UNIT 6   PRODUCT PORTFOLIO

Objectives

After reading this unit you should be able to

- explain the concept of Product Portfolio Analysis

- describe the various types of Product Portfolio models

- discuss the usage of Portfolio Models for Decision Making.

Structure

6.1 Introduction

6.2 The Portfolio Concept

6.3 The Logic of Portfolio Approach

6.4 Types of Display Matrices

6.5 The BCG Growth-Share Matrix

6.6 GE's Strategic Business Planning Grid

6.7 Shell's Directional Policy Matrix

6.8 PIMS Model

6.9 Arthur D Little Co. Matrix

6.10 Hofer's Market Evolution Model

6.11 Utility of Display Matrices

6.12 Portfolio Analysis and Indian Industry

6.13 Summary

6.14 Self-Assessment Questions

6.15 Further Readings

6.1 INTRODUCTION

If you observe carefully of the most business organisations deal with several products and markets simultaneously. Important decision problem in this context is `how to allocate resources to the portfolio of products and markets'? Unless the entire product portfolio is considered explicitly for decision making, suboptimal decisions are quite likely. In product portfolio analysis, all the products of the company are evaluated on important dimensions like, profitability, growth potential and associated risk involved in investment etc. This evaluation would facilitate and provide valuable inputs for deciding on investment on product market strategies like, addition of products, modification of existing products, and deletion of low performing products.

6.2 THE PORTFOLIO CONCEPT

The basis of portfolio concept lies in management of financial resources. Where in the optimal portfolio of stocks are decided based on the trade off between the expected returns and associated risk of the stock.

Drucker has suggested six-fold product classification-for effective resource allocation. His classification tends to have two product groups with positive contribution. One with marginal contribution and three with negative contributions. A fair description of these groups are as follows.

1. Tomorrow's breadwinners

2. Today's breadwinners

3. Products with potential to contribute if attended to Yesterday's breadwinners

4. Yesterday's breadwinners

5. "Also ran"

6. Failures

In this typology, resource allocation is eased on the ranking. Tomorrow's breadwinners and today's breadwinners are provided with necessary resources. Yesterday's breadwinners, "Also ran"; and Failures are deprived of resources and some times allowed to die. The products falling in rank three are provided with resources depending on the potential.

In this procedure product contribution margin is used as the sole decision making indicator, subsequently, portfolio models are developed with several criteria like, market share, market growth, profitability, expected return, risk etc.

The advantage of product portfolio analysis is that it offers a structured set of dimensions to evaluate the current products comprehensively. The dimensions may vary from different portfolio models proposed in the marketing literature. There are two kinds of portfolio models, first one suggest normative dimensions as in the case of share/growth matrix proposed by Boston Consulting Groups. Which is popularly known as BCG matrix comprising relative market share and industry growth rates as the two dimensions. On the other hand product performance matrix allow the decision-maker to identify the relevant dimensions.

The primary tasks involved in portfolio analysis are to classify the products on the dimensions of the matrix and to developing strategies to move the products on the matrix towards a target or ideal matrix. The target matrix may include potential segments, products etc.

This extended portfolio would reflect the objectives of the management, desired direction of growth. This would help in dividing guidelines for resource allocation

For constructing the product portfolio matrix three critical decisions have to be considered, namely trend of business considered for analysis, defining the served markets, and time frame for analysis.

LEVEL OF BUSINESS UNIT

Product portfolios could be •analyzed at different levels starting from Corporate, Strategic Business Units, product lines and so on, so forth.

SERVED MARKET

Product portfolios could be constructed for every segment as well as across served market segments. The served market is referred to as the market segments of the total market within which a firm actively competes. Quite often portfolio analysis is carried out not only to the served market, but for higher-level product markets also. They are in fact complementary to each other. When the portfolio is restricted to severed market the focus is on consumer point of view. Such as positioning, consumer perception about complete assortment provided to the market. At higher-level portfolio analysis the focus is more on performance of each products in the served market.

TIMEFRAME FOR ANALYSIS

The first dilemma the decision maker encounter is whether to use historical data or it should incorporate the period• for which decisions are being taken? .However, mostly historical data are used for the analysis, with an assumption that historical trends of growth are going to continue in the decision period also. In the contexts where this assumption does not hold good forecasts have to be made for the decision period and incorporated in the portfolio model.

6.3 THE LOGIC FOR PORTFOLIO APPROACH

The portfolio models proceed on analysis with the following course of thinking:

1). The opportunities for the product/market differ.

2). Products inherit different competitive strengths and exploiting opportunities.

3). In resource allocation decision for products, the major considerations are opportunity for product growth and profitability.

4). The corporate objectives would be decided based on the cumulative opportunities for all the products and competitive strength of these products.

5). Based on the corporate and individual product objectives, resources are allocated. However, it is not a straightforward process, it involves several interactions based on much involved analysis of sources and uses of resources.

6.4 TYPES OF DISPLAY MATRICES

The purpose of portfolio analysis is to optimally allocate resources for the best total return, with focus on the corporate strategies. Many different approaches involving different display matrices have evolved over the years; with the common objective of successful diversification.

1. **Boston Consulting Group's Growth-Share Matrix**

   This is two-by-two product portfolio analysis using Market Growth Rate with Relative Market Share. It identifies its segments as Dogs, Cows, Stars and Question Marks (also called Wild Cat or Problem Child). These different businesses are categorized in terms of cash flow. Each segment is then populated by bubbles whose size is proportional to the size of the business activity, expressed in terms of sales, assets or some other measure.

2. **McKinsey Matrix**

   This matrix is generally associated with General Electric and Shell Companies. It is a three-by-three matrix, which divides Industry Attractiveness and Business Strength, into low, medium, and high segments each. The parameters are compound variables of different factors, to be either subjectively judged or objectively computed based on weighted judgements.

3. **Strategic Planning Institute's Matrix**

   Strategic Planning Institute's program on Profit Impact of Market Strategy (PIMS) compares the company's profitability with the average profitability of the associated industry. DIMS matrix is based on business average profitability (PAR ROI), an industry characteristic determined by a cross-sectional, multi-dimensional regression study of the profitability to different businesses. This method avoids the judgmental weights of the previous approach, but some criticize this approach because of its heterogeneous population of dissimilar businesses.

4. **Arthur D. Little Company's Matrix**

    This matrix uses Life Cycle Stages (Embryonic, Growth, Mature and Decline) with Business Strength (Weak, Tenable, Favorable, Strong and Dominant). The grid segments are then classified into Build, Hold, Harvest and Unpredictable R.OL

5. **Hofer's Product / Market Evolution Matrix**

    This is a very similar matrix as above. Products are plotted in terms of their product/market evolution and the competitive position.

Besides the above, there are other matrices associated with different consultants who have developed them to suit their specific needs for market differentiation. We will now discuss some of the above mentioned matrices in detail, starting with the pioneering BCG matrix.

6.5 THE BCG GROWTH-SHARE MATRIX

BCG Portfolio Analysis is based on the premise that majority of the companies carry out multiple business / products / activities in a number of different product-market segments. Together these different businesses form the Business Portfolio, which can be characterized by two parameters:

1. Company's relative market share for the business, representing competitive position of the firm, and
2. The overall growth rate of the business.

The BCG model proposes that for each business activity within the corporate portfolio a separate strategy must be developed depending on its location in a two-by-two matrix of high and low segments on each of the above mentioned axes. These parameters are discussed in detail below.

Relative Market Share is stressed on the assumption that the relative competitive position of the company would determine the rate at which the business generates cash. An organisation with a higher relative share of the market compared to its competitors will have higher profit margins and therefore higher cash flows. (This point of view can be debated, and will be discussed later. A high market share per se may or may not be linked to high profitability or growth in future).

Relative Market Share is defined as the market share of the relevant business divided by the market share of its largest competitor. Thus, if Company X has 10 per cent, Company Y has 20 per cent, and Company Z has 60 per cent share of the market, then X's Relative Market Share is 1/6, Y's Relative market Share is 1/3, and Z's Relative Market Share is 60/20 = 3. Company Z has Company Y as its leading competitor, whereas Companies X and Y have Company Z as their leading competitor.

The selection of the Rate of Growth of the associated industry is based on the understanding that an industrial segment with high growth rate would facilitate expansion of the operations of the participating company. It will also be relatively easier for the company to increase its market share, and have profitable investment opportunities. High growth rate business provides opportunities to plough back earned cash into the business and further enhance the return on investment. The fast growing business, however, demands more cash to finance its growth.

If an industrial sector is not growing, it would be more difficult for the participating company to have profitable investments in that sector. In a slow growth business, increase in the market share of a company would generally come from corresponding reduction in the competitor's market share.

The BCG matrix classifies the business activities along the vertical axis according to the *30* `Business Growth Rate' (mean growth of the market for the product), and the `Relative
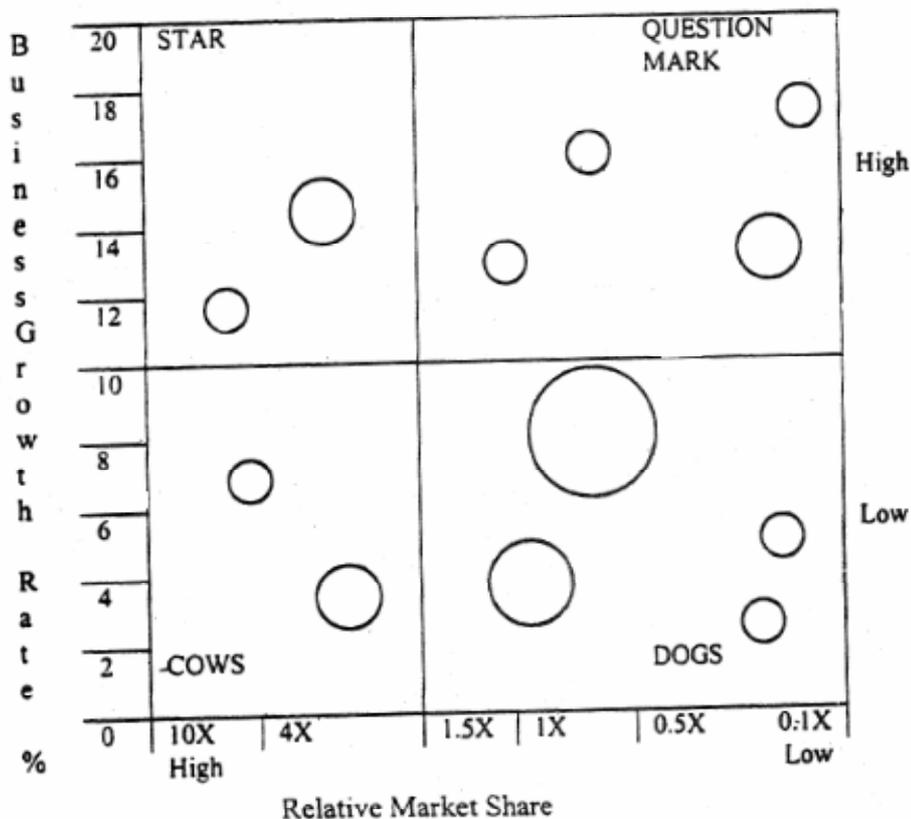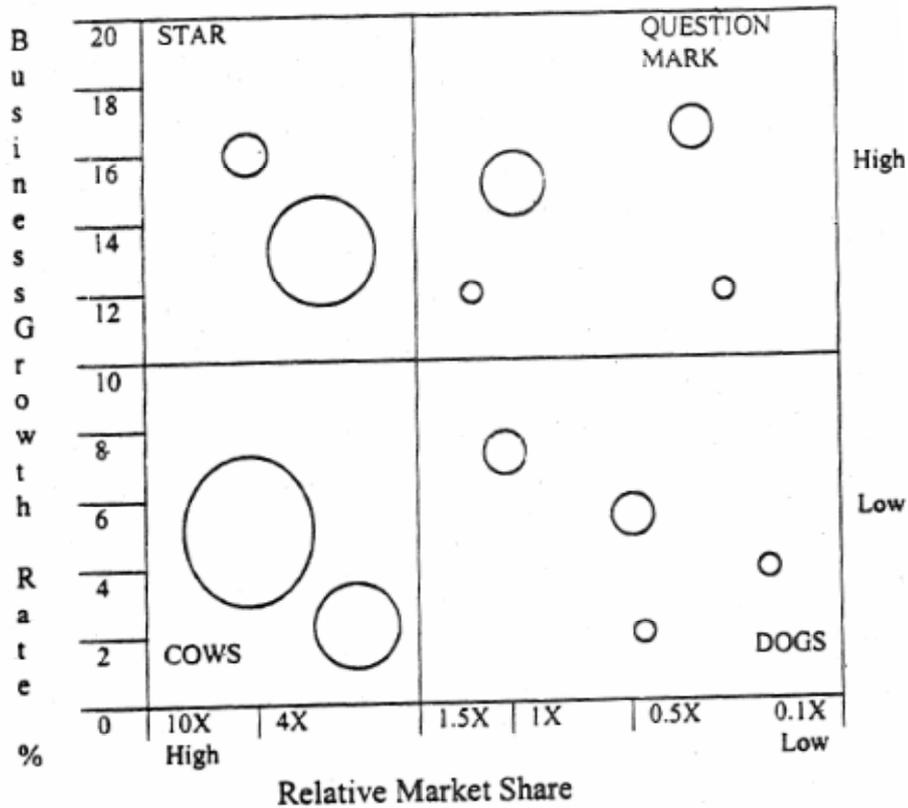
Figures 6.1 and 6.2 BCG Matrix

Market Share' along the horizontal axis. The two axes are divided into Low and High sectors, so that the BCG matrix is divided into four quadrants (refer to Figure 6.1). Businesses falling into each of these quadrants are classified with broadly different strategic categories, as explained below:

CASH COWS: The business with low growth rate arid high market share are classified in this quadrant. High market share leads to higher generation of cash and profits. The low rate of growth of the business implies that the cash demand for the business would be low. Thus, Cash Cows normally generate large cash surpluses. Cows can be `milked' for cash to help to provide cash required for running other diverse operations of the company. Cash Cows provide the financial base for the company. These businesses have superior market position and invariably low costs. But, in terms of their future potential, one must keep in mind that these. are mature businesses with low growth rate.

DOGS: If the business growth rate is low and the company's relative market share is also low, the product is classified as DOG. The low market share normally also means poor profits. As the growth rate is also low, attempts to increase market share would demand prohibitive investments. Thus, the cash required to maintain a competitive position often exceeds the cash generated, and there is a net negative cash flow.

Under such circumstances, the strategic solution is to either liquidate, or if possible harvest or divest the dog business.

QUESTION MARKS: Like Dogs, Question Marks are products with low market share but the product has a high growth rate. Because of their high growth, the cash requirement is high, but due to their low market share, the cash generated is also low.

As the business growth rate is high, one strategic option is to invest more to gain market share, pushing from low share to high. The Question mark business then moves to a Star (discussed later) quadrant, and subsequently has the potential to become cash cow, when the business growth rate reduces to a lower level.

Another strategic option is when the company can not improve its low competitive position (represented by low market share). The management may then decide to divest the Question Mark business.

These products are called Question Marks because they raise the question as to whether more money should be invested in them to improve their relative market share and profitability, or they should be divested and dropped from the portfolio.

STARS: Products, which have high growth rate and high market share, are called Stars. Such businesses generate as well as use large amounts of cash. The Stars generate high profits and represent the best investment opportunities for growth.

The best strategy regarding Stars is to make the necessary investments and consolidate the company's high relative competitive position.

BCG Matrix-Building Procedure

The Boston Consulting Group suggests the following step-by-step procedure to develop the business portfolio matrix and identify the appropriate strategies for different products.

- Classify various activities of the company in to different business segments or Strategic Business Units (SBUs).

- For each business segment determine the growth rate of the market. This is later plotted on a linear scale.

- Compile the assets employed for each business segment and determine the relative size of the business within the company.

- Estimate the relative market shares for the different business segments. This is generally plotted on a logarithmic scale.

- Plot the position of each business on a matrix of business growth rate and relative market share. A bubble represents the size of the business; a circle with a diameter corresponding to say the assets employed in that business.

For precise plotting, it has been recommended that the radius of a bubble corresponding to a business/product may be defined as:

$$r = \text{square root of } (P * R^2)$$

Where, R = radius of the large circle representing total company sales, and

P = sales of a product as percentage (expressed in decimal) of the total sales.

Arbitrary lines divide the four quadrants. In most of the cases 10 per cent volume growth is the typical dividing line between high and low growth businesses, and a relative market share of 1.5 X may separate Stars from the Question Marks in high-growth industries. On the other hand, the recommended relative market share dividing Cows and Dogs is IX for low growth industries. It is, however, added that these dividing lines are merely approximate guidelines and may be changed if desired.

BCG Matrix-Strategic Implications

Most companies will have different segments scattered across the four quadrants of the BCG matrix, corresponding to Cash Cow, Dog, Question mark and Star businesses.

The general strategy of a company with diverse portfolio is:

1. To maintain its competitive position in the Cash Cows, but avoid over-investing.
2. The surplus cash generated by Cash Cows should be invested first in Star businesses, if they are not self-sufficient, to maintain their relative competitive position.
3. Any surplus cash left with the company may be used for selected Question Mark businesses to gain market share for them.
4. Those businesses with low market share, and which can not adequately be funded may be considered for divestment.
5. The Dogs are' generally considered as the weak segments of the company with limited or no new investments allocated to them.

The BCG Growth-share matrix links the industry growth characteristic with the company's competitive strength (market share), and develops a visual display of the company's market involvement, thereby indirectly indicating current resource deployment. (The sale to asset ratio is generally stable o° e" time across industries). The underlying logic is that investment is required for growth while maintaining or building market share. But, while doing so, a strong competitive business in an industry with low growth rate will provide surplus cash for development elsewhere in the Corporation. Thus, growth uses cash whereas market competitive strength is a potential source of cash. In terms of BCG classification, the cash position of various types of businesses can be visualized as in Table 6.1.

Table 6.1
Cash Positions of Various Businesses

SL. NO.	BUSINESS TYPE	CASH SOURCE	CASH USE	NET CASH BALANCE
1.	COW	MORE	LESS	Funds available, so milk and deploy
2.	STAR	MORE	MORE	Build Competitive position and grow
3.	DOG	LESS	LESS	Divest and redeploy proceeds
4.	QUESTION MARK	LESS	MORE	Funds needed to invest selectively to competitive position

In a sense, the BCG matrix can be regarded as a pictorial representation of the sources and uses of funds statement. Market Share is considered valuable because it is a source of profits. Profits are the fruits of accumulated experience giving rise to cost advantage. The model assumes that high market growth of star businesses will subsequently slow

down, permitting the market leader to take cash out of the Cow business. Some of the underlying assumptions may not always hold true for some products. For instance, some electronic appliances and the so-called fashion goods have very short life cycles, whereas staples like bread have very extended life cycles. These businesses may therefore not follow the typical behavior pattern assumed by BCG growth-share matrix as depicted in Figure 6.3.
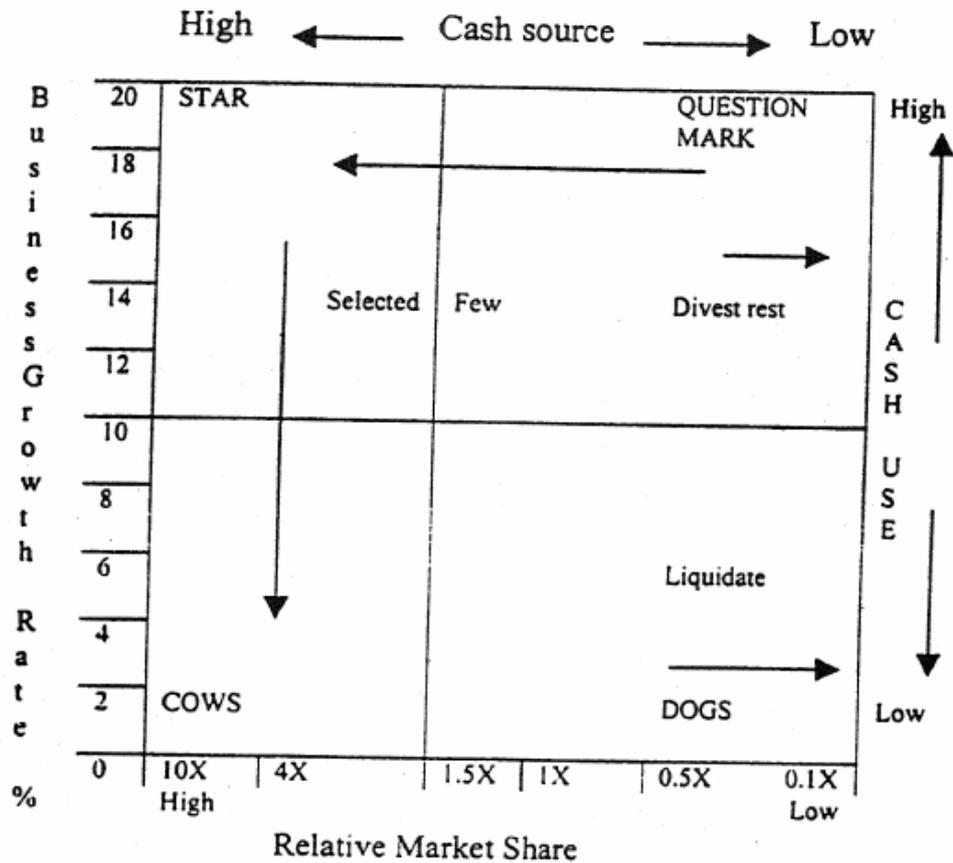
Figure 6.3 : Typical Behavioral Pattern of Businesses

BCG Matrix-Portfolio Balancing Strategy

Figures 6.1 and 6.2 show the product portfolios of Company A and Company B. Company A has stable cash source in two Cash Cows. Growth opportunities are provided by two Star businesses, whose size is such that their investment requirements can be fulfilled by Cash Cows. Out of the four Question Marks businesses, may be two can be developed into Star businesses by additional investments, whereas the other two may be gradually divested. The four Dog businesses (products) require careful attention for cash management and may be liquidated or divested. Thus, Company A has a well-balanced portfolio.

On the other hand, Company B has no major source of cash, with only small cash flow Products. Furthermore, in terms of future potential, the company has not developed any major Star products. Looking at the portfolio mix, one realises that for most of the products, the company has poor relative competitive position with many Question Mark products (but no funds to revive or convert them into Star businesses) and Dog businesses.

TIME DEPENDENCE :

Developing BCG Growth-Share Matrix at different points of time can make a useful interpretation of portfolio approach. As shown in Figure 6.4, various businesses should be

Business Growth Rate %

| 20 | STAR | | QUESTION MARK | High |

a, c, b, d, e, f, h, g

COWS

DOGS

| 0 | 10X High | 4X | 1.5X | 1X | 0.5X | 0.1X Low |

Five Years Ago

Low

Relative Market Share

Business Growth Rate %

| 20 | STAR | | QUESTION MARK | High |

a, b, k, l, j, c, e, f, L, d, g

COWS

DOGS

NOW

Low

| 0 | 10X High | 4X | 1.5X | 1X | 0.5X | 0.1X Low |

Relative Market Share

Business Growth Rate %

| 20 | STAR | | QUESTION MARK | High |

a, b, l, k, c, d, e, f

COWS

DOGS

FIVE YEARS HENCE

Low

| 0 | 10X High | 4X | 1.5X | 1X | 0.5X | 0.1X Low |

Relative Market Share

35

classified into four categories and plotted as they stand at present, as they stood three or five years ago, and as they are expected to stand three to five years from now. Thus, the impact of strategies employed by the management can be determined, and the directions in which the businesses are moving can be evaluated.

Over a period of time, the slowing down of growth in the star products may turn them into Cash Cows provided they are able to maintain their relative competitive position and high market share. However, with competition and passage of time, they may also loose their market share. If this happens then they turn into Dog businesses and require a totally different strategic attention.

Limitations of BCG Matrix

The Growth-share BCG Matrix has certain limitations and weak points that must be kept in mind while using portfolio analysis for developing strategic alternatives. These are now briefly discussed.

1. **Predicting Profitability from Growth and Market Share**

   BCG analysis assumes that profits depend on growth and market share. The attractiveness of an industry may be different from itg simple growth rate, and the firm's competitive position may not be reflected in its market share. Some other sophisticated approaches have been evolved to overcome such limitations.

   There have been specific research studies, which illustrate that the well-managed Dog businesses can also become good cash generators. These organisations relying on high-quality goods, with medium pricing and judicious expenditure on R&D and marketing, can still provide impressive return on investment of above 20 per cent.

2. **Problems in Determining Market Share**

   There is a heavy dependence on the market share of a business as an indicator of its competitive strength. The calculation of market share is strongly influenced by the way the business activity and the total market are defined. For instance, the market for helicopters may encompass all types of helicopters, or only heavy helicopters or only heavy military helicopters. Furthermore, from geographical point of view the market may be defined on worldwide, national or even regional bases. In case of complex and interdependent industries, it may also be quite difficult to determine the market share based on the sales turnover of the final product only.

3. **Effect of Experience Ignored**

   In the BCG approach, businesses in each of the different quadrants are viewed independently for strategic purposes. Thus, Dogs are to be liquidated or divested. But, within the framework of the overall corporation, useful experiences and skills can be acquired by operating low-profit Dog businesses, which may help in lowering the costs of Star or Cash Cow businesses. And this may contribute to higher corporate profits.

4. **Disregard for Human Aspect**

   The BCG analysis, while considering different businesses does not take into consideration the human aspects of running an organization. Cash generated within a business unit may come to be symbolically associated with the power of the concerned manager. As such the manager running a Cash Cow business may be reluctant to part with the surplus cash generated by his unit. Similarly, the workers of a Dog business which were decided to be divested may react strongly against changes in the ownership. They may deem the divestiture as a threat to their livelihood or security. Thus, BCG analysis could throw up strategic options, which may or may not be easy to implement.

5. **Modifications in BCG approach**

   It was in 1981 that the Boston Consulting Group realised the limitations of equating market share with the competitive strength of the company. They have admitted that

the calculation of market share is strongly influenced by the way business activity and the total market domain is defined. A broadly defined market will give lower market share, whereas a narrow market definition will result in higher- market share resulting in the company as the leader. It was, therefore, recommended that products should be regrouped according to the manufacturing process to highlight the economies of scale manufacturing, instead of stressing the market leadership.

On the other hand, BCG still maintains that for branded goods it is important to be the market leader so that the advantages of economies of scale and price leadership can be fully utilised. But they also concede that such advantages may still be achieved even if the company is not the largest producer in the industry. Some other versions of portfolio analysis have however developed much beyond these minor modifications of BCG analysis.

Activity 1

Consider a company with which you are familiar. Collect information regarding its various businesses and describe them using the BCG growth-share matrix. First give the chronology of year-wise business development and then .draw the matrix.

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6.6 GE's STRATEGIC BUSINESS PLANNING GRID

General Electric (or McKinsey) matrix uses market attractiveness as not merely the growth rate of sales of the product, but a a compound variable dependent on different factors influencing the future profitability of the business sector. These different factors are either subjectively judged or objectively computed on the basis of certain weights, to arrive at the Market Attractiveness Index. The Index is thus based on a thorough environmental assessment influencing the sectoral profitabilities.

Factors determining Industry Attractiveness

S.No.	Factors	Typical weightage
1.	Rate of growth of sales and cyclic nature of business	10%
2.	Nature of competition including vulnerability to foreign competition	15%
3.	Susceptibility to technological obsolescence and new products	15%
4.	Entry conditions and social factors	10%
5.	Size of market	10%
6.	Profitability	40%
	Total weightage	**100%**

Against each of these factors, the concerned business is rated on a scale of 1 to 10, and then the weighted score is determined from a maximum of 10. This gives the Market Attractiveness Index for the product under consideration.

**Factors determining Competitive Position of the Company as with Market .
Attractiveness:**

The Competitive Position of the company is analysed not only in terms of company's
market share, but also in terms of other factors often appearing in the Strength and
Weakness analysis of the company. Thus, product quality, technological and
managerial excellence, industrial relations etc. are also incorporated beside market
share and plant capacity.

A typical scoring of company's Competitive Position would be illustrated below:

S. No.	Factor	Weightage	Rating Score	(1-10)
	Market Share & Capacity	20%	7	0.7
2.	Growth Rate	10%	7	0.5
3.	Location & Distribution	15%	5	0.9
4.	Management Skill	20%	6	1.4
5.	Workforce Harmony	20%	7	1.6
6.	Technical Excellence including Product & Process Engineering	5%	8	0.4
7.	Company Image	10%	81.4	6.9
		TOTAL		100%

The Market Attractiveness Index is then plotted along the vertical axis and divided
into low, medium and high sectors. Correspondingly, the Competitive Position is
plotted along the Horizontal axis divided into Strong, Average and Weak Segments.
For each product in the portfolio, a circle denoting the size of the market is shown in
the 3x3 matrix grid while shaded portion corresponds to the company's market share
as shown in Figure 6.5.

Figure 6.5 : GE's Business Planning Matrix
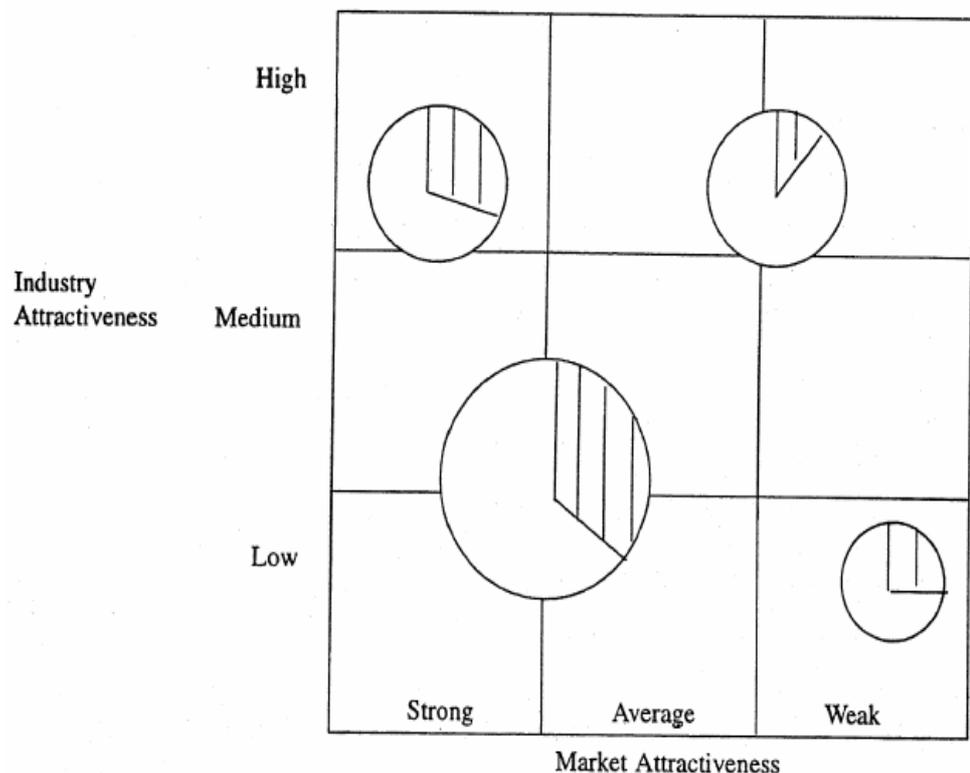
GE rates each of its businesses every year on such a framework. If Market
Attractiveness as well as GE's Competitive Position is low, a no-growth red stoplight
strategy is

adopted. Thus, GE expected to generate earnings but does not plan for any additional investments in this business. If for a business the Industry Attractiveness is medium and GE's Competitive Position is high; a growth green stoplight strategy is evolved for further investment. But if a product has high Market Attractiveness index and low GE's Competitive Position, this is branded as yellow stoplight product that may be moved either to growth or no growth category` Such grids are developed at different managerial levels. GE's Corporate Policy Committee comprising the Chairman, the Vice-Chairman, makes the final strategic decisions and Vice-Presidents of Operational areas, including finance.

6.7 SHELL'S DIRECTIONAL POLICY MATRIX

As in the case of GE's approach, the Business Prospects and Competitive Capabilities are plotted in Shell's Directional Policy Matrix. The three-by-three matrix as shown in Figure 6.6 identifies different strategies for each grid segment. These are explained below:

Figure 6.6 : Shell's Directional Policy Matrix

Directional Policy Matrix

Sectoral Prospects	Attractive	Leader	Try harder	Double or Quit
	Average	Leader Growth	Custodial	Phased Withdrawal
	Unattractive	Cash Generation	Phased Withdrawal	Disinvest
		Strong	Average	Weak

Unit's / Product Competitive Position

SI. No.	Strategy	Business	Competitive Capability	Recommended Strategy
1.	Leader	High	Strong	High priority with all necessary resources to hold high market position.
2.	Try Harder	High	Medium	Allocate more resources to move to leader position.
3.	Double or Quit	High	Weak	Pick products likely to be future high flyers for doubling and abandon others.
4.	Growth	Average	Avg.Strong	May have some strong competition with no one company as leader. Allocate enough resources to grow with market.
5.	Custodial	Average	Average	May have many competitors, so maximise cash generation with minimal new resources.
6.	Phase Withdrawal	Low	Average	Slowly withdrawn to recover most of investment.
7.	Cash Generation	Low	Strong	Spend little cash for further expansion, and use this as a cash source for faster growing businesses.
8.	Disinvest	Low	Weak	Assets should be liquidated as soon as possible and invested elsewhere.

While using the above analysis, Shell realised that the various zones were of irregular shape, some times with overlapping boundaries.

6.8 PIMS MODEL

A program for the Profit Impact of Market Strategy (PIMS) was started at General Electric, and was Later used by the Strategic Planning Institute. The PIMS program analyses data provided by member companies to discover `general laws, which determine the business strategy in different competitive environments producing different profit results'.

Unlike the earlier approaches using judgement for multidimensional factors, the SPI uses multidimensional cross-sectional regression studies of the profitability, of more than 2,000 businesses. It then develops an industry characteristic, Business Average Profitability, and compares it with the performance in the concerned company. This model uses statistical relationship estimated from past experience in place of the judgmental weights assigned for the importance of different factors behind Market Attractiveness and Competitive Position in previous approaches. This scientific objective approach has been criticised that the analysis of relationship is based on heterogeneous population, i.e., different types of business, taken at different time periods.

Profitability is closely linked with market share. A 10% improvement in profitability is linked with 5% improvement in Return on Investment (ROI). This has since been rationalised by a number of arguments, such as `the Experience Curve Effect' which implies reduction in average cost with increase in accumulated production. The larger company can use better quality management, and thus can exercise greater market power.

6.9 ARTHUR D. LITTLE COMPANY'S MATRIX

Arthur D. Little Company's matrix links the stages of the product life cycle with the business strength. On the vertical axis, the businesses are classified with respect to their business strength: Weak, Tenable, Favorable, Strong, or Dominant: Along the horizontal axis four stages in the life cycle, Embryonic, Growth, Mature and Decline are marked. (Refer Figure 6.7).

Figure 6.7 : Arthur D. Little Co.'s Matrix
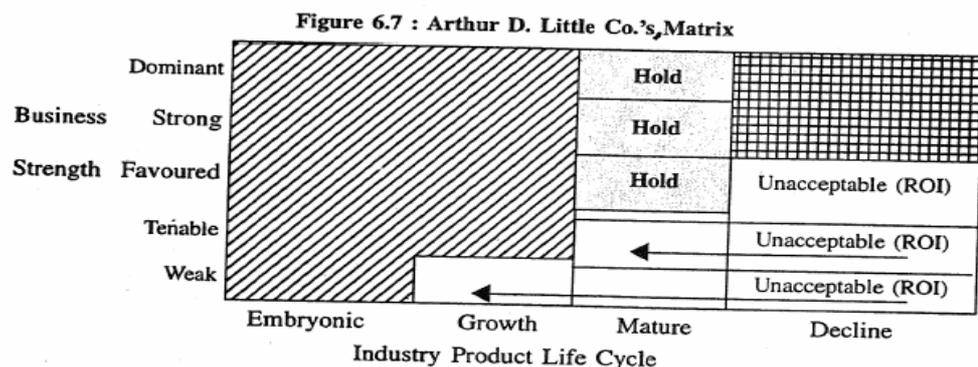
In the Embryonic and Growth stages the businesses are recommended for Build strategy, except when the Business Strength is weak. For Mature stage businesses with Dominant to favourable strength, HOLD Strategy is recommended. Harvest strategy is proposed for businesses in Decline stage, with Strong or Dominant position. For weaker businesses in Mature/Decline stage unacceptable ROI is marked.

6.10 HOFER'S PRODUCT/MARKET EVOLUTION MATRIX

Charles Hofer has proposed a three-by-three matrix where products are plotted in terms of their product/market evolution and the competitive position. Relative sizes of

Industries are shown by circles wherein the market of the company is shaded. (Figure 6.8)

Figure 6.8 : Hofer's Market Evolution
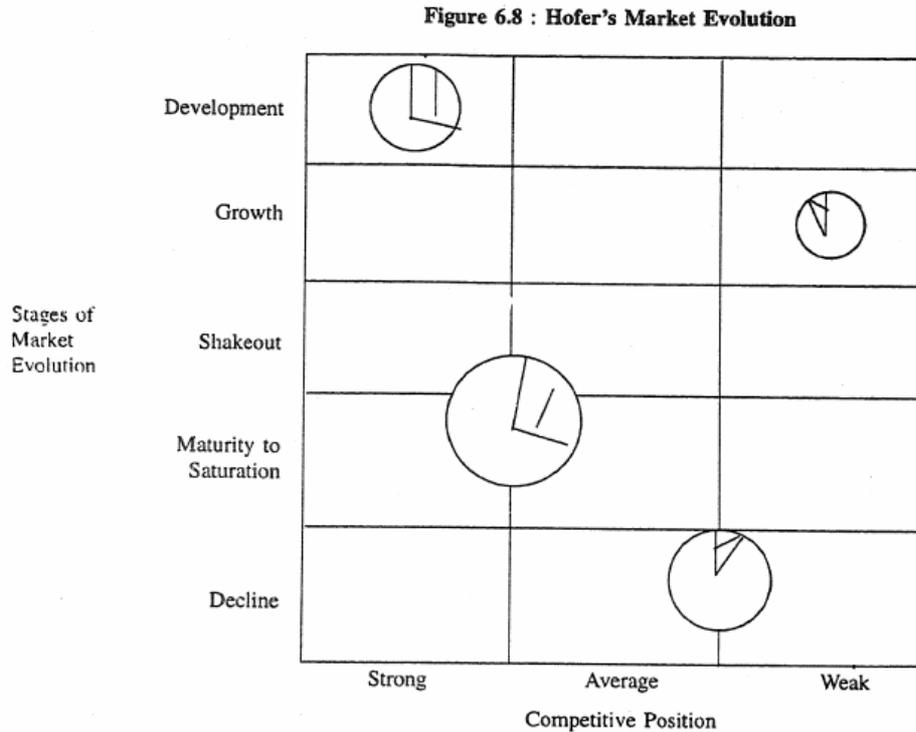
- A product in the Development or Growth stage has a potential to be a Star. If the market share is large in these growth-oriented stages, more resources must be invested to develop competitive position. But if market share is low, a strategy to improve the same must be developed. If the industry is relatively small and market share is low despite high growth stage, management must consider divesting and redeploying resources in other more competitive business.

- A business in the Shakeout or Maturity stage has a potential to he Cash Cow. Investments could be made to maintain high market share.

- A business in Decline stage with a low market share would be a Dog business. Though in the short run it may generate cash, in the long run, however, it should be considered for divestment or liquidation.

6.11   UTILITY OF DISPLAY MATMCES

It is important to note that whereas the specific names of axes differ from matrix' to matrix, they are based on quite similar principles. In one form or another most portfolio approaches try to correlate industry growth or profitability with market share, either as a direct single variable or as an index based on multiple variables. Further, these matrices are meant to facilitate a graphic display of the diversity of an organization rather than to provide precise analytical tool. The matrices help to raise critical questions about improper deployment of funds and gross mismatches in businesses, and not so much to give precise answers where and how should the next unit of money be used.

Experience shows that the portfolio analysis is not applicable where market share is not so critical, or the capital cannot be easily withdrawn. Similarly, extra care is required in utilising portfolio analysis if value added is low or cost can be lowered without experience, or technology is transferred rapidly by suppliers. Seasonality of and cyclic

businesses, IPR restrictions and `low economies of scale' also complicate the strategic outcomes from portfolio analysis.

To conclude, the models discussed here must be used to stimulate managers to think about their businesses in an integrated manner. Some companies like General Electric, Shell, and Dexter in USA have successfully utilised these conceptual frameworks to improve their performances. General Electric improved its return of profit from 3.7 per cent in 1970 to 5.9 per cent in 1976 and to 8.2 per cent in 1984. Some companies reported doubling of their return on total capital over a period of ten years by simple and systematic documentation of their resource deployment. .In general, these models should be used not in isolation but in conjunction with other analytical tools to help define questions in a better way so that better solutions, can be worked out. After two oil shocks and heavy inflation rates coupled with depressed market conditions, most of the companies do not have unlimited resources, to expand all their businesses at the same time. Portfolio analysis will help distinguish the ones to be promoted from the ones to be dropped.

Activity 2

Meet a local representative of any diversified enterprise (e.g. TATA, HLL, Dabur, Godrej, ITC, DCM, and Shaw Wallace) and gather information on its portfolio. Give your comments.

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6.12   PORTFOLIO ANALYSIS AND INDIAN INDUSTRY

Prior to the economic liberalization, in general, the freedom underlying the corporate portfolio development is not available to Indian managers. The industry is regulated to a great extent by the government policies and it is not solely in the hands of the corporate management to add new activities or delete old ones. Starting of new industrial ventures is subjected to many procedural and time-consuming clearances from the Ministry of Commerce. Monopolies and Restrictive Trade Practices Commission takes an exceptional view of large organisations with the objective of curbing concentration of financial powers in the hands of the few. The Foreign Exchange Regulation Act restricts excessive involvement of large multinational and foreign companies. The plant capacities are closely regulated and, till recently, it was difficult to attain economies of scale as the licensed capacities were allowed small increments only.

Fortunately, the governmental agencies have realised the need to have viable capacities and have permitted certain amount of freedom to industries in the form of broad banding. With these developments, corporate management's can take some actions to develop their competitive positions by increasing market shares. The companies that will move faster will benefit over others.

Unfortunately, due to a tradition of restrictive controls by the government since Independence, Indian entrepreneurs are obsessed with the idea of accumulating industrial licenses, irrespective of their competitive strengths. Projects for latest high-tech products are planned side by side with the mature and sometimes obsolete technologies. The portfolio thus emerges as highly unbalanced with no mutual congruence in terms of cash

flows, risks or the stages in their life cycles. The primary concern is to grab the license, restrict others from entering the field, and quickly make as much profit as is possible without making any worthwhile effort to further develop the technology or the products. In sellers markets of yester-years, such a strategy could 'pay rich dividends, but not any longer. As buyers become conscious of the availability of options, the traditional blue-chip companies with monopolistic market shares in the past may fall prey to market competition. Their high sounding or ambitious diversification plans may not get to the implementation stage because of lack of availability of surplus cash for investment. In the present transition period, with government policies gradually moving towards more competition in the market place, the display matrices can he useful to carry out dynamic portfolio analysis over time.

Another peculiarity of Indian situation is the legal taboo associated with divestment or liquidation of Dog businesses. The labour is protected by legislation and it becomes impossible for the management to close down businesses. Labour relations have an important role in building up a company's competitive strength. While the labour in the unorganised sector is exposed to extreme working conditions despite government rules, the workers in the organised sector are assured of absolute security irrespective of their contribution to company's competitive strength. Under such circumstances, the management should be extremely careful in seeing that their businesses remain viable, that they do not become cases for liquidation. The Indian manager's task therefore is more challenging compared to that of his counterpart in the Western countries who has options to divest, liquidate or acquire businesses.

But, at the same time we must also concede that the Indian manager is fortunate in having an overall industrial development which is still in its early stages (compared to America or Japan). For him, there is huge domestic potential market, which is still untapped. Almost any business is still in its high growth stage. The manager's will and his systematic approach nurtured by the top management are the two major critical factors for the stable growth of business in years to come. Hopefully, the framework provided by the display matrices would facilitate such systematic analysis for developing competitive strength and corporate growth.

With the economic liberalization came in to force from the early 1990s these things are fast changing: Increasingly managers are allowed to decide on the products, business, on their own. MRTP and other restrictive legislation are going through• modification to facilitate managers to take more economic and rational decisions. Regulation on mergers and acquisitions are brought in. Irk the coming years the relevance of portfolio analysis will be much more than in the past.

Activity 3

The respective market shares (product-wise) of three leading brands of tyre for the period 1977-80 are given in Table 6.2.

Table 6.2 : Tyre Industry-Leading Brand Shares

Product Category	Dunlop				Modi				MRF			
	1977		1980		1977		1980		1977		1980	
	MS*	%	MS*	%	MS*	%	MS*	%	MS*	%	MS*	%
Truck tyres	21.90	127	16.65	88	15.46	71	18.85	119	12.82	59	17.07	91
Car tyres	29.95	16	19.57	107	6.77	23	8.01	41	5.64	19	12.01	61
Truck tyres	42.36	23	28.22	161	6.17	.15	12.41	44	5.78	14	10.31	37
Jeep tyres	27.83	17	19.815	110	10.61	38	16.66	84	7.8	28	17.93	91

    * MS: Market Share (based on volume).

    % Percentage to the share of the largest competitor.

Source: Bhattacharyya, S.K. and N. Venkataraman, 198 Managing Business Enterprises - Strategies.1 Structures and System. Vikas Publications, 200.

(a) Explain and interpret the table in terms of the changes or shifts that have taken place in the market shares over the period in the light of your own knowledge and understanding of the situation.

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(b) Make further enquiries about the market growth in respective product categories and draw the product portfolio matrices for various brands and periods.

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6.13 SUMMARY

Portfolio Analysis is an important task of a product manager. It provides a framework for analysing the mutual compatibility of diverse operations of an organisation. the. portfolios of operations need to be balanced with respect to net cash flows, states of development, and the risks associated with each business activity. After discussing the need for balancing the portfolio with respect to these aspects, different types of display matrices have been introduced in this unit.

The Boston Consulting Group's Growth-Share Matrix, being the pioneering model, was first taken up for discussion in detail.

The two underlying parameters and different quadrants of the BCG Matrix were explained. A methodology for building up BCG Matrix was proposed. The strategic implications, balancing of portfolio, and variations with time were covered next. Some of the limitations of BCG Matrix with respect to determination of profitability, market share and lack of consideration for experience curve synergy and human aspects associated with strategic actions were discussed along with some of the modifications proposed by Boston Consulting Group.

The essential features of other display matrices, such as General Electric's Strategic Business Planning Grid, Shell's Directional Policy Matrix, Strategic Planning Institute's Matrix (PIMS Model) and matrices based on product life-cycle or market evolution were explained in the context of their departure from BCG Matrix. The overall utility of Product Portfolio Analysis and the relevance of display matrices in the Indian context were commented upon towards the end.

6.14   SELF-ASSESSMENT QUESTIONS

1).   What basic considerations have to be kept in mind while balancing portfolios?

2).   Explain the methodology of constructing BCG Matrix.

3).   Analyze the implications of BCG Matrix in terms of cash generation and cash use.

4).   Discuss the limitations of BCG Display Matrix. What modifications have been made in it?

5).   What advice would you give to the chief executive who has chosen to rely solely on BCG Matrix.

6).   How does the GE Planning Grid differ from the BCG Matrix?

7).   Explain Shell's Directional Policy Matrix. Is it different from GE Planning Grid?

8).   Explain and also indicate the uses of:

   a) PIMS Model

   b) Arthur D. Little Company's Matrix

   c) Hofer's Product Market Evolution Matrix.

6.15   FURTHER READINGS

Kotler, Phillip, *Marketing Management,* Prentice Hall of India Pvt. Ltd., New Delhi 2002

Kerin, *R* A, *Vijay Mahajan and Rajan P Varadarajan, Contemporary Perspectives on Strategic Market Planning.* Allyn and Bacon, Boston 1989.

Wind Y J (1982) *Product Policy: Concepts, Methods, and Strategy,* Addison-Wesley Pub Co. London.