

The Use Of The Growth-Share Matrix In Strategic Planning

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In the second of a series of three tutorials, the methodology and strategic implications of the portfolio business matrix are analyzed and illustrations given of the use of the growth-share matrix. Further refinements as well as warnings to prevent misleading conclusions are offered, and the new matrix advanced by BCG for the 1980's is outlined.

In the late 1960's the Boston Consulting Group (BCG) offered a new way to look at strategic planning activities [Henderson 1970, 1973]. In essence the BCG approach views the firm as a portfolio of businesses, each one offering a unique contribution to growth and profitability. These largely independent units have strategic directions which can be addressed separately.

In order to visualize the role played by each business unit, BCG developed the growth-share matrix, in which all the businesses in a firm are plotted on a four-quadrant grid (Figure 1). The horizontal axis corresponds to the market share enjoyed by a business relative to its

major competitor, and is a way of characterizing the strength of the firm in that business. The vertical axis indicates the percent of growth in the market in the most recent year, or the attractiveness of the market for the business. Circles represent each business, with the area within them proportional to total sales.

The growth-share matrix is helpful in three ways. First, the graphic display offers a powerful and compact picture of the strengths of the businesses in the firm's portfolio. Second, it identifies the capacity of each business to generate cash and also reveals its requirements for cash; thus it assists in balancing the firm's cash-flow. And third, because it shows

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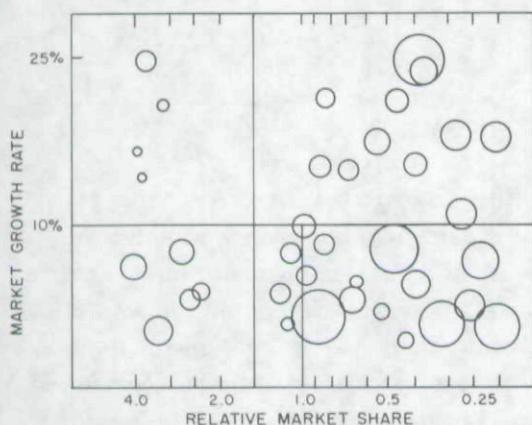


Figure 1. A typical product portfolio chart (growth-share matrix) of a comparatively strong and diversified company.

the distinct characteristics of each business unit, it can suggest strategic directions for each business. We will describe how to construct the matrix.

Measuring the Attractiveness of the Market

The market-growth rate, which is plotted in the vertical axis of the matrix, is used as a proxy for the attractiveness of the market for each of the firm's businesses. Based on data from the last year, this measure provides a static picture of the corporation at that time. For example, at the end of 1982 the market growth rate is measured as follows:

$$\text{Market Growth} = \frac{\left[\begin{array}{c} \text{Total Market} \\ 1982 \end{array} \right] - \left[\begin{array}{c} \text{Total Market} \\ 1981 \end{array} \right]}{\text{Total Market}} \times 100.$$

This indicator provides a measure of attractiveness for the total industry without regard for the position of a given firm. It is based on the business life-cycle concept, which postulates that a business follows a process of evolution with four stages: embryonic, growth, maturity, and

aging (Figure 2). Factors other than market growth also determine where a given business is in its life-cycle. Nonetheless, the market growth rate is a key indicator to the attractiveness of that business.

The business life cycle concept has enormous implications for strategic planning. When the whole industry is growing fast, a firm can penetrate that industry aggressively and increase its market share significantly without necessarily eroding the sales of competitors. Sales will continue to grow for the majority of the key competitors in the industry, but their share of the markets might be shrinking. However, in a mature or aging industry it is no longer possible for one business to increase its market share without decreasing the dollar sales of competitors. Arthur D. Little, Inc., has developed further implications of the life-cycle curve for strategic planning and has proposed its own portfolio matrix [Osell and Wright 1980].

To position a business in the growth-share portfolio matrix a cut-off point must be chosen to separate high growth from low growth businesses (Figure 1).

How is a cut-off point selected in practice? Whenever all the businesses of a firm belong to one industry, the decision is straightforward. The cut-off point is the average growth for that industry. Businesses above that level are in the em-

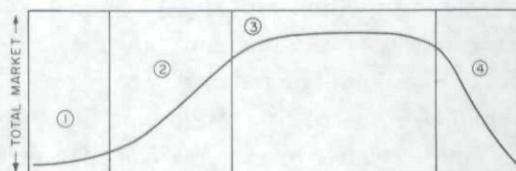


Figure 2. The business life-cycle: A business evolves through four stages: (1) embryonic, (2) growth, (3) maturity, (4) aging.

bryonic or growth stage, and those below are in the maturity or aging stage. In highly diversified firms we could use a measurement of overall economic growth, such as growth of gross national product (if the businesses are all conducted within a given country). Otherwise, a weighted average of the growth rate of each individual business would be a logical selection. Occasionally, it might be legitimate and convenient to set up as a cut-off point a corporate growth target; this will separate businesses which contribute to realizing the target from those which detract from it.

Notice that if market-growth rate is expressed in deflated dollars, the cut-off point should measure the real growth of either the industry, the economy, or the corporate target. If nominal market-growth rates are used, the definition of the cut-off point should also use nominal values.

Measuring the Internal Strength of the Business

At first glance, market share seems a logical way to identify a business' strength in a competitive environment. But how would you describe a firm in a given business that controls a 10% share of the market? Is it strong or weak? The answer depends on how fragmented the industry is. In the pharmaceutical industry, the firm would probably have an extraordinarily strong position; however, in the U.S. automobile industry, that firm would be near collapse. Following this reasoning relative market share is adopted as a measure of the internal strength of a given business. Going back to our 1982 example, relative market share is defined

as follows:

$$\text{Relative Market Share}_{1982} = \frac{\left[\begin{array}{c} \text{Business Sales} \\ 1982 \end{array} \right]}{\left[\begin{array}{c} \text{Leading Competitor's Sales} \\ 1982 \end{array} \right]}$$

Relative market share is not expressed as a percentage. It gives a ratio for the sales of a business against those of the most important competitor; for example, a relative market share of 2 means that the business' sales are two times larger than sales of the most important competitor, while a relative market share of 0.5 means that the business' sales are only half those of the leading competitor. The relative market share of each business is plotted in the growth-share matrix in a semi-log scale. The reason for doing this is that market share is linked to accumulated volume, and this in turn is related to the experience curve. The decline of costs resulting from the experience curve effect can be plotted as a straight line in a semi-log scale.

The strategic implications of the experience curve were analyzed in the first of these three papers [Hax and Majluf 1982]. Briefly stated:

Higher Market Share	Higher Accumulated Volume	Lower Costs	Higher Profitability
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The growth-share matrix requires that a cut-off point be established to separate businesses of high and low internal strength. BCG selected a relative market share of 1.0 as the cut-off point. The market leader (that is the business with relative market share greater than one), has significant strength. In our example the basic cut-off line is set at a relative market share of 1.5; at that level of competitive

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advantage, a business can truly dominate an industry (Figure 1).

Measuring the Contribution of Each Business to the Firm

Besides positioning its businesses in terms of industry attractiveness and competitive strength, a third parameter is used in the growth-share matrix to characterize the portfolio of the firm: the contribution of the business to the firm, measured in terms of sales. It is represented by the area within the circles in the matrix (Figure 1).

Sales is preferred as a measure of contribution, because it allows easy comparison with the portfolios of competitors, and it provides a good measure for comparing the strengths and weaknesses of all firms competing in an industry. Profitability measurements could be better, but those figures are difficult to obtain for the separate businesses of competitors. Moreover, even internally, using profits or return on investments to measure the contribution of a business for the firm might allow arbitrary allocation of overhead that would distort the real contribution of that business.

Cash-Flow Implications of the Growth-Share Matrix

A striking characteristic of the growth-share matrix is its simplicity. It tries to capture the complexities of a firm's portfolio in a graphical representation with only three indicators. Categorizing a firm's businesses this way has several implications; the most important concerns the transfer of cash among businesses. To visualize cash flow transactions the same growth-share matrix can be expressed in terms of cash-use and cash-generation (Figure 3).

In the previous section we divided the firm's business portfolio into four quadrants. The businesses in each quadrant also have distinctive qualities in regard to cash flow, and can be labelled with terms that have become popular jargon: "stars," "cash cows," "question marks," and "dogs."

The Stars

The Stars are the businesses in the upper-left corner of the matrix. They are highly attractive businesses (ones with high market growth), and they have strong competitive positions (high relative market share). They generate large amounts of cash because of their successful status but, at the same time, require significant cash resources to sustain their competitive strength in their rapidly growing markets. As a result, the amount of cash either contributed to or required from the firm is modest.

The Cash Cows

These businesses (in the lower left corner of the matrix) are sources of cash for the organization. Because of their extremely high competitive strength in de-

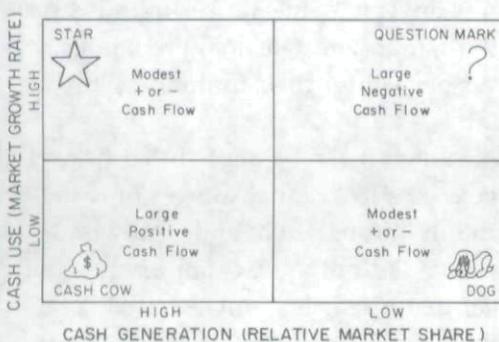


Figure 3. Cash-flow characteristics of business categories in the growth-share matrix.

clining markets, they generate more cash than they should reinvest in themselves. Therefore, they are sources of cash for developing other businesses within the firm. Ultimately, resource allocation in a firm has to be centralized at a managerial level. Otherwise, managers of cash cows will tend to reinvest the proceeds of their businesses in their own domains, sub-optimizing the use of resources.

The Question Marks

The Question Marks (in the upper right quadrant) are major untapped opportunities, very attractive because of the high market growth they enjoy. However, they have not achieved significant shares of their markets. Those businesses among them that can be successfully promoted to a leading position must be identified before committing the necessary large amounts of cash to them.

Alternatively, the firm might decide that it does not have the strength to advance the business, in spite of its attractiveness, because of the characteristics of its competitors. This calls for the toughest of decisions: that the best course of action would be to withdraw or liquidate.

The Dogs

These businesses (in the lower right quadrant) are clearly the great losers, unattractive and weak. They are "cash traps," because what little cash they generate is needed to maintain their operations. If there is no legitimate reason to expect a turnaround in the near future, the logical strategy would be harvesting or divesting.

Suggestions for Strategic Positioning

Before discussing suggestions to be extracted from the growth-share matrix

for strategic positioning of each of the businesses within a firm, we will present the philosophy underlying it.

The primary objectives of corporations, implicit in the initial conceptualization of BCG, are growth and profitability [Henderson and Zakon 1980]. The fundamental advantage that a multibusiness organization possesses is the ability to transfer cash from businesses that are highly profitable but have limited potential for growth to others that offer expectations of sustained future growth and profitability.

This leads to an integrative management of the portfolio that will make the whole larger than the sum of its parts. To obtain this synergistic result, resource allocation must be centralized and designed to produce a balanced portfolio in terms of the generation and uses of cash.

The two dimensions used to position each business in the growth-share matrix are assumed to be related to its cash generation and cash requirement characteristics. In associating relative market share with the experience curve, it is implicit that those businesses holding stronger shares will also enjoy higher profitability and, consequently, higher cash generation. Conversely, businesses in industries with high growth rates require higher levels of cash for their future development.

Although it can be argued that firms have access to external sources of cash, primarily through debt and equity issuing, inherent in the BCG approach is the belief that ultimately, any external debt will have to be matched by internal cash flow. Therefore, the balanced assignment of internal cash resources is vital to the

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Business Category	Market Share Thrust	Business Profitability	Investment Required	Net Cash Flow
Stars	Hold/Increase	High	High	Around zero or slightly negative
Cash Cows	Hold	High	Low	Highly positive
Question Marks	Increase Harvest/Divest	None or negative Low or negative	Very High Disinvest	Highly negative Positive
Dogs	Harvest/Divest	Low or negative	Disinvest	Positive

Table 1. Implications for strategic positioning emerging from the growth-share matrix.

proper development of a firm.

In addition to the balanced portfolio idea, BCG uses market share to express the strategic positioning desired for each business. They identify four major strategic thrusts in terms of market share:

- to increase market share,
- to hold market share,
- to harvest, and
- to withdraw or divest.

Although realizing these strategic thrusts would require spelling out complex programs for each business, expressed in terms of market share they convey a basic message for positioning a business in a competitive environment. Defining strategic thrust in terms of market share has been adapted and used by most of the alternative methodologies for portfolio analysis.

When we designate a strategic thrust, we summarize our basic intentions for the long term positioning of the business. Although normally a strategy is made up of a complex set of programs for action that affect all levels of the organization, the market share objective forcefully communicates the ultimate thrust of the strategy selected for that business.

Other methods of analyzing portfolios question the use of market share as an indicator of business strength, contending that many other factors should be considered in establishing the true competitive

position of a business within an industry. Even so, most other approaches retain the four categories of market share thrust as a robust way of summarizing the direction of a business.

A summary of choices for strategic positioning emerging from the growth-share matrix, is presented in Table 1. Cash-flow is assigned primarily from the surplus cash resources of cash-cow businesses, to selected question-mark businesses that require large cash investment to increase their market share.

In using portfolio analysis for strategy for more than one period, we need some guidelines to judge the desirability of movements of businesses within the growth-share matrix. The ideal sequence is one where a question mark business grows in size and strength to become a star in the first stage, and in the second stage inevitably declines in growth rate but retains the competitive strength required to become a cash-cow. In undesirable sequences, which would lead to cata-

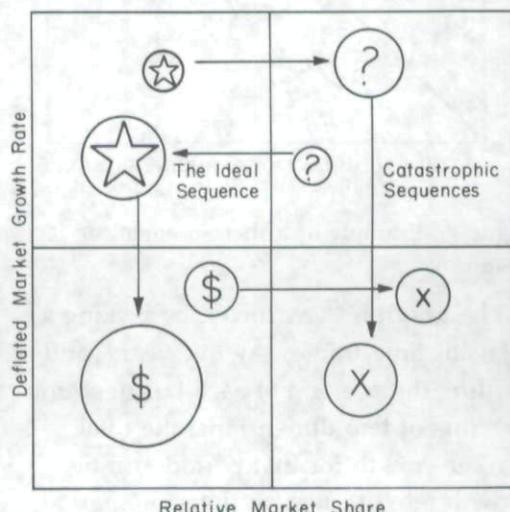


Figure 4. Conceptual sequences of business evolution.

strophic losses for a firm, businesses evolve from strong to weak positions in the market despite sales increases (Figure 4).

Measuring Historical Evolution with Growth-Share Positioning

One could argue that the graphical representation of the growth-share matrix provides just a static snapshot of the business portfolio of a firm and ignores the historical trends of those businesses. We will now address this concern.

A very powerful tool used to understand the implicit or explicit strategies of a firm is the "Share-Momentum Graph" [Lewis 1977] (Figure 5).

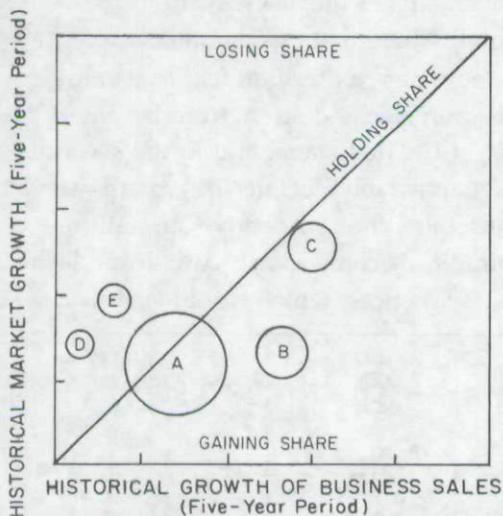


Figure 5. Example of a share-momentum graph.

The graph is constructed by picking a relevant time-frame, say five years, and plotting the position of each business unit in terms of two dimensions: the total market growth for that period and the growth rate of sales for the same period, both defined either in nominal or real terms. As before, the area within the cir-

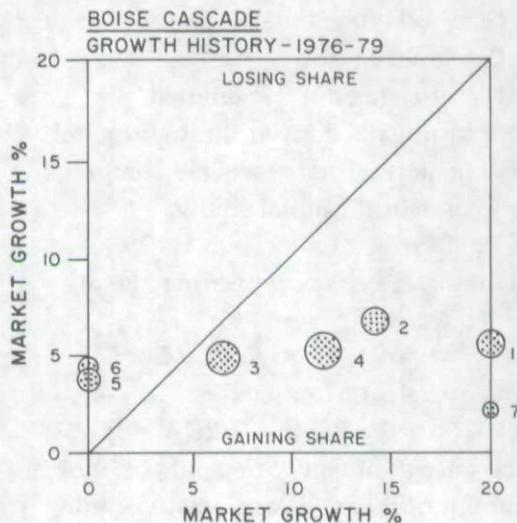
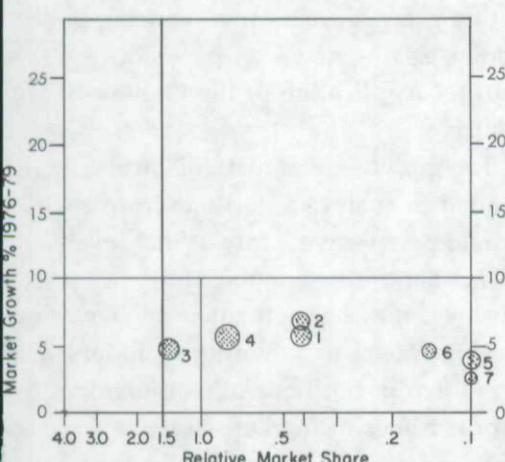
cles representing each business is proportional to total sales for the last year of the chosen period.

Those businesses that have grown at the same rate as the industry, and therefore hold their market share during the period of analysis, fall on the diagonal line. Below the diagonal line are businesses that have increased sales at a rate higher than their markets, that is they have increased their market share. Falling above the diagonal, are businesses that decreased their share of the market (Figure 5).

The implications of this chart are straightforward but quite revealing. It is entirely possible for a business in a high growth industry to experience a gain in net sales while losing market share. If managers do not know this, they may feel proud of their performance and be ignorant of the grave consequences of their decline in competitive strength. The chart can serve as a diagnostic tool for detecting trends in the growth-share positioning of businesses, and for verifying whether the historical trend is consistent with intended strategic positioning of the business.

The share-momentum chart can be applied not only to one's own firm but also to key competitors. The information required to develop the chart for key competitors is the same information used to put together the original growth-share matrix; that is, total market figures and competitors' sales information. By properly analyzing the share-momentum chart for each competitor, we can gain valuable intelligence regarding their strategies. This could reveal areas of vulnerability

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Figures 6 and 7 show the growth-share matrix and the share-momentum matrix for the paper-related business of Boise-Cascade in 1979. The information used to prepare these charts was publicly available. The growth-share matrix (Figure 6) shows that the industry is plagued by slow growth, moreover Boise has a commanding strength only in business segment 3. Business segments 5 and 7 are so weak that Boise might be divesting them. However, Figure 7 shows that the firm is retiring only from business 5, while actively promoting business 7.

that could be advantageously exploited, or areas presenting insurmountable barriers to penetration. Figures 6 and 7 show how to apply this competitive analysis to the paper-related business of Boise-Cascade Corp.

Another approach for capturing the dynamic nature of a portfolio uses the original growth-share matrix to follow the historical movements of each business unit through a sequence of time periods. We have found this tool less effective than a share-momentum chart, because erratic variations observed on a yearly analysis make the resulting chart for a five-year time frame clumsy. Also the cut-off point separating high from low market growths tends to change each year. Although this could be remedied by using an average growth rate for the five year period, such an average might hide important clues

which are revealed by yearly data. An illustration of this approach is described in Hax and Majluf [1978].

Maximum-Sustainable Growth

Maximum-sustainable growth is a critical dimension of the growth objective of the firm originally pointed out by Zakon [1976]. This concept represents the maximum growth that a firm can support using both its internal resources and its debt capabilities. Expressed in very simple terms, Zakon's formula for maximum-sustainable growth is:

$$g = p \cdot [ROA + \frac{D}{E}(ROA - i)]$$

where:

g = maximum-sustainable growth, expressed as a yearly rate of increase of the equity base

p = percentage of retained earnings

ROA = after-tax return on assets

D = total debt outstanding

E = total equity

i = after-tax interest on debt.

This formula is derived through the following steps. Total assets are computed as total debt plus total equity:

$$A = D + E.$$

Therefore, after-tax profits may be obtained as:

$$\pi = (D + E) \cdot ROA - D \cdot i.$$

An equivalent expression is:

$$\pi = E \cdot ROA + D(ROA - i).$$

The growth of equity depends on the amount of retained earnings. Assuming that p is the retention ratio (equal to retained earnings over total earnings) and that g is the growth of equity, we can establish that:

$$g = \frac{p \cdot \pi}{E} = p \cdot \left[ROA + \frac{D}{E} \cdot (ROA - i) \right].$$

If we assume that the debt-equity ratio remains constant, and that the increment of equity will be followed by a similar increment of debt, we conclude that the above expression corresponds to the actual growth of total assets under the stated conditions.

The expression just derived represents a first cut and gross approximation of maximum-sustainable growth; it assumes a stable debt-equity ratio and dividend-payout policy, as well as a fixed overall rate of return on assets and cost of debt. Although a coarse approximation, it can provide guidance for corporate growth that should be taken into consideration at the corporate level.

There are many alternative expressions for maximum-sustainable growth. We have presented the simplest in order to stress the underlying concept that a firm

faces an upper bound to its objectives for future growth unless the financing policy allows issuing new shares of stock.

Further Application of the Growth-Share Matrix

The growth-share matrix is primarily intended to analyze a portfolio from a corporate perspective. Only at that level is cash balance meaningful. However, a business may be segmented further using this diagnostic tool in order to understand the different positions of its individual product-lines or market segments.

For an example, we will depict the Norton Company portfolio at a time when the firm was confronted with a crucial strategic decision [Cushman 1979]. Norton's traditional business strength was in the abrasive industry, which was severely cyclical and had a low growth rate. Norton realized in the 1960's that it should use these profitable businesses to help it diversify into more attractive areas offering higher growth rates. The company used the growth-share matrix as the primary instrument for building its successful strategy of diversification away from the abrasive industry.

All Norton's business units were classified in terms of four categories for strategic implication. Although that conveyed a fairly meaningful message for the corporation as a whole, it was insufficient to guide the decisions of the individual managers of Norton businesses, who needed a finer segmentation of the unit under their jurisdiction. This was provided for the various market segments that are part of a business unit that may appear monolithic from the corporate level (Figure 8). The contributions of those

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market segments to the overall business unit can then be appreciated. Two markets are revealed as the most attractive ones for growth, but they have a very weak position. This suggests that a competitor is "cherry-picking"; that is, concentrating a large amount of effort on those market segments. Moreover, two other markets are shown to be in such dismal positions that the only worthwhile strategy seems to be complete withdrawal. This ability to discriminate among components of a business unit, either product-lines or market segments, is a valuable application of the growth-share matrix at the business unit level.

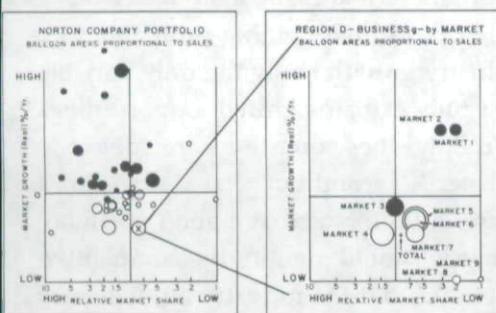


Figure 8. The figure on the left depicts corporate growth-share portfolio of the Norton Company and the one of the right depicts a finer analysis at the level of one business unit (source: Cushman, "Norton's top-down, bottom-up planning process," *Planning Review*, November 1979).

Another important use of the tool which is crucial to multinational firms is to position business units across various countries. Normally, the most puzzling and difficult problem for a business manager in a multinational setting is to deal with the complexities posed by contradictory positions of a given business operating in various countries. Using the BCG

terminology, a Star in the U.S. might be a Cash Cow in Colombia, a Dog in Germany, and a Question Mark in Saudi Arabia. It is difficult to establish a coherent international strategy in that situation (Figure 9).

Criticism of the BCG Approach

The labels popularized by BCG to classify the positions of various businesses within the firm are often criticized. Recently, Andrews [1981] described these terms as a "vulgar and destructive vocabulary." In practice, the terminology has been widely accepted, in spite of its somewhat derogatory connotation. But, who would want to manage a Cash Cow or a Dog?

Mead Company, embraced this portfolio approach as a strategic tool, but gave more elegant designations to its matrix, using the terms: "Bond" (cash cow), "Savings Account" (star), "Sweepstake" (question mark), and "Mortgage" (dog) [Aguilar 1978].

The Reliance on Market Definition

In the first paper in this series [Hax and Majluf 1982] we indicated that it could be a severe pitfall to use the achieved market share at the end of the value added chain to measure performance and, therefore, the competitive strength of the firm. Resources shared among various businesses at each functional level are ignored when market share is measured at the consumer end. For the growth-share matrix to provide a clear representation of the profitability and competitive strength of each business, it is mandatory that each business unit be portrayed as totally independent and autonomous. If in reality they are not autonomous we will be misled

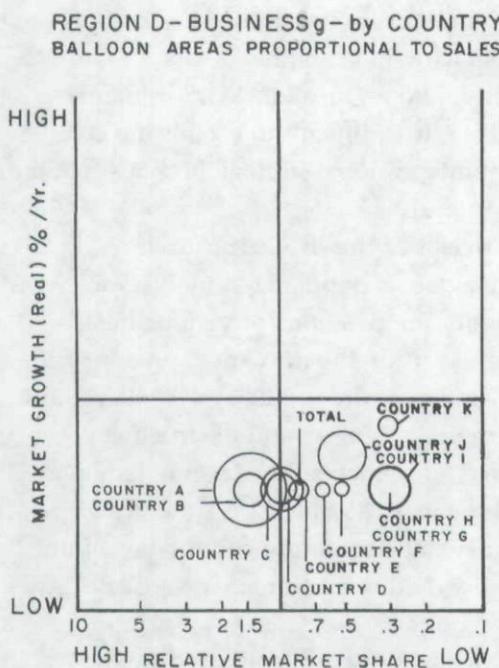


Figure 9. A finer analysis of a multinational business unit of the Norton Company (source: "Norton's top-down, bottom-up planning process," *Planning Review*, November 1979).

and be faced with Dogs in good health, Cash Cows with no milk, Question Marks without a question, and Stars that don't shine.

In a hilarious commentary published in Fortune magazine [1981], Kiechel described the BCG approach. "A balanced portfolio, according to this scheme, consisted of a few stars shining away, getting ready to be cows; the bovinity throwing off cash and occasionally dwindling toward dogdom; and the promising question marks, in their pursuit of stardom, eating cash from the cows. Any money obtained from selling off the kennel should be employed to buy or finance question marks." Obviously, managing a business portfolio cannot be reduced to such a simplistic formula.

Important also is defining the market in which a business competes. Relative market share compares a business' strength to its competitors. If the market is defined too narrowly the business invariably ends up as the leader of the segment; if it is defined too broadly the business is unrealistically represented as weak. Proper market definition is a very subtle issue, and unfortunately, this approach to business analysis rests heavily on this difficult matter.

Valid Indicators Are Needed

The growth-share matrix relies on two indicators for positioning the different business units; their validity might be questioned. Is market share really the major factor determining profitability? Is industry growth really the only variable that fully explains growth opportunities? Certainly, these questions are subject to debate. A second but related objection to these indicators is that a good portfolio analysis should identify the competitive strengths and the industry attractiveness of each business unit. Alternatives to the growth-share matrix start by establishing that these two dimensions cannot be revealed by a single measurement, but require a wider set of critical factors for reliable positioning of the business units.

Marakon's Views Challenge the Basic Premises of the BCG Approach

Marakon, a management consulting company, has presented a theoretically better grounded approach to strategic investment planning which challenges the growth-share approach.

Marakon's views can be summarized as follows [1980]:

- Growth and profitability are not gen-

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- erally tightly linked. In fact they tend to compete or tradeoff.
- Good planning should not call for passing up profitable investment opportunities.
- Ideal business portfolios are not necessarily balanced in terms of internal cash flows.

We will now briefly analyze these three statements.

The fact that growth and profitability tend to compete is easily demonstrated (Figure 10). Return on investment (*ROI*), a well-accepted measurement of short-term profitability, can be plotted against business growth to describe the investment options available to a given business unit. The horizontal cut-off line represents the business-unit cost of capital. Any investment option that falls above the line implies an attractive investment opportunity. The vertical cut-off line identifies the market growth rate for that business unit. A strategy that falls on that line corresponds to a holding market-share strategy; one to the left of the line implies a decreasing market-share strategy; one to the right of the line implies an increasing market-share strategy.

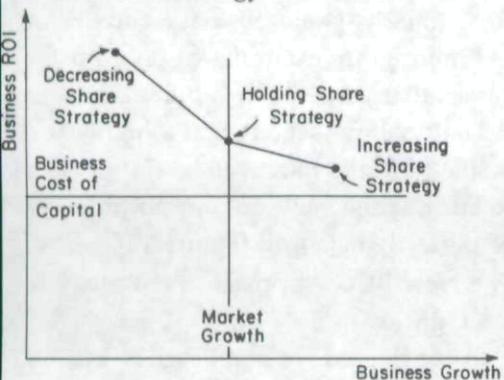


Figure 10. The tradeoff between profitability and growth.

A decreasing share strategy should be much more selective in the acceptance of its investment projects, in order to lead to a higher *ROI*. Conversely, an increasing share strategy would have to accept more marginal projects, and reduce the resulting *ROI*. This represents the profitability-growth tradeoff alluded to by Marakon.

Sound financial principles suggest that a firm should accept all projects above its cost of capital. This favors the increasing share strategy (Figure 10), regardless of the position of the business in the growth-share matrix.

The second statement of Marakon — that a firm should not pass up profitable investment opportunities — is directly linked to the previous argument. More formally, it is supported by the so-called *additivity principle* which states that every investment opportunity should be judged on its own merits and should be accepted or rejected depending on whether its projected return on investment falls above or below the cost of capital associated with that investment opportunity. In other words, there are no magic financial synergisms. The value of the firm is simply equal to the sum of the values of its components.

To explain the third statement of Marakon — that ideal portfolios are not necessarily balanced — it is useful to understand first the implications of cash generation and cash use in terms of the profitability and growth dimensions. Figure 11 provides a valuable insight into this question. The vertical axis corresponds to the *ROE* earned by a given business and the horizontal axis represents the correspond-

ing business assets growth. A business placed in the diagonal is growing at the same rate as its *ROE*, and neither generates cash nor requires cash from the firm; it is a cash-neutral business. Similarly, businesses above the diagonal are cash generators and those below the diagonal are cash consumers.

To understand this line of reasoning, consider that the total equity investment in the business is E and the earnings generated are π . By the definition of return on equity (*ROE*), we can state that

$$\pi = E \cdot \text{ROE}$$

If we apply all earnings to the same business in order to tap new investment opportunities, the business growth as measured by the growth of the total investment is

$$G = \frac{\pi}{E}.$$

This ratio is precisely the *ROE* of the business. Therefore, we can assert that a

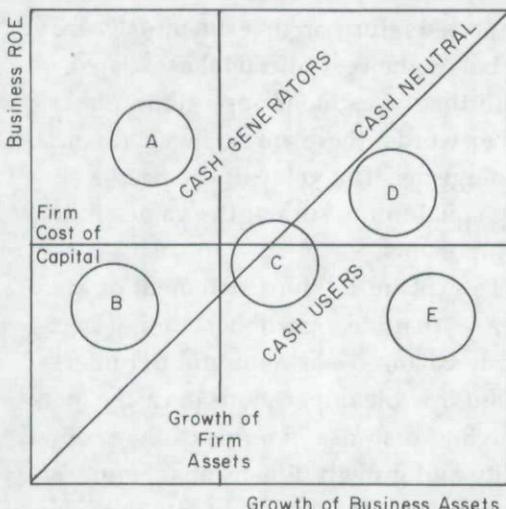


Figure 11. Cash generation and cash using characteristics of a business in terms of its growth and profitability.

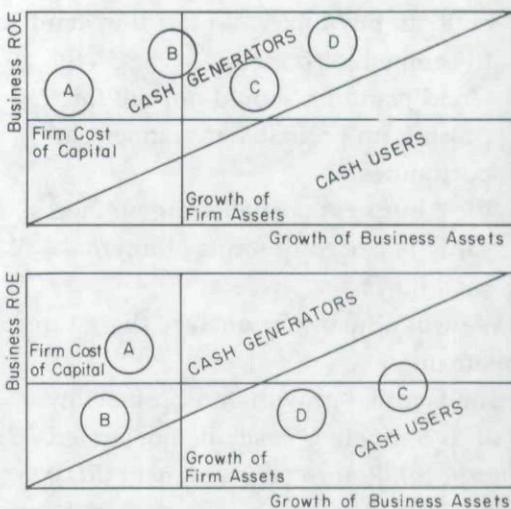


Figure 12. Examples of the relationship between the goodness of a portfolio and its cash-balance. The upper figure is an example of an excellent portfolio which is not cash-balanced. The lower figure is an example of a balanced portfolio which is not necessarily profitable.

business growing at the same rate as its *ROE* is cash neutral from the corporate perspective. This is valid under stationary conditions for growth and profitability.

We can see that there can be good businesses (that is, businesses that earn more than the cost of capital) that generate cash (for example, business A) while others require cash (for example, business D). Similarly, some businesses (depicted as B and E) are examples of poor businesses that generate or require cash.

The final message is that a highly profitable portfolio may well be out of cash balance, while a rather poor portfolio may be perfectly balanced (Figure 12).

The New BCG Approach: A Strategy for the Eighties

In conclusion we will describe BCG's new matrix designed to avoid the misleading use of the growth-share matrix, as

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well as to respond to the changing nature of the competitive environment. Commenting on the 1981 BCG Annual Prospectus, Lockridge states:

In the 1970's, high inflation coupled with low growth, increased competition in the traditional fields, added regulation, and dramatic growth in international trade, again changed the rules of the game. Strategies in pursuit of market share and low-cost position alone met unexpected difficulties as segments specialists arose and multiple competitors reached economies of scale. The most successful companies achieved their success by anticipating market evolution and creating unique and defensible advantages over their competitors in the new environment.

To characterize this new environment, BCG proposes a matrix based on two different dimensions: the size of the competitive advantage, and the number of unique ways in which that advantage can be achieved. The resulting matrix and the new four-quadrant grid recognizes four categories of businesses: "Volume," "Stalemate," "Fragmented," and "Specialization." The most appropriate strategy is different in each category and it depends on the relationship between return on investment and market share (Figure 13).

It is only in volume business that the strategies of market-share leadership and cost reduction are still meaningful. In this category, market-share and profitability are closely associated.

A typical example of this kind of industry is the American automobile industry before foreign competitors emerged.

Stalemate businesses are those where profitability is low for all competitors regardless of size. There is small difference between the most profitable and the least profitable firm (Figure 13). The American steel industry is an example of this category.

The profitability of businesses in the fragmented category is not correlated with market share. Poor performers can be large or small, and good performers are also independent of size. They differ in which of the very many ways they choose to achieve a competitive advantage. Restaurants are typical examples of this category.

Finally, in the Specialty category the largest profitability is enjoyed by small businesses able to distinguish themselves among their competitors by pursuing a focused strategy. Japanese automobile manufacturers pursued that strategy to

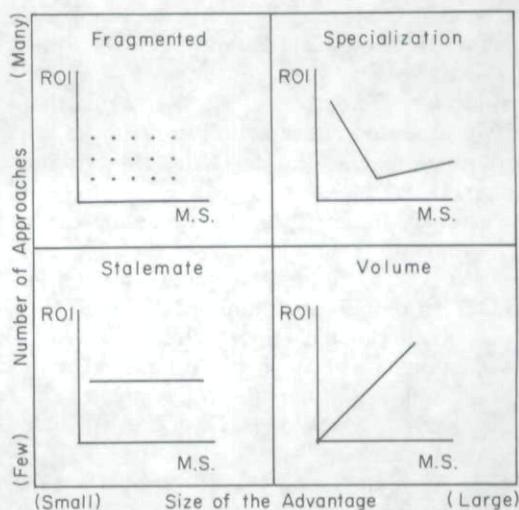


Figure 13. Underlying relationships between ROI and market share in the new BCG matrix.

enter the American automobile industry.

With this matrix the size of the advantage (the horizontal axis) is definitely linked to barriers to entry; only with high barriers can a firm sustain a long term defensible advantage over its competitors. Similarly, the number of approaches to achieving an advantage seem to be strongly linked to differentiation. At one extreme of the range of differentiation are commodity products and at the other, specialty products.

Conclusion

The growth-share matrix made a major contribution to strategic thinking and was used widely to support managerial decisions during the sixties and early seventies when the US economy was still growing. These days, a naive use of the matrix could produce inappropriate and misleading recommendations.

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