The Practical Significance of BCG (Boston Consulting Group) Matrix in the Fast Moving Consumable Sector in Ghana,Case Study of Nestle Ghana Limited

Nana Danso Boafo.

ABSTRACT

In an ever changing marketing environment where businesses have to continuously develop and maintain existing brands, product management is of critical importance to organization's sustainability. Through the tool of portfolio analysis, corporate managers ensure a healthy and balanced portfolio by optimally allocating limited resources among its SBUs and chart the best growth path for the organization. Even though BCG (Boston Consulting Group) model is widely known and adopted its significance has not been empirically tested inthe Ghanaian fast moving consumable sector. The objective of the study was to evaluate the practical significance of BCG matrix in the fast moving consumable sector in Ghana, using Nestle Ghana limited as the case study. The study was descriptive. Primary data were captured through the use of questionnaires administered to management and staff of NGL. Target population of the study was management and staff of NGL. Fifty one (51) respondents were randomly selected through purposive sampling technique. Responses were coded using T-Test and Linear Regression for the analysis. The study established that NGL uses BCG in analyzing products, and that BCG has delivered superior profitability to product analysis by determining where a product is in its PLC, which has helped in evaluating a balance portfolio. The researcher recommended that, in the fast moving consumable sector where close product management skills are needed businesses need to have a healthy balance portfolio for sustainability purposes.

Keywords: Boston Consulting Group, Portfolio Analysis, Organization Sustainability.

1. INTRODUCTION

The necessity of survival in a fast changing market has become a challenge for many businesses across the globe. This has led many businesses into diversifying either relatively or unrelatedly in an attempt to have a wilder market base. [16] (1982) opined that diversity can be a great source of competitive advantage as well as a source of fundamental difficulties. Each of these businesses in the organization's portfolio have different growth potentials, operate in different competitive environments and require different strategic decisions to ensure the achievement of the organization's overall goals and objectives. Such strategy, [53] (2010) argued

has to do with the allocation of resources (financial, human, time, and material) between these businesses or Strategic Business Units (SBUs) to ensure the organization's overall success. This is also shared by [24] (1998) who stated that any diversified organization needs to find methods for assessing the balance of businesses in its portfolio and to help guide resource allocation between them.

Undoubtedly the best known approach to portfolio analysis is the Boston Consulting Group (BCG) growth share model, which involves SBU's being plotted on a matrix according to the rate of market growth and their market share relative to that of the largest competitor. The BCG Matrix forces management to give explicit consideration both to the future potential of the market and to the SBU's competitive position. To visually display an organization's portfolio, the BCG developed a 2x2 (4 cells) matrix in which the SBUs are positioned in these cells, each, indicating revenue and cash utilization propensity. The matrix itself is divided into four cells, each of which indicates a different type of business with different cash-using and cash generation characteristics. The 4 main quadrants are; stars, cash cows, question marks and dogs. Having plotted the position of the organization's SBU's, the balance and health of the portfolio can be seen fairly readily. A balance portfolio typically exhibits certain characteristics, including a mixture of cash cows and stars. By contrast an unbalance and potentially dangerous portfolio would have too many dogs or question marks, and too few stars and cash cows. [17] (1990) agreed with this and stated that the objective of the BCG technique is to help strategic managers identify the cash flow requirements of the SBUs in their portfolio.

At the height of its success between 1972 and 1982, the BCG matrix was used by firms around 45% of the Fortune 500 ([4], 1981; [16], 1982).

Even though BCG model is widely known and adopted its significance has not been empirically studied in Ghana. An empirical study conducted by [44] (1991) revealed that no other matrix was as widely utilized and significantly important as the BCG matrix.

Even though the model is of high significance, Ghanaian companies however are faced with a lot of challenges in portfolio analysis and product management, leadingto shorter product life cycle,which in the long term affects organization's financial health. In view of the above, this research was guided by the following objectives: one, to examine if NGL uses the BCG in their product mix analysis; two, to identify the different product positions in the BCG matrix at NGL; three, to verify the significance of the BCG matrix to NGL; four, to analyze the challenges involved in the usage of the BCG matrix as a portfolio analysis to NGL. The study intends to answer these questions, one, does NGL uses BCG in their product mix analysis? Two, what are the different product positions in the BCG matrix at NGL? Three, what is the significance of the BCG matrix to NGL? Four, what are the challenges involved in the usage of the BCG matrix as a portfolio analysis to NGL? In view of the foregoing, the outcome of the study would update the database and serve as

a feedback to policy makers in designing and implementing a sound policy measure towards the effectiveness of the BCG matrix as a portfolio analysis for better performance in analyzing portfolios, production activities and their product mix, not only for the study area but also for the national economy at large.

2. LITERATURE REVIEW

2.1 Portfolio Analysis:

[31] (1992) defined portfolio analysis as "a way to assess the needs, allocate resources, and spread risk across SBUs which, taken together, contribute to the achievement of corporate objectives" (p.124). To the [15] (2012) portfolio analysis is "a systematic way of analyzing the businesses that make up an organization portfolio." (para.2) Portfolio analysis recognizes that a diversified company is a collection of businesses, each of which makes a distinct contribution to the overall corporate performance ([16], 1982). [11] (2006) share this view. To them, some SBUs offer much more attractive growth and profit opportunities than others. These SBUs will differ in terms of cash flow characteristic. Some will be net cash generators while others will require cash to grow in attractive market. Yet others would be using cash in declining market. Portfolio analysis helps the diversified firm assess the balance of business in its portfolio and guide resource allocation among them. This it does by allocating strong resources into more profitable businesses – likely its core businesses – and minimal or no resources into businesses with less or no margin.

2.1.1 Strategic Business Unit (SBU)

Strategic business unit is a unit of the company that has a separate mission and objectives and that can be planned independently from other company businesses ([34]. 1999).

According to [47] (1996), an SBU is "an organizational unit (within a larger company) that focuses on some product-markets and is treated as a separate profit center".

Garuda Indonesia, Indonesian national air carrier, defines it as "an independent unit within the company that focuses on resources-optimization to maximize company value by providing products and services to internal and third party customers."

2.2 BCG MATRIX QUADRANTS

The BCG is based on the observation that a company's business units can be classified into four quadrants based on combinations of market growth and market share relative to the largest competitor, hence the name "growth share". Market growth serves as a proxy for industry attractiveness, and relative market share serves as a proxy for competitive advantage. The growth-share matrix thus maps the business unit positions within these two important determinants of profitability

Studies by [7] (cited in [24]. 1998) also showed strong relationship between market share and profitability.
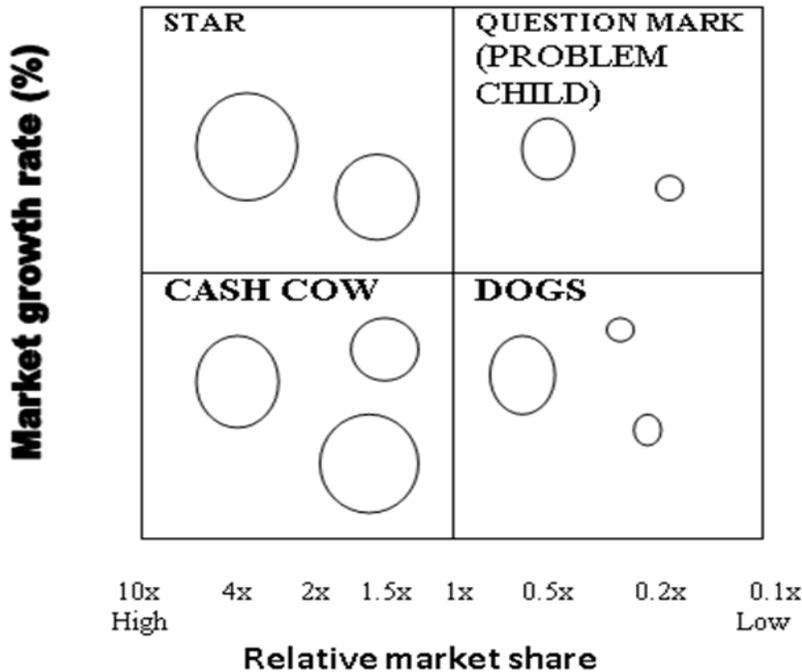
Fig 1. BCG Matrix

SOURCE: Adapted from Hendel B. In Wilson & Gilligan, 1992

The relative market share is plotted on a logarithm scale in order to be consistent with the experience curve effect which implies that profit margin or rate of cash generation differences between two competitors tends to be proportionate to the ratio of their competitive positions ([27], 1993). The mid-point is usually taken at 1.0, at which, a firm's market share is exactly equal to that of its largest competitor. A relative market share of 0.1 implies that the SBU's sales are only 10 per cent of the leader's share; a share of 2 means that the SBU is the leader and has twice the sales of its nearest follower ([11]; 2006). Putting the two dimensions – market growth rate and relative market share – together, the area of the circle in each of the four quadrants is proportional to the sales volume of each of the company's SBUs. SBUs in each quadrant thus; star, cash cow, question mark and dog exhibits different financial characteristics and offer different strategic choices.

2.2.1 STAR

Stars are SBUs with high relative market share position in high-growth market. They are the market leaders. While they generate considerable income, they require substantial investments to sustain growth ([6] 1995; [51], 1996; [2], 2007; [50], 2011). The substantial investment, [51], (1996) pointed out is needed to expand production facilities and meet working capital needs. Stars offer excellent long-term profit and growth opportunities. Drucker called these SBUs 'Tomorrow's breadwinners' (as cited in [24]. 1998). [2]. (2007) posited two strategies for stars: protection of existing market shares and acquisition of equal or greater

proportion of the expanding market in order to maintain their leadership position. [5] (2011) warned that "unlike Cash Cow, Stars cannot be complacent when they are on top because they can immediately be overtaken by another company which capitalizes on the market growth rate". As the market becomes mature and the annual growth rate falls below 10 per cent, the star becomes a cash cow.

2.2.2 CASH COW

Cash Cow is SBUs in low growth market but have a high market share and a strong competitive position in mature market ([21] 1989). Their competitive strength, [21] (1989) explained, comes from being furthest down the experience curve. They are the company's core businesses ([38}, 2012) and enjoy cost leadership and economies of scale. They generate considerable sum of cash but because of the lower rate of market growth, use relatively little cash, hence, higher profit margin ([55], 1992, [37], 1995; [34]., 1999, [50], 2011). The excess cash it generates is used to pay the company's bills and support other SBUs that need investment. The strategic objective for the cash cow is to hold sales and market share. Cash cows are what Drucker called 'Today's breadwinner' (cited in [24]. 1998).

2.2.3 QUESTION MARK (PROBLEM CHILD)

Question mark also called Wild Cat or Problem Child is SBUs operating in high growth market but with low relative market share. They generally require considerable sum of cash since the firm needs to keep up with market development ([55], 1992), with the hope of turning it into cash cow. If nothing or less than required is done to increase market share, Question Mark will absorb large amount of cash in the short-run and later, as growth slows down, becomes a Dog ([27], 1993). The major problem associated with having a Question Mark, [5] (2011) explained is the amount of investment which it might need and whether the investment will yield returns in the end or whether it will be completely wasted. Hence, this SBU is tagged, 'Question Mark', because of the uncertainty management faced in deciding whether to continue in the business or withdraw it from the market. Given the peculiarity of this business and the circumstance of the company, management could intensify investment in the SBU, divest/withdraw, or follow a niching strategy ([2], 2007).

2.2.4 DOG

Dog is SBUs that have weak market share in a low-growth market. Their progress on the experience curve is slow and thus they will generate either low profit or return a loss ([55], 1992; [1], 1995). They face cost disadvantage and have low long-term potentials.At best, dogs may generate enough cash to get a break-even result, but they are rarely worth of investing ([19], Boston Consulting Group, 1968).

2.3 SIGNIFICANCE OF BCG MATRIX AS AN ANALYTICAL MODEL

Despite the numerous theoretical critiques and challenges of the BCG matrix as an analytical model, it has its significances as well. Empirical studies that directly examine whether the BCG matrix delivers superior profitability as a portfoliomanagement systemare surprisingly scarce ([3], 1994).

The primary objectives of multi-business company, implicit in the conceptualization of BCG, are growth and profitability ([20], 1980). This view is shared by [21] (1989) that "the objective of the BCG's portfolio is to identify how corporate cash resources can be used to maximize a company's growth and profitability". A diversified organization has these significances of the matrix and can employ the BCG model to actualize its growth and profit objectives. Other possible uses for the BCG Matrix are determining relative market share and the market growth rate of a product line. The BCG Matrix can help determine where a product is in its product life cycleand if there is a possibility of growth for the market or product. If a company is able to use the experience curve to its advantage, it would be able to manufacture and sell new products at a price that is low enough to get early market share leadership. Once it becomes a star, it is destined to be profitable.

The BCG model is helpful for managers to evaluate balance in the firm's current portfolio. BCG method is applicable to large companies that seek volume and experience effects.

The BCG matrix also classifies products from the perspective of a single company and its particular products or SBUs (Strategic Business Unit). The BCG matrix measures market attractiveness by market growth rate in vertical axis, and it assesses the firm's ability to compete by its relative market share in horizontal axis (Annual Conference of Asia, 2006).

In the real world practice, BCG matrix methods are judged to be successful by those who use them. [16] (1982) found that almost all respondents believed that their use of formal portfolio planning methods had a positive impact, in a survey of Fortune 1000 companies. Therefore, in the positive side, portfolio models provide a systematic method for resource allocation decisions ([22], 2005).

The BCG matrix thus offers a very useful map as an analytical model for the organization's products strength and weakness, at least in terms of current profitability, as well as the likely cash flows. Derivatives can also be used to create product portfolio analysis of services so information systems services can be treated accordingly.

2.4 CHALLENGES INVOLVED IN USING BCG AS AN ANALYTICAL MODEL

The BCG model is criticized for having a number of challenges ([41] 2003). The BCG matrix has had a greater share of the challenges leveled against portfolio matrix in the literature of portfolio Analysis. These challenges include;

There are other reasons other than relative market share and market growth that could influence the allocation of resources to a product or SBU: reasons such as the need for strong brand name and product positioning could compel resource allocation to an SBU or product ([12], 2004).What is more, the model

rests on net cash consumption or generation as the fundamental portfolio balancing criterion. That is appropriate only in a capital constrained environment. In modern economies, with relatively frictionless capital flows, this is not the appropriate metric to apply – rather, risk-adjusted discounted cash flows should be used ([39], 2005).Also, the matrix assumes products/business units are independent of each other, and independent of assets outside of the business. In other words, there is no provision for synergy among products/business units. This is rarely realistic.The relationship between cash flow and market share may be weak due to a number of factors. Competitors may have access to lower cost materials unrelated to their relative share position; low market share producers may be on steeper experience curves due to superior production technology; and strategic factors other than relative market share may affect profit margins.In addition, the growth-share matrix is based on the assumption that high rates of growth use large cash resources and that maturity of the life cycle brings about the expected profit returns. This may be incorrect due to various reasons, capital intensity may be low and the business/product could be grown without major cash outlay; high entry barriers may exist so margins may be sustainable and big enough to produce a positive cash flow and a growth at the same time; and industry overcapacity and price competition may depress prices in maturity.

Furthermore, market growth is not the only factor or necessarily the most important factor when assessing the attractiveness of a market. A fast growing market is not necessarily an attractive one. Growth markets attract new entrants and if capacity exceeds demand then the market may become a low margin one and therefore unattractive. A high growth market may lack size and stability.A four-cell matrix on high-low classification system hides the fact that many businesses are in markets with an average growth rate and have market shares that are neither high nor low, but in between or intermediate ([51], 1996). They therefore wonder which cells these average businesses belong in the BCG classification scheme. Sharing this view are [23], (1994) who argued that the use of four-cell matrix ignored the fact that the world contains not only high and low, but middle position as well.The matrix assumes that all SBUs have the same lifecycle which is not the reality. Thus, some Stars facing a short lifecycle, [12] (2001) advised should be harvested than committing further investment.

The BCG matrix was developed principally to balance cash flow in a multi-business company. But [27] (1993) suggested that is not comfortable with the priority given to cash flow balancing. A contrary position to the advocacy of the BCG was given by Marakon, a management consulting firm. [40] (1980) argued that ideal business portfolio is not necessarily balanced in terms of internal cash flow.

3. RESEARCH METHODOLOGY

The study was carried out with the purpose of identifying the practical significance of BCG matrix in the fast moving consumable sector in Ghana.Descriptive research design was adopted. Questionnaire was designed to

ascertain facts, test knowledge or information or discover opinions, attitude or beliefs. The questionnaires contained open ended and close ended questions mainly based on predetermined and standardized questions. Secondary data was obtained from the company brochures, text books, grey literatures, online journals, company's products records.

The target population consists of the management of Nestle Ghana Limited in the Kumasi metropolis. Purposive sampling method was used in selecting the marketing director, branch manager, branch marketing manager, branch advertising manager, public relations officer, branch marketing research officer and sales executives with a selected sample size of 51. Responses were coded using T-Test and Linear Regression for the analysis.

4. RESULTS

4.1 Use of BCG in Product Mix Analysis

It was observed that NGL uses BCG in their product mix analysis. A calculated mean score of 4.18 on the scale indicated that NGL has knowledge about BCG. The mean 4.00 indicates that NGL uses BCG in analyzing their product mix with standard deviation of 0.6 which means that there is less dispersion of the opinion of the respondents, hence the mean value can be depended upon.

4.1.1 Product Position in the BCG matrix at NGL

Table 1. Product Position in the BCG matrix at NGL

NGL Different Product Position	N	Mean	Std. Deviation
Position products with BCG	51	4.00	.791
Position products according to the four quadrants	51	4.00	.707
Position products as Stars	51	3.94	.556
Position products as Cash Cows	51	4.00	1.061
Position products as Question Marks	51	3.29	1.263
Position products as Dogs	51	2.71	1.448

SOURCE: Researcher's field data, (January 2016)

Scale: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree

The study observed that BCG matrix was used in NGL product mix analysis. A calculated mean score of 4.00, 4.00 with a standard deviation of 0.7, 0.7 shows that NGL uses BCG and positions products according to the four quadrants respectively and the mean value can be depended upon because there was less dispersion of the opinion of the respondents. The mean 3.94, 4.00, 3.29 with a standard deviation of 0.5, 1.0 and 1.2 shows that NGL have Stars, Cash Cows and Question Marks respectively and the mean value can be

relied on because there was less dispersion of the opinion of the respondents according to the standard deviation. The mean 2.71 shows that Nestle does not have dogs in their quadrant at the moment, a standard deviation of 1.4 means that there was less dispersion of the opinion of the respondents, therefore the mean value can be depended upon.

4.1.2 Significance of BCG to NGL
Table 2. Significance of BCG to NGL

BCG Matrix Significance	N	Mean	Std. Deviation
Delivers superior profitability	51	4.06	.827
Determining relative market share and growth	51	4.35	.606
Determining where a product is in its PLC	51	4.35	.702
Evaluate balance in the firms current portfolio	51	3.94	1.088
Ability to compete by knowing its relative market share	51	4.29	.772
Measures Market attractiveness	51	3.88	1.054
Offers a useful map as an analytical model	51	3.88	.781

SOURCE: Researcher's field data, (January 2016)

Scale: 1=Least Influential, 2=Less Influential, 3=Undisclosed, 4=Influential and 5=Most Influential

Results in Table 2 showed that BCG as an analytical model is significant to NGL. A calculated mean score of 4.06, 4.35 and 4.35 with standard deviations of 0.8, 0.6 and 0.7 on the scale indicates that, BCG delivers superior profitability, determines relative market share and growth, and determines where a product is in its PLC respectively and the mean value can be depended upon because there is less dispersion of the opinion of the respondents. The mean value 3.94, 4.29, 3.88 and 3.88 with standard deviations of 1.1, 0.7, 1.1 and 0.7 shows that BCG evaluates the balance in the firm's current portfolio, enables NGL to compete by knowing its relative market share, measures market attractiveness and offers a useful map as an analytical model respectively, the mean value can be relied on because there was less dispersion of the opinion of the respondents according to the standard deviation.

Table 3.Regression Analysis explaining variations in BCG and its significance

Significance of BCG to NGL	B	Std. Error	t	Sig
(Constant)	7.602	1.287	5.908	.000*
Delivers superior profitability	-0.231	0.362	-0.639	.539
Determining relative market share and growth	-0.937	0.385	-2.432	.038**
Determining where a product is in its PLC	0.24	0.364	0.661	.525
Evaluate balance in the firms	-0.006	0.305	-0.02	.984

current portfolio				
Ability to compete by knowing its relative market share	0.892	0.376	2.373	.042**
Measures market attractiveness	-0.297	0.312	-0.954	.365
Offers a useful map as an analytical model	-0.588	0.234	-2.518	.033**
R	0.802			
R Square	0.643			
Adjusted R Square	0.365			

*Significant at 1%, **Significant at 5%,

Linear regression analysis was used to determine the links between a range of independent variables and significance of BCG.

The following model was estimated:

$Y_1 = 7.602 - 0.231(X_1) - 0.937(X_2) + 0.24(X_3) - 0.006(X_4) + 0.892(X_5) - 0.297(X_6) - 0.588(X_7)$

Where Y_1 is the dependent variable of BCG use and X_1, X_2, X_3, X_4, X_5, X_6, X_7 are dependent variables which influence BCG use.

Table 4. Challenges Involved In the Use of the BCG Matrix as a Portfolio Analysis to NGL

Challenges of BCG Matrix	N	Mean	Std. Deviation
Causal Relationship between market share and profitability may not exist	51	3.18	1.015
Distinction between high and low is highly subjective	51	2.82	1.237
Can't help managers to take into account synergies	51	2.76	1.200
Easy to be misleading	51	2.53	1.419

Scale: 1=Very Low, 2=Low, 3=Medium, 4=High and 5=Very High

A calculated mean score of 3.18 on the scale indicates that, assumed causal relationship between market share and profitability may not exist with a standard deviation of 1.0 which means that there is less dispersion of the opinion of the respondents, hence the mean value can be relied upon. The mean score 2.82, 2.76 and 2.53 which are all close to 3 with a standard deviation of 1.2, 1.2 and 1.4 shows that the distinction between high and low is highly subjective, can't help managers to take into account synergies and easy to be misleading respectively are not seen as challenges of using BCG matrix as a portfolio analysis and the mean value can be depended upon because the standard deviations means there is less dispersion of the opinion of the respondents.

This means that BCG matrix has least challenges as a portfolio analysis in NGL. This is consisted with the responses from the questionnaires. It also supports research findings of Haspeslagh (1982) which found that almost all respondents believed that their use of formal portfolio planning methods had a positive impact, in a survey of Fortune 1000 companies. He also opined that diversity can be a great source of competitive advantage as well as a source of fundamental difficulties.

5.DISCUSSIONS

The study established thatNGL uses BCG in analyzing their product (mean=4.0), products are positioned using the four quadrant of BCG (mean=4.00). The study further revealed that, BCG delivers superior profitability (mean=4.06), determines relative market share and growth (mean=4.35), determining where a product is in its PLC (mean=4.35), again, it helps in evaluating a balance in portfolio (mean=3.94), it was also indicated that BCG helps NGL to compete by knowing its relative market share (mean=4.29), measures market attractiveness (mean=3.88) and offers a useful map as an analytical model (mean=3.88). NGL faces less challenge in its usage of BCG in product management. This confirms the research findings of [16] (1982) which founds that almost all respondents believed that their use of formal portfolio planning methods had a positive impact, in a survey of Fortune 1000 companies.

6. CONCLUSIONS AND RECOMMENDATIONS

The general objective of the study was to evaluate the practical significance of BCG (Boston Consulting Group) matrix in the fast moving consumable sector in Ghana. The study confirmed [16] (1982) study, which founds that almost all respondents believed that their use of formal portfolio planning methods had a positive impact, in a survey of Fortune 1000 companies. Understanding of the model offer superior value in product portfolio management in the Fast Moving Consumable Sector. There is a need to have a balance portfolio for sustainability of business. In the fast moving consumable sector where close product management skills are needed businesses need to have a healthy balance portfolio.Based on the founding's these recommendations were made.

- First businesses need to assess the balance of its portfolio. In the long term a company needs to maintain a balance between cash use and cash generation. If too much many of its businesses are cash cows, then while it is rich in cash in the short term, it is vulnerable due to its lack of long term growth potential.
- On the other hand companies with a portfolio dominated by stars and problem children are likely to find themselves with insufficient resources to maintain market share.

- Businesses need to note that; successful SBU's follow a life cycle. They generally starts as problem children, then if they are manage successfully, they are built into stars; eventually they become cash cows as the market matures, and finally they become dogs.
- Lastly each SBU should have a clear objective appropriate to its portfolio position. Growth will be an appropriate objective for stars and selected problem children, maintenance of sales is the likely objective for strong cash cows, some of the dog and non-priority problem children. Divestment will be set for those dog and problem children that are seen as having no potential.

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