept. The intercept a will be equal to Y if the value of X is zero.

Criteria for Good Forecasting

As there are several methods of demand forecasting, it is essential to notice some of the criteria should be adopted for forecasting.

1. Simplicity.
2. Accuracy.

3. Easy availability.
4. Economy
5. Plausibility.
6. Capacity to update forecasts.

To conclude the ideal forecasting methods is one which yields good returns over costs in accuracy, meets new circumstances with flexibility, In short, predictive accuracy is more important than over concentration of finer points of statistical theory.

UNIT-II

Managerial Decision Making

Managers are constantly making decisions, and those decisions often have significant impacts and implications for both the organization and its stakeholders. Managerial decision making is often characterized by Complexity, incomplete information and time constraints, and there is rarely one right answer.

Managerial Decision Making Process (5 Steps)

Decision making is crucial for running a business enterprise which faces a large number of problems requiring decisions. Which product to be produced, what price to be charged, what quantity of the product to be produced, what and how much advertisement expenditure to be made to promote the sales, how much investment expenditure to be incurred are some of the problems which require decisions to be made by managers.

1. Establishing the Objective

The first step in the decision making process is to establish the objective of the business enterprise. The important objective of a private business enterprise is to maximize profits. However, a business firm may have some other objectives such as maximization of sales or growth of the firm.

But the objective of a public enterprise is normally not of maximization of profits but to follow benefit-cost criterion. According to this criterion, a public enterprise should evaluate all social costs and benefits when making a decision whether to build an airport, a power plant, a steel plant, etc.

2. Defining the Problem

The second step in decision making process is one of defining or identifying the problem. Defining the nature of the problem is important because decision making is after all meant for solution of the problem. For instance, a cotton textile firm may find that its profits are declining.

It needs to be investigated what are the causes of the problem of decreasing profits. It is the wrong pricing policy, bad labour management relations or the use of outdated

technology which is causing the problem of declining profits. Once the source or reason for falling profits has been found, the problem has been identified and defined.

3. Identifying Possible Alternative Solutions (i.e. Alternative Courses of Action)

Once the problem has been identified, the next step is to find out alternative solutions to the problem. This will require considering the variables that have an impact on the problem. In this way, relationship among the variables and with the problems has to be established.

In regard to this, various hypotheses can be developed which will become alternative courses for the solution of the problem. For example, in case of the problem mentioned above, if it is identified that the problem of declining profits is due to be use of technologically inefficient and outdated machinery in production.

The two possible solutions of the problem are

- (1) Updating and replacing only the old machinery.
- (2) Building entirely a new plant equipped with latest machinery.

The choice between these alternative courses of action depends on which will bring about larger increase in profits.

4. Evaluating Alternative Courses of Action

The next step in business decision making is to evaluate the alternative courses of action. This requires the collection and analysis of the relevant data. Some data will be available within the various departments of the firm itself, the other may be obtained from the industry and government.

The data and information so obtained can be used to evaluate the outcome or results expected from each possible course of action. Methods such as regression analysis, differential calculus, linear programming and cost- benefit analysis are used to arrive at the optimal course. The optimum solution will be one that helps to achieve the established objective of the firm. The course of action which is optimum will be actually chosen. It may be further noted that for the choice of an optimal solution to the problem, a manager works under certain constraints.

The constraints may be legal such as laws regarding pollution and disposal of harmful wastes; they may be financial (i.e. limited financial resources); they may relate to the availability of physical infrastructure and raw materials, and they may be technological in nature which set limits to the possible output to be produced per unit of time. The crucial role of a business manager is to determine optimal course of action and he has to make a decision under these constraints.

5. Implementing the Decision

After the alternative courses of action have been evaluated and optimal course of action selected, the final step is to implement the decision. The implementation of the decision requires constant monitoring so that expected results from the optimal course of action are obtained. Thus, if it is found that expected results are not forthcoming due to the wrong implementation of the decision, then corrective measures should be taken.

However, it should be noted that once a course of action is implemented to achieve the established objective, changes in it may become necessary from time to time in response in changes in conditions or firm's operating environment on the basis of which decisions were taken.

The five steps in the decision making process are shown in Fig. 1.2

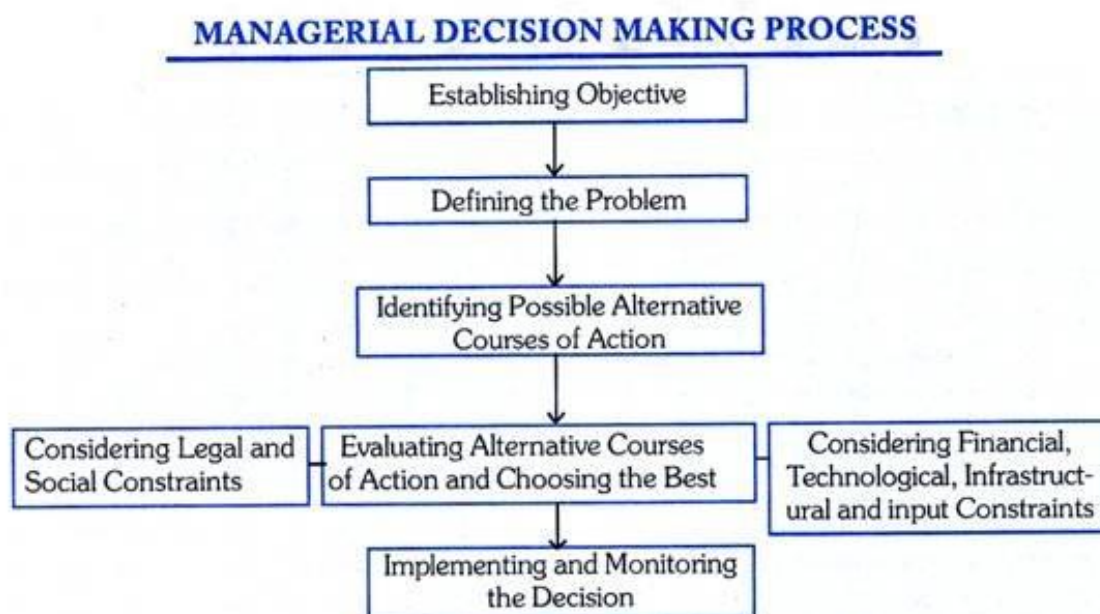


Fig. 1.2. Managerial Decision Making Process : Various Steps

Types of Decisions

1. Production decision

The manager has limited resources and has to choose between the alternatives in order to gain maximum profit from his operations. Normally this is being done on the basis of past experience

2. Inventory management decision

Business operations requires proper Inventory of finished goods and inventory of raw material for Smooth Production process

3. Cost decision

Past cost is taken as a guideline in the traditional theory. But in modern days, the emphasis in cost accounting has shifted to encompass wide variety of approaches to cost control.

4. Marketing and output decisions

Which involves sales & purchase decision. Sales plan must match with the purchase plan to maximize the profits.

5. Investment decision

The firm has to decide how much to invest and how these investments are to be funded capital budgeting techniques help in the long run investment decision.

6. Personnel relations decision

Personnel Managers have to be in close contact with the employers and employees by that correct decision is possible.

Risk and Uncertainty

Risk refers to decision making situations under which all potential outcomes and their likelihood of occurrences are known to the decision-maker.

Uncertainty refers to situations under so which either the outcomes and for their Probabilities of occurrences are unknown to the decision-maker.

Economic risk is the chance of loss because all possible outcomes and their probability of happening are unknown.

Uncertainty exists when the outcomes of managerial decisions. Cannot be predicted with absolute accuracy but all possibilities and their associated probabilities are Known.

So, in short, risk describes a situation, in which there is or chance of Loss or danger. Conversely uncertainty refers to a condition where you are not sure about the future outcomes.

Basis for comparison	Risk	Uncertainty
Meaning	The probability of winning or losing something worthy is known as risk	Uncertainty implies a situation where the future events are not known.
Ascertainment	It can be measured	It cannot be measured.
Outcome	Changes of outcomes are known	The outcome is unknown
Control	Controllable	Uncontrollable
Minimization	Yes	No
Probabilities	Assigned	Not assigned

There is an old saying, "No risk No gain", so if any enterprise wants to survive in the long run, it has to take calculated risks where the probability of loss is comparatively less, and the chances of gains are higher Uncertainty is inherent. Every business which cannot be avoided, and the business person has no idea about what will happen next, i.e. the outcome is unknown.

Classification of Managerial Problem

Basically in management there are only three types of problem, each of which requires a clear management response. They are

1. Tame problems

These are complicated but resolvable, likely to have occurred before and there is generally a limited degree of uncertainty about the issue.

2. Wicked problems

These are complex and in flexible, novel and with no apparent easy Solution. The wicked problem has the tendency to generate clear right more problems with wrong solution just better or worse alternatives. This is made worse by the high level of uncertainty around the problem and. remedies any possible

3. Critical problems

This is a crisis situation where an urgent response is needed with little time for decision making. It is essential here to manage the resolution through clear decision making to provide a decisive answer to the problem.

Decision Making under Certainty, Risk and Uncertainty

Decision-making under Certainty

A condition of certainty exists when the decision-maker knows with reasonable certainty what the alternatives are, what conditions are associated with each alternative, and the outcome of each alternative. Under conditions of certainty, accurate, measurable, and reliable information on which to base decisions is available.

The cause and effect relationships are known and the future is highly predictable under conditions of certainty. Such conditions exist in case of routine and repetitive decisions concerning the day-to-day operations of the business.

Decision making under Risk

When a manager lacks perfect information or whenever an information asymmetry exists, risk arises. Under a state of risk, the decision maker has incomplete information about available alternatives but has a good idea of the probability of outcomes for each alternative.

While making decisions under a state of risk, managers must determine the probability associated with each alternative on the basis of the available information and his experience.

Decision making under Uncertainty

Most significant decisions made in today's complex environment are formulated under a state of uncertainty. Conditions of uncertainty exist when the future environment is unpredictable and everything is in a state of flux. The decision-maker is not aware of all available alternatives, the risks associated with each, and the consequences of each alternative or their probabilities.

The manager does not possess complete information about the alternatives and whatever information is available, may not be completely reliable. In the face of such uncertainty, managers need to make certain assumptions about the situation in order to provide a reasonable framework for decision-making. They have to depend upon their judgment and experience for making decisions.

Modern Approaches to Decision making under Uncertainty

There are several modern techniques to improve the quality of decision-making under conditions of uncertainty.

The most important among these are

- (1) Risk analysis,
- (2) Decision trees and
- (3) Preference theory.

Risk Analysis

Managers who follow this approach analyze the size and nature of the risk involved in choosing a particular course of action.

For instance, while launching a new product, a manager has to carefully analyze each of the following variables the cost of launching the product, its production cost, the capital investment required, the price that can be set for the product, the potential market size and what percent of the total market it will represent.

Risk analysis involves quantitative and qualitative risk assessment, risk management and risk communication and provides managers with a better understanding of the risk and the benefits associated with a proposed course of action. The decision represents a trade-off

between the risks and the benefits associated with a particular course of action under conditions of uncertainty.

Decision Trees

These are considered to be one of the best ways to analyze a decision. A decision-tree approach involves a graphic representation of alternative courses of action and the possible outcomes and risks associated with each action.

By means of a “**tree**” diagram depicting the decision points, chance events and probabilities involved in various courses of action, this technique of decision-making allows the decision-maker to trace the optimum path or course of action.

Preference or Utility Theory

This is another approach to decision-making under conditions of uncertainty. This approach is based on the notion that individual attitudes towards risk vary. Some individuals are willing to take only smaller risks (“risk averters”), while others are willing to take greater risks (“gamblers”). Statistical probabilities associated with the various courses of action are based on the assumption that decision-makers will follow them.

For instance, if there was a 60 per cent chance of a decision being right, it might seem reasonable that a person would take the risk. This may not be necessarily true as the individual might not wish to take the risk, since the chances of the decision being wrong are 40 percent. The attitudes towards risk vary with events, with people and positions.

Top-level managers usually take the largest amount of risk. However, the same managers who make a decision that risks millions of rupees of the company in a given program with a 75 percent chance of success are not likely to do the same with their own money.

Moreover, a manager willing to take a 75 percent risk in one situation may not be willing to do so in another. Similarly, a top executive might launch an advertising campaign having a 70 percent chance of success but might decide against investing in plant and machinery unless it involves a higher probability of success.

Though personal attitudes towards risk vary, two things are certain.

Firstly, attitudes towards risk vary with situations, i.e. some people are risk averters in some situations and gamblers in others.

Secondly, some people have a high aversion to risk, while others have a low aversion.

Most managers prefer to be risk averters to a certain extent, and may thus also forego opportunities. When the stakes are high, most managers tend to be risk averters; when the stakes are small, they tend to be gamblers.

Cost Control and Cost Reduction

Cost control and cost reduction are the two very efficient tools used to reduce the cost of production and maximize profit. In simple words, Cost control is a technique used to provide the management with all the necessary information regarding the actual costs and also align them properly with the budgeted costs. On the other hand, the term cost reduction is used to save the unit cost of the product, without causing any compromise to its quality. The companies use a wide variety of techniques of cost control and cost reduction in order to carry out the process effectively.

Cost Control

The definition of cost control states that it is a process which focuses on trying to control the total cost through competitive analysis. Such practices help in aligning the original cost in agreement with the established costs.

Through this process, firms can ensure their production costs do not soar higher than the predetermined expenses. The cost control process involves several stages, which begins with the budget preparation related to production. Next, the actual performance is evaluated, followed by the calculation variances between the original cost and the budgeted cost. The next task is to investigate the reasons for the same, and the final stage involves implementing necessary actions to mend the discrepancies.

Standard costing and budgetary control are two techniques used in the cost control process. The process is a continuous one and helps to analyze the causes for the variances. It involves:

1. Determining the standards

2. Comparing the standards and looking at the results
3. Analyzing the variances
4. Establishing the action needed to be taken by the firm

Cost Reduction

The definition of cost reduction states it to be a process which aims to reduce the unit cost of a product or service manufactured by the firm without harming its quality. A number of modern and improved techniques can be used for this purpose which serves as an insight to the alternative methods to lower the production costs of every unit.

Cost reduction has a significant role in reducing per unit costs of products and is thus essential for firms to maximize their profits. This process helps in pointing out and reducing the unnecessary expenses during the production process, storage, selling or distribution of the products. The cost reduction process emphasizes the following:

1. Savings in every unit cost of production
2. The product quality should not be compromised
3. Non-volatile nature of the savings

The primary tools involved in cost reduction involve quality operation and research, better designs in products, reducing variety and evaluating jobs amongst others.

Difference between Cost Control and Cost Reduction

The importance of cost control and cost reduction is massive in businesses, but they have a few differences. The key difference between cost control and reduction include:

1. Cost control is a process which focuses on reducing the total cost of production. However, cost reduction aims at reducing per unit cost of a product.
2. Cost control is a quick process by nature, while cost reduction is a more permanent process.
3. The cost control process ends when the required target is met. On the other hand, the cost reduction process is a continuous process which does not end after a certain time. It is primarily focused on eliminating unnecessary costs.

4. Cost control does not provide any promises regarding maintaining the quality of the products, but cost reduction does not affect the quality of the product even slightly.

5. The cost control process is more of a function to prevent the cost before their occurrence while the cost reduction process is more of a function used to resurrect the expenses.

Thus cost control and reduction are an essential part of any organization willing to boost their profits.

Basis for Comparison	Cost Control	Cost Reduction
Meaning	A technique used for maintaining the costs as per the set standards is known as cost control.	A technique used to economic the unit cost without cost without lowering the quality of the product is known as cost reduction.
Savings in	Total cost	Cost per unit
Retention of quality	Not guaranteed	Guaranteed
Nature	Temporary	Permanent
Emphasis on	Past and present cost	Present and future cost
Ends when	The pre-determined target is achieved	The pre-determined target is achieved
Type of Function	Preventive	Corrective

Unit –III

Pricing Methods

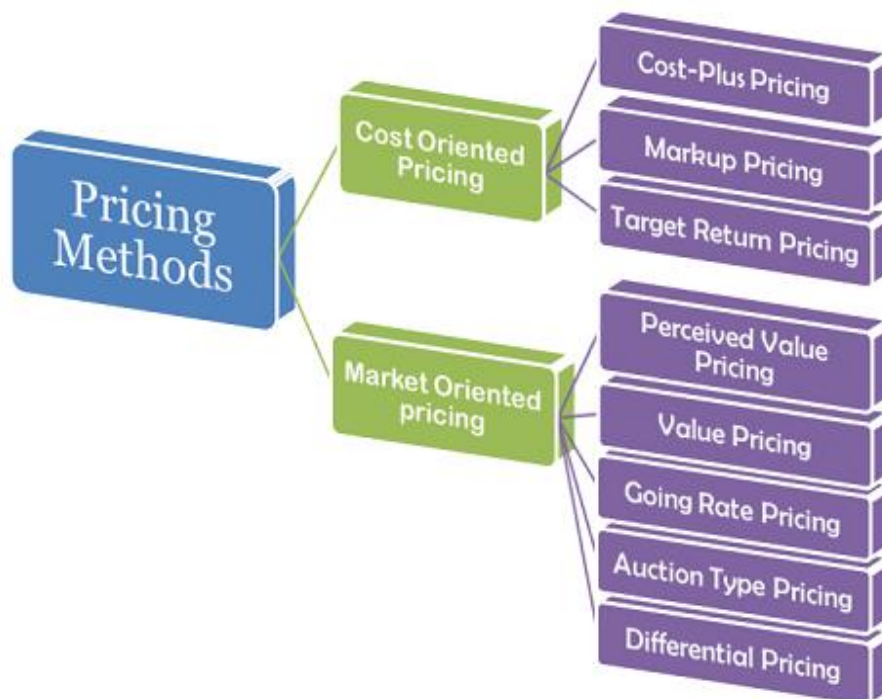
Definition

The **Pricing Methods** are the ways in which the price of goods and services can be calculated by considering all the factors such as the product/service, competition, target audience, product's life cycle, firm's vision of expansion, etc. influencing the pricing strategy as a whole.

The pricing methods can be broadly classified into two parts:

I. Cost Oriented Pricing Method

II. Market Oriented Pricing Method



I. Cost Oriented Pricing Method

Many firms consider the **Cost of Production** as a base for calculating the price of the finished goods. Cost-oriented pricing method covers the following ways of pricing:

1. Cost-Plus Pricing

It is one of the simplest pricing methods wherein the manufacturer calculates the costs of production incurred and add a certain percentage of markup to it to realize the selling price. The markup is the percentage of profit calculated on total cost i.e. fixed and variable cost.

E.g. If the Cost of Production of product-A is Rs 500 with a markup of 25per cent on total cost, the selling price will be calculated as Selling Price= cost of production + Cost of

Production	x	Markup	Percentage/100
Selling	Price=500+500	x	0.25= 625

Thus, a firm earns a profit of Rs 125 (Profit=Selling price- Cost price)

2. Markup pricing

This pricing method is the variation of cost plus pricing wherein the percentage of markup is calculated on the selling price.

E.g. If the unit cost of a chocolate is Rs 16 and producer wants to earn the markup of 20 per cent on sales then mark up price will be:

Markup	Price	=	Unit	Cost/	1-desired	return	on	sales
Markup	Price	=		16/1-0.20		=		20

Thus, the producer will charge Rs 20 for one chocolate and will earn a profit of Rs 4 per unit.

3. Target-Return pricing

In this kind of pricing method the firm set the price to yield a required Rate of Return on Investment (ROI) from the sale of goods and services.

E.g. If soap manufacturer invested Rs 1,00, 000 in the business and expects 20 per cent ROI i.e. Rs 20,000, the target return price is given by:

Target return price= Unit Cost + (Desired Return x capital invested)/ unit sales
Target Return Price=16 + (0.20 x 100000)/5000 Target Return Price= Rs 20

Thus, Manufacturer will earn 20 per cent ROI provided that unit cost and sale unit is accurate. In case the sales do not reach 50,000 units then the manufacturer should prepare the break-even chart wherein different ROI's can be calculated at different sales unit.

II. Market Oriented Pricing Method

Under this method price is calculated on the basis of market conditions. Following are the methods under this group:

1. Perceived Value Pricing

In this pricing method, the manufacturer decides the price on the basis of customer's perception of the goods and services taking into consideration all the elements such as advertising, promotional tools, additional benefits, product quality, the channel of distribution, etc. that influence the customer's perception.

E.g. Customer buy Sony products despite less price products available in the market, this is because Sony company follows the perceived pricing policy wherein the customer is willing to pay extra for better quality and durability of the product.

2. Value Pricing

Under this pricing method companies design the low priced products and maintain the high-quality offering. Here the prices are not kept low, but the product is re engineered to reduce the cost of production and maintain the quality simultaneously.

E.g. Tata Nano is the best example of value pricing, despite several Tata cars, the company designed a car with necessary features at a low price and lived up to its quality.

3. Going-Rate Pricing

In this pricing method, the firms consider the competitor's price as a base in determining the price of its own offerings. Generally, the prices are more or less same as that of the competitor and the price war gets over among the firms.

E.g. in Oligopolistic Industry such as steel, paper, fertilizer, etc. the price charged is same.

4. Auction Type pricing

This type of pricing method is growing popular with the more usage of internet. Several online sites such as eBay, Quikr, OLX, etc. provides a platform to customers where they buy or sell the commodities. There are three types of auctions:

a. English Auctions

There is one seller and many buyers. The seller puts the item on sites such as Yahoo and bidders raise the price until the top best price is reached.

b. Dutch Auctions

There may be one seller and many buyers or one buyer and many sellers. In the first case, the top best price is announced and then slowly it comes down that suit the bidder whereas in the second kind buyer announces the product he wants to buy then potential sellers competes by offering the lowest price.

c. Sealed Bid Auctions

This kind of method is very common in the case of Government or industrial purchases, wherein tenders are floated in the market, and potential suppliers submit their bids in a closed envelope, not disclosing the bid to anyone.

5. Differential Pricing

This pricing method is adopted when different prices have to be charged from the different group of customers. The prices can also vary with respect to time, area, and product form.

E.g. the best example of differential pricing is Mineral Water. The price of Mineral Water varies in hotels, railway stations and retail stores.

Thus, the companies can adopt either of these pricing methods depending on the type of a product it is offering and the ultimate objective for which the pricing is being done.

6. Product Line Pricing (PLP)

Product line pricing is a pricing strategy that was one product with various class distinctions. An example would be a car model that has various model types those changes with performance and quality. This pricing process is evaluated through consumer value perception, production costs of upgrades and other cost and demand factors.

Product line pricing is used when a primary product is offered with different features or benefits, essentially creating multiple "different" product or services.

Mark Up and Mark down

Markup is how much to increase prices and Mark down is how much to decrease prices. To calculate markup, we need to find out how much more our prices are than the cost to produce the item. Then we are dividing the difference by the cost to produce them.

Resale Price Maintenance

Resale price maintenance is a form of vertical price control by the manufactures between the various stages of distribution channel.

Under this method, manufacturers maintaining a uniform retail selling price of branded products. They fix and stipulate the prices below which goods should not be resold at any outlets.

Forms of Resale Price Maintenance

1. Collective resale price maintenance
2. Individual resale price maintenance

Advantages

1. It eliminates price competition at the retail level, as uniform price will be set.

2. It ensures price stability
3. It prevents quality deterioration
4. Fixation of fair selling price restricts excessive profiteering
5. It promotes fair trade practices
6. It promotes the interest of the consumers.

Cigarettes, tobacco, rubber tyres and tubes, shoes, engineering and electronics goods industries provide the example of resale price maintenance.

Disadvantage

1. It kills competition.
2. It may keep the price higher.
3. It is associated with restricted trade practices and price discrimination. Hence this was declared illegal under MRPT Act.

Dual pricing

Dual pricing is the practice of setting different prices in different markets for the same product or service. This tactic may be used by a business for a variety of reasons, but it is most often an aggressive move to take market share away from competition. Dual pricing is similar to price discrimination.

When dual pricing is implemented, a company is able to offset a low price in a new market with an established higher price in a mature market. That allows the company to subsidize the losses in the new market while expanding its foot print.

Brand value

Brand value is the financial amount your brand is worth. While brand value is based on an amount on the balance sheet, brand equity is the value of a brand based on how important a customer views that brand. Brand value can affect a company's revenue and the overall market.

Unit – IV

Profit Management and Profit Theories

Profit in business usage the excess of total revenue over total cost during a specific period of time. In economics, profit is the excess over the returns to capital, land, and labour (interest, rent, and wages).

To the economist, much of what is classified in business usage as profit consists of the implicit wages of manager-owners, the implicit rent on land owned by the firm, and the implicit interest on the capital invested by the firm's owners. In conditions of competitive equilibrium, "pure" profit would not exist, because the competitive market would cause the rates of return to capital, land, and labour to rise until they exhausted the total value of the product. Should profits emerge in any field of production, the resulting increase in output would cause price declines that would eventually squeeze out profits.

The real world is never one of complete competitive equilibrium, though, and the theory recognizes that profits arise for several reasons. First, the innovator who introduces a new technique can produce at a cost below the market price and thus earn entrepreneurial profits. Secondly, changes in consumer tastes may cause revenues of some firms to increase, giving rise to what are often called windfall profits. The third type of profit is monopoly profit, which occurs when a firm restricts output so as to prevent prices from falling to the level of costs. The first two types of profit result from relaxing the usual theoretical assumptions of unchanging consumer tastes and states of technology. The third type accompanies the violation of perfect competition itself.

Profit management

Profit management means the manipulation of financial statement items within the framework of accounting standards that may be for the benefit of the opportunity. This may be through accruals or for managers to increase their rewards to manage profits and show more profits.

Why is Profit management important?

Profit equals a company's revenue minus expenses. Earning a profit is important to a small business because profitability impacts whether a company can secure financing from a

bank, attract investors to fund its operations and grow its business. Companies cannot remain in business without turning a profit.

Accounting Profit and Economic Profit

Accounting profit is the net income for a company, which is revenue minus expenses. Accounting profit includes explicit costs, such as raw material and wages.

Economic profit is similar to accounting profit, but it includes opportunity costs. Economic profit includes explicit and implicit costs. Which are implied or imputed costs.

The term “profit” may bring images of money to mind, but to economists, profit encompasses more than just cash. In general, profit is the difference between costs and revenue, but there is a difference between accounting profit and economic profit. The biggest difference between accounting and economic profit is that economic profit reflects explicit and implicit costs, while accounting profit considers only explicit costs.

Explicit cost

A direct payment made to others in the course of running a business, such as wages, rent, and materials, as opposed to implicit costs, which are those where no actual payment is made.

Implicit cost

The opportunity cost equal to what a firm must give up in order to use factors which it neither purchases nor hires.

Economic profit

The difference between the total revenue received by the firm from its sales and the total opportunity costs of all the resources used by the firm.

Accounting profit

The total revenue minus costs, properly chargeable against goods sold.

Explicit and Implicit Costs

Explicit costs are costs that involve direct monetary payment. Wages paid to workers, rent paid to a landowner, and material costs paid to a supplier are all examples of explicit costs.

In contrast, implicit costs are the opportunity costs of factors of production that a producer already owns. The implicit cost is what the firm must give up in order to use its resources.

In other words, an implicit cost is any cost that results from using an asset instead of renting, selling, or lending it. For example, a paper production firm may own a grove of trees. The implicit cost of that natural resource is the potential market price the firm could receive if it sold it as lumber instead of using it for paper production.

Accounting Profit

Accounting profit is the difference between total monetary revenue and total monetary costs, and is computed by using generally accepted accounting principles (GAAP). Put another way, accounting profit is the same as bookkeeping costs and consists of credits and debits on a firm's balance sheet. These consist of the explicit costs a firm has to maintain production (for example, wages, rent, and material costs). The monetary revenue is what a firm receives after selling its product in the market.

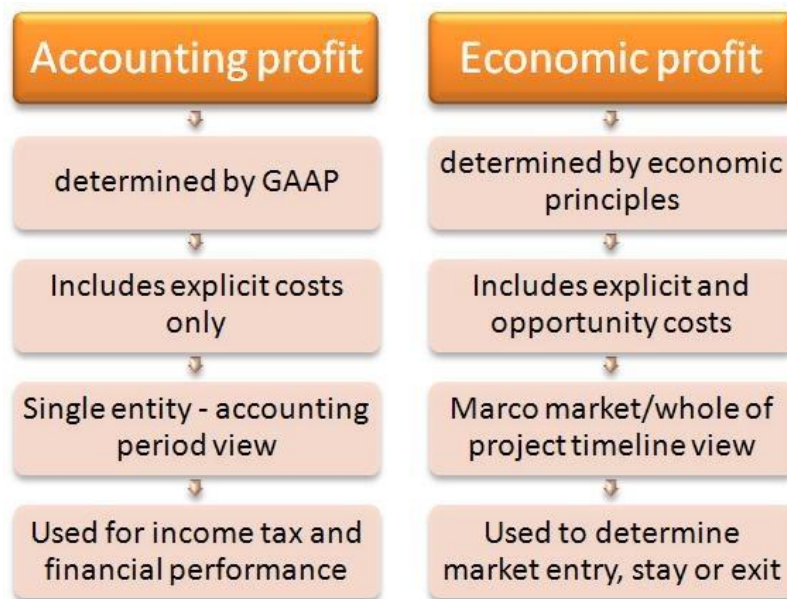
Accounting profit is also limited in its time scope; generally, accounting profit only considers the costs and revenue of a single period of time, such as a fiscal quarter or year.

Economic Profit

Economic profit is the difference between total monetary revenue and total costs, but total costs include both explicit and implicit costs. Economic profit includes the opportunity costs associated with production and is therefore lower than accounting profit. Economic profit also accounts for a longer span of time than accounting profit. Economists often consider long-term economic profit to decide if a firm should enter or exit a market.

Economic Vs Accounting Profit

The biggest difference between economic and accounting profit is that economic profit takes implicit or opportunity costs into consideration



Sources and Determinants of Profit

Whether economic profit exists or not depend how competitive the market is, and the time horizon that is being considered.

Economic profit = total revenue – (explicit costs + implicit costs). Accounting profit = total revenue – explicit costs.

Economic profit can be positive, negative, or zero. If economic profit is positive, there is incentive for firms to enter the market. If profit is negative, there is incentive for firms to exit the market. If profit is zero, there is no incentive to enter or exit.

For a competitive market, economic profit can be positive in the short run. In the long run, economic profit must be zero, which is also known as normal profit. Economic profit is zero in the long run because of the entry of new firms, which drives down the market price.

For an uncompetitive market, economic profit can be positive. Uncompetitive markets can earn positive profits due to barriers to entry, market power of the firms, and a general lack of competition.

Normal profit

The opportunity cost of an entrepreneur to operate a firm; the next best amount the entrepreneur could earn doing another job.

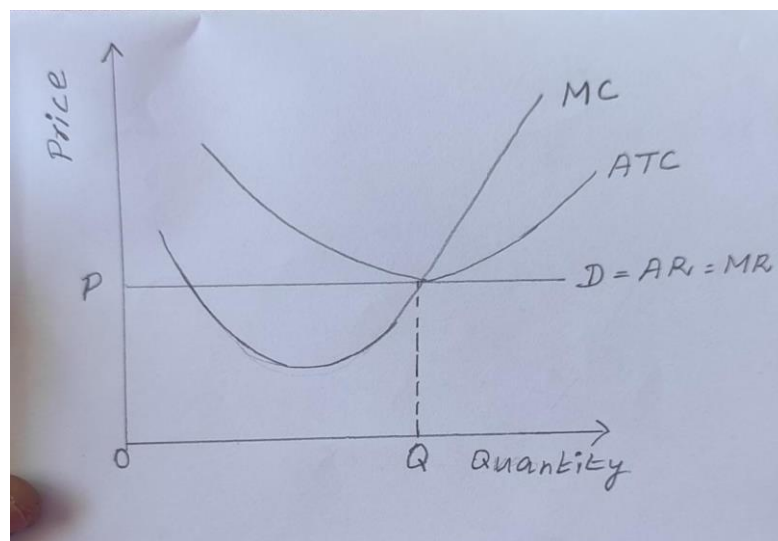
Economic profit is total revenue minus explicit and implicit (opportunity) costs. In contrast, accounting profit is the difference between total revenue and explicit costs - it does not take opportunity costs into consideration, and is generally higher than economic profit.

Economic profits may be positive, zero, or negative. If economic profit is positive, other firms have an incentive to enter the market. If profit is zero, other firms have no incentive to enter or exit. When economic profit is zero, a firm is earning the same as it would if its resources were employed in the next best alternative. If the economic profit is negative, firms have the incentive to leave the market because their resources would be more profitable elsewhere. The amount of economic profit a firm earns is largely dependent on the degree of market competition and the time span under consideration.

Competitive Markets

In competitive markets, where there are many firms and no single firm can affect the price of a good or service, economic profit can differ in the short-run and in the long-run.

In the short run, a firm can make an economic profit. However, if there is economic profit, other firms will want to enter the market. If the market has no barriers to entry, new firms will enter, increase the supply of the commodity, and decrease the price. This decrease in price leads to a decrease in the firm's revenue, so in the long-run, economic profit is zero. An economic profit of zero is also known as a normal profit. Despite earning an economic profit of zero, the firm may still be earning a positive accounting profit.



Long run Profit for Perfect Competition

In the long run for a firm in a competitive market, there is zero economic profit, graphically; this is seen at the intersection of the price level with the minimum point of the average total cost (ATC) curve. If the price level were set above ATC's minimum point, there would be positive economic profit; if the price level were set below ATC's minimum, there would be negative economic profit.

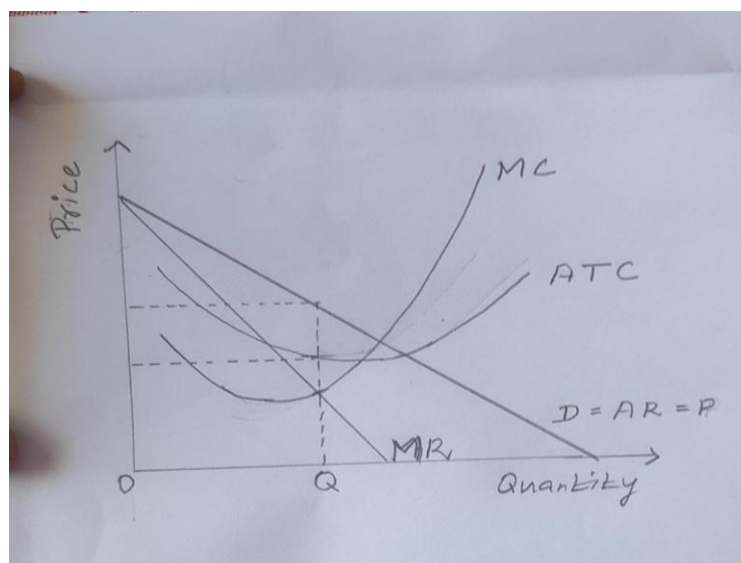
Uncompetitive Markets

Unlike competitive markets, uncompetitive markets - characterized by firms with market power or barriers to entry - can make positive economic profits. The reasons for the positive economic profit are barriers to entry, market power, and a lack of competition.

Barriers to entry prevent new firms from easily entering the market, and sapping short-run economic profits.

Market power, or the ability to affect market prices, allows firms to set a price that is higher than the equilibrium price of a competitive market. This allows them to make profits in the short run and in the long run. This situation can occur if the market is dominated by a monopoly (a single firm), oligopoly (a few firms with significant market control), or monopolistic competition (firms have market power due to having differentiated products).

Lack of competition keeps prices higher than the competitive market equilibrium price. For example, firms can collude and work together to restrict supply to artificially keep prices high.



Long Run Profit for Monopoly

In the long run, a monopoly, because of its market power, can set a price above the competitive equilibrium and earn economic profit. If price were set equal to the minimum point of the average total cost (ATC) curve, the monopoly would earn zero economic profit. If the price were set lower than the minimum of ATC, the firm would earn negative economic profit.

Theories of Profit

The theories are:

1. The Rent Theory of Profit
2. The Wage Theory of Profit
3. The Marginal Productivity Theory of Profit
4. The Dynamic Theory of Profit
5. F. W. Hawley's the Risk Theory of Profit
6. Knight's Theory or the Uncertainty-Bearing Theory
7. Modern Theory or Perfect Competition or Demand and Supply Theory of Profit.
8. Prof. Schumpeter's Innovation Theory of Profit or "Profit is the Reward for Successful Innovation".

1. The Rent Theory of Profit

This theory was developed by an American Economist Francis L. Walker. Walker has said that Profit is the rent of ability. He has made a comparative study between different grades of land and entrepreneur's different abilities. Entrepreneurs of superior ability earn Profits just as superior land earns rent. According to Walker:

"Just as there is the marginal or no rent land, similarly there exists a marginal or no Profit entrepreneur who earns only wages of management. The marginal or no-profit entrepreneur is the least efficient one earning Profit not beyond an amount just sufficient to keep him or to carry on in his present industry. The industry managed and run by the

marginal entrepreneur is similar to marginal land. Just as the land which is at margin is no rent, land, similarly, the marginal entrepreneur earns no profit.”

But there are other industries under the control of entrepreneurs possessing superior abilities which yield Profits. The entrepreneur with superior ability earns Profit as the reward over the ability of the marginal or no-profit entrepreneur. Thus it can be said that the essential nature of Profit does not differ from that of rent because we are aware that rent is a differential surplus accruing to the superior land over the marginal or no rent land, similarly profit is a differential surplus which accrues to the superior ability entrepreneur over the marginal or no-profit entrepreneur.

Criticism

- a. This theory is unrealistic.
- b. It is not a true surplus as Marshall has said.
- c. Profits only in a dynamic state.
- d. Profit is not gift of ability.
- e. This theory overlooks the important function of the entrepreneur as a risk-bearer.
- f. This theory fails to explain the main causes of the size of Profits.
- g. Profits do not enter into price this cannot be said here.

2. The Wage Theory of Profit

This theory was popularized and put forward by Prof. Taussig and Davenport the two most prominent economists. According to them – “Profits are best regarded as simply a form of wages. They accrue to the entrepreneur on account of his special ability.” They have argued that there is very close similarity between a labourer and entrepreneur. Just as labourers receive wages for his services, similarly entrepreneurs receive profit for his service.

The entrepreneur performs mental labour like - teachers, doctors, lawyers etc. But the only difference between entrepreneur and other mental workers is that the entrepreneur receives profit for his special ability and hard work. This is a surplus amount which the

entrepreneurs receive after meeting all expenses of production where as the wage forms a part of the cost of production.

Criticism

- a. Element of risk and uncertainty.
- b. Profit is flexible, it may vary.
- c. This theory is silent over the payment to shareholders.
- d. Entrepreneurs windfall or chance profits

3. The Marginal Productivity Theory of Profit

This theory was propounded by Prof. Marshall. According to him, “Profit is equal to the marginal productivity of the entrepreneur. He has said that the amount which the community is liable to produce with the help of entrepreneur over and above what it could produce with his help.”

Recently Stigler and Stonier and Hague have said that “Profit is the reward of an entrepreneur which is determined by its marginal revenue productivity, the higher are the profits and lower the marginal revenue productivity, the lower are the profits of an entrepreneur.”

Criticisms

- a. This theory is based on unrealistic assumptions.
- b. This theory fails to determine profit accurately.
- c. The concept of marginal revenue productivity of entrepreneurship is a meaningless concept.
- d. It is one sided theory.
- e. This is a static theory.

f. This theory has not taken into account the windfall or chance or gain or even monopoly profits.

4. The Dynamic Theory of Profit

Prof. J. B Clark propounded this theory in the year 1900. According to him—"Profit is the difference between the price and the cost of the production of the commodity". But Profit is the result of dynamic change. Further, Prof. Clark was of this opinion that in a stationary state having static economic conditions of demand and supply, there can be no real or pure profit as a surplus. In a stationary economy, the quantum of capital invested, methods of production, managerial organization, technology, demand pattern etc. remain constant.

Under competitive conditions, price tends to equal average costs; hence, the surplus is zero. So, no pure profit but there may be some frictional profits emerging due to frictions in the system. But, this cannot be regarded as real Profits.

Profit is the result exclusively of six dynamic changes i.e.

- (1) Changes or increase in population.
- (2) Changes in tastes and preferences.
- (3) Multiplication of wants.
- (4) Capital formation.
- (5) Technological advancement and
- (6) Changes in the form of business organization.

On account of these changes the economy tends to be dynamic. Demand and supply conditions are altered. Some entrepreneurs may get advantageous business positions against others and may reap surplus over costs, as a real profit. In short, those who take advantage of changing situation can earn real profits according to their efficiency.

Inefficient and careless producers who fail to move with dynamic changes may not get any real profit and may even incur losses. Thus, Clark's dynamic theory of Profit has an element of truth as it emphasis the dynamic aspect of Profit.

Criticism

- a. All changes are not foreseen.
- b. This theory gives artificial dichotomy.
- c. All changes do not lead to Profit.
- d. Here, the concept of frictional Profit is vague.
- e. Element of risk involved in business.

5. F. W. Hawley's the Risk Theory of Profit

This theory of Profit is associated with F. B. Hawley who has considered the risk-taking as the important function of an entrepreneur. The entrepreneur exposes his business to risk, and in turn he receives a reward in the form of Profit because the task of risk-taking is irksome.

It is definite that no entrepreneur will like to undertake risks if he gets only the normal return. Therefore, the reward for risk-taking must be higher than the actual value of the risk. Further, it has been said that the actual value of the risk.

Further, it has been said that more risky the business, the higher is the expected Profit rate. As Professor D. M. Holland has said that "riskier the industry or firm, the higher is its Profit rate." But he was warned that this tentative view must be tested in depth.

Criticism

- a. There cannot be functional relationship between Risk and Profit.
- b. Profit is not based on entrepreneur's ability.
- c. It is an incomplete theory.
- d. Amount of Profit not related to size of risk involved.
- e. Concentrates mostly on risk and not on anything else.

6. Knight's Theory or the Uncertainty-Bearing Theory

Prof. Knight's theory of uncertainty bearing theory of Profit is an improvement and refinement theory of Profit over Hawley's risk-bearing theory of Profit. Here, Profit according to Knight, is the reward of bearing non-insurable risks and uncertainties. It is a deviation arising from uncertainty.

Uncertainty prevails in the entire society and profits, positive or negative, in a way accrues to all factor services. In other words, there is profits element in all types of income. But the division of social income between Profit and contractual income depends on the supply of entrepreneurial ability.

Uncertainty bearing is the most important function in a dynamic state. It is the entrepreneur who either delegates this function among different personnel or assumes it himself. The expectation of Profit is, in a way, the supply price of entrepreneurial uncertainty-bearing. In a competitive economy where there is no risk, every entrepreneur will have a minimum supply price.

In short Knight's theory implies that:

(i) Profit is reward for uncertainty-bearing.

(ii) The un-measurable risks are termed as uncertainty. These un-measurable risks are true hazards of business.

(iii) Pure Profit is, however, a temporal and unfixed reward. It is turned with uncertainty. Once the unforeseen circumstances become known, necessary adjustment would be possible. Then pure Profit disappears.

Criticism

a. This theory does not give clear notion of entrepreneurship therefore it has been called unrealistic.

b. Difficulty in the distribution of profit.

c. This theory fails to expose the phenomenon of monopoly profit.

d. Profit is not a residual income.

e. This theory has not said anything on monopoly profit.

f. Above all, the uncertainty element cannot be qualified to improve profits.

7. Modern Theory or Perfect Competition or Demand and Supply Theory of Profit

This modern theory of Profit defines the entrepreneur as a business enterprise itself and 'Profits' as his net income. In this theory profits have been regarded as the reward of an entrepreneur and are governed by the demand for and supply of entrepreneur.

Demand for Entrepreneurs

The demand for entrepreneurs mostly depends upon the level of industrial development, the elements of uncertainty in the industry, the scale of production and the marginal revenue productivity of entrepreneurship. If the level of industrial progress is high, the scale of production is large and efficiency and productivity increase, the profits will be high. The marginal revenue productivity of entrepreneurship is the most important factor in influencing the demand for entrepreneurs.

Supply of Entrepreneurs

Similarly, the supply of entrepreneurs depends upon various factors like the availability of capital, the existence of managerial and technical personal, the number of entrepreneurs and the condition of society etc. The larger the availability of capital, the larger is the supply of entrepreneur's capital may be available in sufficient amount, but an entrepreneur has to depend largely on the managers and other technical personal for organizing and running the business successfully.

If trained managerial and other personal are available in the market, the supply of entrepreneurs is bound to increase. Further, the economists are also of this opinion that the size of population is another factor that influences entrepreneurship. The larger the size of population, the higher will be the demand for various products which will attract more people to entrepreneurship and the supply of entrepreneurs will increase.

Criticism

While criticizing this theory Knight has said that Profit has been regarded as the reward for bearing non-insurable risks and uncertainties, then under perfect competition there can be no profit in the long-run. It is a static state where population, capital, technology, tastes, business organization and income do not change.

If they change they can be predicted. Thus, there is no risk and uncertainty. The marginal revenue productivity curve of entrepreneurship would be zero. Therefore, Profit will also be zero. In a static state, profits exist because Profits are not competed away due to the presence of imperfect competition. So what entrepreneurs earn are monopoly profits rather than pure profits. It should be remembered that manager entrepreneurs earn wages of management and capitalist entrepreneurs earn interest.

8. Prof. Schumpeter's Innovation Theory of Profit or "Profit is the Reward for Successful Innovation"

Schumpeter deemed Profit as the reward to enterprise and innovation. In his opinion, the entrepreneur initiates innovation in the business and when he succeeds, he earns Profit as his reward. Now, the question is what is innovation? "Innovation means commercial application of new scientific inventions and discoveries."

An innovator is, therefore a businessman with vision, foresight and originality and is bold enough to bear high risks involved in undertaking new activities on a new basis. The innovator is not a scientist, but he successfully introduces new inventions on a commercial basis.

In giving opinion over this Samuelson has written as an example "The scientific theory of radio wave was the brain-work of Maxwell. It was experienced upon by Hertz and its commercially profitable use was carried out by Marconi and Sarnoff, who are the innovators in radio manufacturing."

Innovation is of two types

- (i) Product innovations and
- (ii) Market innovations.

Product innovations affect the cost and quality of the product while market innovations include discovery and exploitation of new market, introducing new variety of products and product improvement, modes of advertising and sales propaganda etc. It has been said that any form of innovation leads to a Profit. It is called as innovational profit. This Profit is uncertain and unpredictable. It is temporary in nature.

Criticism

- a. Schumpeter has never considered Profit as the reward for risk-taking:
- b. There is no place of uncertainty in Schumpeter's innovation theory:
- c. This theory is incomplete:

Unit V

Capital Budgeting

Capital budgeting is made up of two words ‘capital’ and ‘budgeting’. In this context, capital expenditure is the spending of funds for large expenditures like purchasing assts and equipment, repairs to fixed assets or equipment, research and development, expansion and the like. Budgeting is setting targets for projects to ensure maximum profitability.

What is Capital Budgeting?

Capital budgeting is a process of evaluating investments and huge expenses in order to obtain the best returns on investment. An organization is often faced with the challenges of selecting between two projects/investments or the buy Vs replace decision. Ideally, an organization would like to invest in all profitable projects but due to the limitation on the availability of capital an organization has to choose between different projects/investments. Capital budgeting as a concept affects our daily lives. Let’s look at an example-

Definition of Capital Budgeting

Milton H. Spencer has said that “Capital Budgeting involves the planning of expenditure for assets, the returns from which will be realized in future time periods.”

According to Charles T Homgreen/ Harengren, “Capital Budgeting is long term planning for making and financing proposed capital outlays.”

According to E. E. Nemeses “Capital Budgeting or Capital Management may be defined as the process of determining which investment of allocations of long terms funds are to be made by an enterprise.”

Joel Dean in his book has written “Capital Budgeting is a kind of thinking that is necessary to design and carry through the systematic programmes for investing stockholders money.”

According to G. C. Philipptes “Capital Budgeting is concerned the allocation of the firm’s scarce financial resources among the available market opportunities. The consideration

of investment opportunities involves the comparison of the expected future streams of earnings from a project, with the immediate and subsequent stream of expenditures for it.”

On Capital Budgeting Sri R. N. Anthony has expressed his views which are as such “Capital Budgeting as essentially a list of what management believes to be worthwhile projects for the acquisition of new capital assets together with the estimated cost of each project.”

On the basis of analytical study of above definitions, it can be concluded that capital budgeting is the planning of long-term regular return on these investments.

Need of Capital Budgeting

The Capital Budgeting is essential and its need has been considered because in its absence the firm may face heavy losses. If the rate of return is not considered and long-term investments are undertaken, this may result in losing projects or low return projects at the cost of most profitable projects.

Further, the Capital Budgeting is necessary, so that the proposal is examined in its all aspects. The area of Capital Budgeting is therefore a most important function of the managerial decision making.

To elaborate the need of Capital Budgeting has been considered essential due to the following reasons:

1. Here large sums of money are involved and to make proper agreements, to cope with financial commitments well in time.

2. Long run nature of fund commitments: Funds once invested cannot be taken back easily without making substantial loss.

3. The investment decisions broaden the base on which profit is earned and calculated.

This can be earned mostly through return on capital employed, so that the overall average return is in no way adversely affected.

4. To study implications of long term investment.

Long-term investment decisions are more extensive mainly for two reasons.

(a) The effect of the decisions extend beyond the accounting period, therefore its correctness or otherwise cannot be known readily and

(b) These decisions are subject to higher degree of risks and uncertainty due to time factor involved.

Therefore, the Capital Budgeting is necessary, so that the proposed is examined in its all aspects. The area of Capital Budgeting is most important function of the managerial decision making.

Objectives of Capital budgeting

Capital expenditures are huge and have a long-term effect. Therefore, while performing a capital budgeting analysis an organization must keep the following objectives in mind:

1. Selecting profitable projects

An organization comes across various profitable projects frequently. But due to capital restrictions, an organization needs to select the right mix of profitable projects that will increase its shareholders' wealth.

2. Capital expenditure control

Selecting the most profitable investment is the main objective of capital budgeting. However, controlling capital costs is also an important objective. Forecasting capital expenditure requirements and budgeting for it, and ensuring no investment opportunities are lost is the crux of budgeting.

3. Finding the right sources for funds

Determining the quantum of funds and the sources for procuring them is another important objective of capital budgeting. Finding the balance between the cost of borrowing and returns on investment is an important goal of Capital Budgeting.

Capital Budgeting Process

1. Identifying investment opportunities

An organization needs to first identify an investment opportunity. An investment opportunity can be anything from a new business line to product expansion to purchasing a new asset. For example, a company finds two new products that they can add to their product line.

2. Evaluating investment proposals

Once an investment opportunity has been recognized an organization needs to evaluate its options for investment. That is to say, once it is decided that new product/products should be added to the product line, the next step would be deciding on how to acquire these products. There might be multiple ways of acquiring them. Some of these products could be:

- A. Manufactured in house
- B. Manufactured by Outsourcing manufacturing the process, or
- C. Purchased from the market

3. Choosing a profitable investment

Once the investment opportunities are identified and all proposals are evaluated an organization needs to decide the most profitable investment and select it. While selecting a particular project an organization may have to use the technique of capital rationing to rank the projects as per returns and select the best option available. In our example, the company here has to decide what is more profitable for them. Manufacturing or purchasing one or both of the products or scrapping the idea of acquiring both.

4. Capital Budgeting and Apportionment

After the project is selected an organization needs to fund this project. To fund the project it needs to identify the sources of funds and allocate it accordingly. The sources of these funds could be reserves, investments, loans or any other available channel.

5. Performance Review

The last step in the process of capital budgeting is reviewing the investment. Initially, the organization had selected a particular investment for a predicted return. So now, they will compare the investments expected performance to the actual performance. In our example, when the screening for the most profitable investment happened, an expected return would have been worked out. Once the investment is made, the products are released in the market,

the profits earned from its sales should be compared to the set expected returns. This will help in the performance review.

Capital Budgeting Techniques

To assist the organization in selecting the best investment there are various techniques available based on the comparison of cash inflows and outflows. These techniques are:

1. Payback period method

In this technique, the entity calculates the time period required to earn the initial investment of the project or investment. The project or investment with the shortest duration is opted for.

2. Net Present value

The net present value is calculated by taking the difference between the present value of cash inflows and the present value of cash outflows over a period of time. The investment with a positive NPV will be considered. In case there are multiple projects, the project with a higher NPV is more likely to be selected.

3. Accounting Rate of Return

In this technique, the total net income of the investment is divided by the initial or average investment to derive at the most profitable investment.

4. Internal Rate of Return (IRR)

For NPV computation a discount rate is used. IRR is the rate at which the NPV becomes zero. The project with higher IRR is usually selected.

5. Profitability Index

Profitability Index is the ratio of the present value of future cash flows of the project to the initial investment required for the project. Each technique comes with inherent advantages and disadvantages. An organization needs to use the best-suited technique to assist it in budgeting. It can also select different techniques and compare the results to derive at the best profitable projects.

Significance of Capital Budgeting

1. It has Long-Term Effects and Implications

Capital Budgeting decisions have long term implications for the firm as they affect the future profitability of the firm and the cost structure. It influences the rate and direction of firm's growth. A wrong decision may lead the firm to a disastrous future.

2. It involves the firm's risk element

Long term commitment of funds may change the firm's risk elements. If adoption of an investment proposal increases its average earnings, these fluctuations may be risky affairs for the firm.

3. The Capital Budgeting decisions are irreversible

It should be remembered that the heavy amount invested cannot be taken back without causing a substantial loss, because it is very difficult to find a market for the second-hand capital goods.

4. Impact on company's future cost structure

In this a firm commits itself to a sizeable amount of fixed costs in terms of labour, supervisor's salary, insurance, rent of the building and so on. If the investment turns out to be unsuccessful in future or yield less than anticipated profits, the firm will have to bear the burden of fixed cost unless the asset is completely written off.

5. It also determines the cost structure of the company's product

Capital investment decisions determine the future profits and cost for the firm which ultimately affects the competitive position of the firm.

6. It facilitates cash forecast

It facilitates cash forecasts to plan the investment programmes carefully, so that the firm can meet its long-term obligations without any difficulty.

7. It protects the interest of the shareholders and of the enterprise

It avoids over-investment and under-investment in fixed assets. The management facilitates the wealth maximization of equity shareholders.

8. It assists in maintaining depreciation

Budget assists in formulating a sound depreciation and assets replacement policy.

9. It is useful in cost reduction system

Budget may be useful in considering methods of cost reduction required in the consideration of purchasing most up-to-date and modern equipment.

10. Helpful in the preparation of long term plans

Budget facilitates the management in making of the long-terms plans and assists in the formulation of General Policy.

11. It studies the impact of capital investment on the revenue expenditure of the firm

This study is mostly applicable in depreciation insurance and other fixed assets.

Nature of Capital Budgeting Problems

Every budgeting decision essentially involves four elements:

- (i) A clear idea of what the problem is?
- (ii) A good set of alternatives from amount which one can take make a choice,
- (iii) An accurate set of estimates of the likely outcomes of the alternatives, and
- (iv) An evaluation and comparison of the alternatives in the light of their cash inflows and outflows.

Thus, discussing the nature of capital budgeting problem Prof. R. M. Lynor has said, Capital Budgeting consists in planning the development of available capital for the purpose of maximizing long-term profitability (return on investment) of the firm.

Capital Budgeting involves mainly three problems

- (1) Demand for Capital - i.e., how much money will be needed for expenditure in the coming period?
- (2) Supply of Capital - i.e., how much money will be available and of what cost?
- (3) Rationing of Capital - i.e., how should the available money be distributed amongst the various projects?

(1) Demand for Capital

To study budgeting problem

1. The firm must make a survey of its capital needs.
2. This constitutes the demand for capital which is estimated by adding the requirements specified by the smallest operating units of the organization.
3. This demand for capital is derived from the process of project generation.
4. It should be remembered that the demand schedules for capital can be prepared/constructed for one or two years but not for longer or distant future; because in the long run technical changes may take place which may change the demand for capital.
5. The demand may also change due to market developments and changes in the relative prices.

(2) Supply of Capital

This is a problem to find out from where the money will come? Here, the distinction between internal and external resources of funds must be made.

(a) The chief internal resources are (i) Depreciation charges, and (ii) Retained earnings.

(b) The external sources are mainly the issue of shares and debentures to the public.

It is very important to forecast correctly as to:

- (i) How much cash to be paid out of dividend, and
- (ii) Also to decide how much of the remainder may be tied up in long-term projects?

The capital expenditure in some firms is confined completely to the amount available internally.

The amount that can be expected from accumulated:

- (a) Depreciation and
- (b) Retained earnings are the most important part of capital expenditure budgeting.

Generally these estimates are confined to one year or two years. Such projections are not matter of forecasting the level of prices and costs; they also involve management decision on the adequacy of depreciation charges the level of dividend and the necessary degree of liquidity. Thus, it can be said that as a source of capital funds plough back policy forms an integral part of Capital Budgeting.

The problem of how much to plough back can be guided by a number of principles, regarding external sources which depend upon the state of capital market, sound financial position and goodwill of the company.

(3) Rationing of Capital

Capital is a scarce source, therefore it has got cost. The return on investment must be more than the cost of capital. Only that investment should be taken into consideration which yields a better rate of return i.e., in excess of cost of capital. The cost of capital sets the minimum rate that the investment must give as return. This is infecting a deciding factor in Capital Budgeting to determine the actual investment in any place.

The basic aim of capital is to maximize the firms' long run profit potentials. We cannot take into consideration all profitable investment because the firm has limited supply of capital. In such a situation, we have to choose out the project which is most profitable.

Therefore, we can say that Capital Budgeting consists of

- (a) Determining the cost of capital.
- (b) Determining the rate of return on different investment proposals under consideration and
- (c) Deciding the proposals on the basis of their profitability and importance.

Steps Involved in Capital Budgeting

1. The Concept of a Profit Making Idea

The first step in the capital expenditure programme should be the creative search for profitable opportunities. This is also called the organization of investment proposals. The proposal may come from the side of worker of any department or from any line executive. To

facilitate the organization of such ideas a periodic review and comparison of earning costs, procedures and product line should be made by the management.

2. Long Range Capital Plans

If there is any long range capital plans, it must be verified by the management. It requires the determination of over all capital budgeting policies based upon the projections of short and long-run developments.

3. Capital Budget of Short Range

Once the timeliness and priority of a proposal have been established, it should be listed on the one year capital budget as an indicator of its approval.

4. Proper Measurement of Project Expenditure

Small project expenditure is less and the amount could be approved by the departmental head. Larger projects are ranked according to their rate of return. Any one or more tests of profitability may be used for it.

5. Screening and Selection of the Firm

Such criteria encompass the supply and cost of capital and the expected returns from the alternative investment opportunities. Once the proposal passes this stage it is authorized for outlays.

6. Establishing the Priorities

Once the accepted projects are put in priority, it facilitates their acquisition or construction, avoids costly delays and serious cost over runs.

7. Final Approval

After the financial manager has reviewed the projects he will recommend a detailed programme both of capital expenditures and of sources of capital to meet them, to the top management. Next, he may present several alternatives. Capital expenditure budgets to the top management which will finally approve the capital budget for the firm.

8. Forms and Procedures

This is a continuous phase that involves the preparation of reports for every other phase of capital expenditure programme of the company.

9. Completion and Disposal

This step marks the end of the cycle in the life of a project. It involves more than the recovery of the original cost plus any adjustment for replacement programmes.

10. Evaluation of the Programme After it has been fully implemented

While doing evaluation we must study- was the net investment greater than anticipated? Were the expected net cash benefits actually realized? Management can improve its Capital Budgeting techniques for the future by an evaluation of past performance. Such an evaluation also has the advantage of forcing departmental heads to be more realistic and careful.

Capital budgeting is a predominant function of management. Right decisions taken can lead the business to great heights. However, a single wrong decision can inch the business closer to shut down due to the number of funds involved and the tenure of these projects.

Methods of Project Appraisal

1. Economic Analysis

Under economic analysis, the project aspects highlighted include requirements for raw material, level of capacity utilization, anticipated sales, anticipated expenses and the probable profits. It is said that a business should have always a volume of profit clearly in view which will govern other economic variables like sales, purchases, expenses and alike.

It will have to be calculated how much sales would be necessary to earn the targeted profit. Undoubtedly, demand for the product will be estimated for anticipating sales volume. Therefore, demand for the product needs to be carefully spelled out as it is, to a great extent, deciding factor of feasibility of the project concern.

In addition to above, the location of the enterprise decided after considering a gamut of points also needs to be mentioned in the project. The Government policies in this regard should be taken into consideration. The Government offers specific incentives and concessions for setting up industries in notified backward areas. Therefore, it has to be ascertained whether the proposed enterprise comes under this category or not and whether the Government has already decided any specific location for this kind of enterprise.

2. Financial Analysis

Finance is one of the most important pre-requisites to establish an enterprise. It is finance only that facilitates an entrepreneur to bring together the labour of one, machine of another and raw material of yet another to combine them to produce goods.

In order to adjudge the financial viability of the project, the following aspects need to be carefully analyzed:

1. Assessment of the financial requirements both fixed capital and working capital need to be properly made. You might know that fixed capital normally called 'fixed assets' are those tangible and material facilities which purchased once are used again and again. Land and buildings, plants and machinery, and equipment's are the familiar examples of fixed assets/fixed capital. The requirement for fixed assets/capital will vary from enterprise to enterprise depending upon the type of operation, scale of operation and time when the investment is made. But, while assessing the fixed capital requirements, all items relating to the asset like the cost of the asset, architect and engineer's fees, electrification and installation charges (which normally come to 10 per cent of the value of machinery), depreciation, pre-operation expenses of trial runs, etc., should be duly taken into consideration. Similarly, if any expense is to be incurred in remodeling, repair and additions of buildings should also be highlighted in the project report.

2. In accounting, working capital means excess of current assets over current liabilities. Generally, is considered as the optimum current ratio. Current assets refer to those assets which can be converted into cash within a period of one week. Current liabilities refer to those obligations which can be payable within a period of one week. In short, working capital is that amount of funds which is needed in day today's business operations. In other words, it is like circulating money changing from cash to inventories and from inventories to receivables and again converted into cash.

This circle goes on and on. Thus, working capital serves as a lubricant for any enterprise, be it large or small. Therefore, the requirements of working capital should be clearly provided for. Inadequacy of working capital may not only adversely affect the operation of the enterprise but also bring the enterprise to a grinding halt.

The activity level of an enterprise expressed as capacity utilization, needs to be well spelt out in the business plan or project report. However, the enterprise sometimes fails to

achieve the targeted level of capacity due to various business vicissitudes like unforeseen shortage of raw material, unexpected disruption in power supply, inability to penetrate the market mechanism, etc.

Then, a question arises to what extent an enterprise should continue its production to meet all its obligations/liabilities. 'Break-even analysis' (BEP) gives an answer to it. In brief, break-even analysis indicates the level of production at which there is neither profit nor loss in the enterprise. This level of production is, accordingly, called 'breakeven level'.

3. Market Analysis

Before the production actually starts, the entrepreneur needs to anticipate the possible market for the product. He/she has to anticipate who will be the possible customers for his product and where and when his product will be sold. There is a trite saying in this regard: "The manufacturer of an iron nail must know who will buy his iron nail."

This is because production has no value for the producer unless it is sold. It is said that if the proof of pudding lies in eating, the proof of all production lies in marketing/consumption. In fact, the potential of the market constitutes the determinant of probable rewards from entrepreneurial career.

Thus, knowing the anticipated market for the product to be produced becomes an important element in every business plan. The various methods used to anticipate the potential market, what is named in 'Managerial Economics' as 'demand forecasting', range from the naive to sophisticated ones.

The commonly used methods to estimate the demand for a product are as follows:

1. Opinion Polling Method

In this method, the opinions of the ultimate users, i.e. customers of the product are estimated. This may be attempted with the help of either a complete survey of all customers (called, complete enumeration) or by selecting a few consuming units out of the relevant population (called, sample survey).

(a) Complete Enumeration Survey

In this survey, all the probable customers of the product are approached and their probable demands for the product are estimated and then summed. Estimating sales under this

method is very simple. It is obtained by simply adding the probable demands of all customers. An example should make it clear.

Suppose, there are total N customers of X product and everybody will demand for D numbers of it. Then, the total anticipated demand will be $\sum_{i=1}^N D_i$

Though the principle merit of this method is that it obtains the first-hand and unbiased information, yet it is beset with some disadvantages also. For example, to approach a large number of customers scattered all over market becomes tedious, costly and cumbersome. Added to this, the consumers themselves may not divulge their purchase plans due to the reasons like their personal as well commercial/business privacies.

(b) Sample Survey

Under this method, only some number of consumers out of their total population is approached and data on their probable demands for the product during the forecast period are collected and summed. The total demand of sample customers is finally blown up to generate the total demand for the product. Let this also be explained with an example.

Imagine, there are 1000 customers of a product spread over the Faridabad market. Out of these, 50 are selected for survey using stratified method. Now, if the estimated demand of these sample customers is D_i , i.e., it refers to 1 2 3....50, the total demand for the entire group of customers will be $\sum_{i=1}^{50} n_i D_i = n_1 D_1 + n_2 D_2 + n_3 D_3 + \dots + n_{50} D_{50}$

Where n_i is the number of customers in group i , and $n_1 + n_2 + n_3 + \dots + n_{50} = 1000$.

But, if all the 1000 customers of the group are alike, then the selection may be done on a random basis and total demand for the group will be: $(D_1 + D_2 + D_3 + D_4 + \dots + D_{50}) \times 1000 / 50$

No doubt, survey method is less costly and tedious than the complete enumeration method.

(c) Sales Experience Method

Under this method, a sample market is surveyed before the new product is offered for sale. The results of the market surveyed are then projected to the universe in order to anticipate the total demand for the product.

In principle, the survey market should be the true representative of the national market which is not always true. Suppose, if Delhi is selected as a sample market, it may not be a

true representative of a small place, say Silchar in Assam simply because the characteristic features of Delhi are altogether different from those of a small town like Silchar.

Again, if we select Agra as a sample market, sales in Agra would be influenced by the size of the floating tourist's population throughout the year. But this feature is not experienced by many other places again like Silchar in Assam.

(d) Vicarious Method

Under the vicarious method, the consumers of the product are not approached directly but indirectly through some dealers who have a feel of their customers. The dealers' opinions about the customers' opinion are elicited. Being based on dealers' opinions, the method is bound to suffer from the bias on the part of the dealers. Then, the results derived are likely to be unrealistic. However, these hang-ups are not avoidable also.

2. Life Cycle Segmentation Analysis

It is well established that like a man, every product has its own life span. In practice, a product sells slowly in the beginning. Backed by sales promotion strategies over period, its sales pick up. In the due course of time, the peak sale is reached. After that point, the sales begin to decline. After, some time, the product loses its demand and dies. This is natural death of a product. Thus, every product passes through its 'life cycle'. This is precisely the reason why firms go for new products one after another to keep them alive.

Based on above, the product life cycle has been divided into the following five stages

1. Introduction
2. Growth
3. Maturity
4. Saturation
5. Decline

The sales of the product vary from stage to stage and follows S-shaped curve as shown in Figure 1:

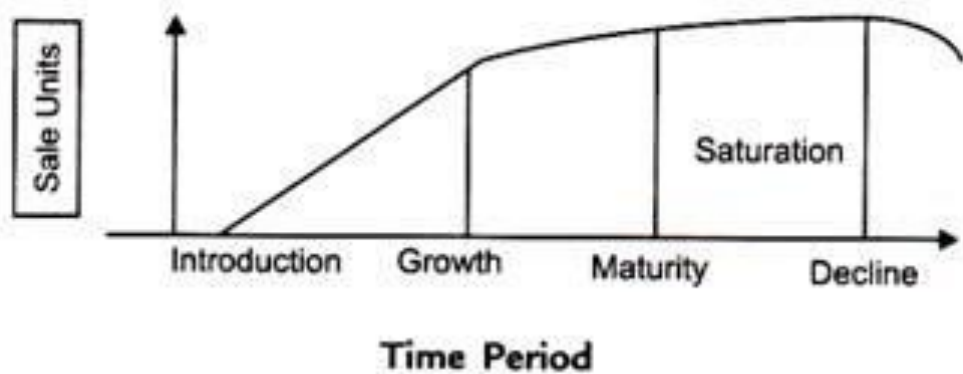


Fig. 16.1 Product Life-Cycle

Fig. 1 Product Life Cycle

Considering the above five stages of a product life cycle, the sales at different stages can be anticipated.

4. Technical Feasibility

While making project appraisal, the technical feasibility of the project also needs to be taken into consideration. In the simplest sense, technical feasibility implies to mean the adequacy of the proposed plant and equipment to produce the product within the prescribed norms. As regards know-how, it denotes the availability or otherwise of a fund of knowledge to run the proposed plants and machinery.

It should be ensured whether that know-how is available with the entrepreneur or is to be procured from elsewhere. In the latter case, arrangement made to procure it should be clearly checked up. If project requires any collaboration, then, the terms and conditions of the collaboration should also be spelt out comprehensively and carefully.

In case of foreign technical collaboration, one needs to be aware of the legal provisions in force from time to time specifying the list of products for which only such collaboration is allowed under specific terms and conditions. The entrepreneur, therefore, contemplating for foreign collaboration should check these legal provisions with reference to their projects.

While assessing the technical feasibility of the project, the following inputs covered in the project should also be taken into consideration:

- (i) Availability of land and site.
- (ii) Availability of other inputs like water, power, transport, communication facilities.

(iii) Availability of servicing facilities like machine shops, electric repair shop, etc.

(iv) Coping with anti - pollution law.

(v) Availability of work force as per required skill and arrangements proposed for training-in-plant and outside.

(vi) Availability of required raw material as per quantity and quality.

5. Management Competence

Management ability or competence plays an important role in making an enterprise a success or otherwise. Strictly speaking, in the absence of managerial competence, the projects which are otherwise feasible may fail.

On the contrary, even a poor project may become a successful one with good managerial ability. Hence, while doing project appraisal, the managerial competence or talent of the promoter should be taken into consideration.

Research studies report that most of the enterprises fall sick because of lack of managerial competence or mismanagement. This is more so in case of small-scale enterprises where the proprietor is all in all, i.e., owner as well as manager. Due to his one-man show, he may be jack of all but master of none.

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