Application of BCG as a Strategic Planning Tool to Assess the Sustainability and Growth of University Programs in a Competitive Market

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ABSTRACT

With regards to the competitive environment for consumer demand, it is imperative for organizations to utilize reputed models for tactical resource allocation to different strategic business units and products. The work describes and explains the BCG portfolio matrix model to assess five Ghanaian university programs. Effective implementation of the BCG model helps the institution of higher education to achieve the finest status from the viewpoint of competitive positions in the market. The model helps institutions choose which markets and business units to finance on the basis of two features - competitiveness and market attractiveness; with the fundamental drivers for these factors being market share and growth rate respectively. Therefore, for the survival and growth of the product, the firm needs to adopt some effective and operative strategies, and also invests in areas like research and development which will enhance new ideas. Of course, the technological and innovative aspects should also not be disregarded. These strategies will enhance an innovative brand in the existing market which will help the product gain a competitive advantage. This paper attempts to analyse the business model, BCG and how it can seek to promote sustainability and growth of the university programs in a competitive market.

Keywords: Strategic Planning, BCG, University Programs, Sustainability and Growth

1.0 INTRODUCTION

Boston Consulting Group (BCG) matrix is one of the best known and dependable tools in strategic management. The BCG Matrix method is the most popular portfolio management tool used to determine what priorities should be given in the product portfolio of a business unit. From Aithal (2017), the BCG matrix is a framework created by Boston Consulting Group to evaluate the strategic position of the business brand portfolio and its potential. It has been recounted by Nor et al. (2016) that the matrix classifies business portfolio into four categories (namely: Star, Cash Cow, Question Mark and Dog), based on industry attractiveness (growth rate of that industry) and competitive position (relative market share). These two dimensions (growth rate of that industry and relative market share) reveal likely profitability of the business portfolio in terms of cash needed to support that unit, and cash generated. According to Mohajan (2017), the business portfolio is a useful management tool that has been used to analyze a business unit’s environment and to suggest several resource allocation strategies based on the unit’s industry growth rate and the organization’s relative market share or strength. The BCG Growth-Share Matrix helps organizations to consider growth opportunities by reviewing their products portfolio to decide where to invest, to develop or discontinue products (WANGUI and LISHENGA, 2017). The general purpose of the study is to help understand which program(s) the universities should invest in...
and which ones should be modified or revised by the institutions. The authors present important insights of strategic analysis of the BCG model to higher academic institutions. The paper outlines the strategic business products at the various schools and program levels, focusing on Agricultural Science, Engineering, Business, Health Sciences and Liberal Arts programs.

2.0 THE BOSTON CONSULTING GROUP (BCG) MATRIX

The Boston Consulting Group (BCG) is an American worldwide management-consulting firm and the world's leading advisor on business strategy. The BCG Matrix (Growth-Share Matrix) is a technique that comes from the consulting company called Boston Consulting Group (BCG), thus the name BCG matrix or Boston matrix. Being considered as one of the most prestigious management consulting firms, BCG helps other organizations to be innovative in their dealings. The BCG firm has 90 offices in 50 countries (Kengelbach et al., 2015). The establishment advises its clients in the private, public, and not-for-profit sectors all over the world. Formed in 1963 by Bruce Henderson, BCG helps an organization to identify its highest-value opportunities, address the greatest critical challenges, and transform the entity to attain maximum value. With just a short period after the formation of The Boston Consulting Group consultancy, Seymour Tilles, who had joined BGG as the third member of staff in July 1964, set out the main ideas of portfolio planning in an article published in 1966 (Tilles and McFarlan, 1966). According to him, an organization is seen as a collection (portfolio) of businesses with a variety of opportunities and risks. In 1969, BCG designed the "growth-share matrix", which is a simple chart to assist firms to decide how to apportion cash among their business elements. The organization would classify its business elements or product types as "Stars", "Cash Cows", "Question Marks", and "Dogs". Afterwards, the firm could then apportion cash accordingly, moving money from "cash cows" toward "stars" and "question marks" that could have higher market growth rates, and hence higher possible benefit. BCG is also a portfolio management system used by organizations that have differentiated dealings to decide which ones to participate in and identify a means through which the businesses can be well managed for accomplishment (von Flüe, 2017). In the subsequent years, the BCG matrix had received a lot of considerations from researchers and managers. The assertion from Lorange (1975) indicated that the growth-share matrix has become one of the most commonly used techniques in corporate planning. A study conducted by Salwa and Sudarsan (2018) echoed that BCG matrix is considered to be the best-suited approach for portfolio analysis, and is extensively employed than any other matrix. From Khan et al. (2015), the BCG matrix is actually among the widely used models and compatible to investigative policy modeling. BCG is committed to creating competitive advantage through unique solutions providing unparalleled opportunities for growth. The matrix is used for the assessment of an organization's product selection in marketing and sales planning. It is a corporate planning technique that identifies portfolio unit types (Zhukovskaya, 2016). The BCG matrix seeks to break down products (portfolio unit types) into four categories: Dogs, Cash Cows, Stars and Question Marks using four quadrants. The Boston Consulting group's product portfolio matrix (BCG matrix) is designed to help with long-term strategic planning, to support an organization consider growth opportunities by swotting its portfolio of products in order to decide where to invest, or to suspend or develop products [(Prasad, 2016), Parniangtong (2017), Pisano et al. (2017), Eichhorn and Towers (2018)]. This tool is also referred to as the Growth-Share Matrix (Curuksu, 2018). It has two dimensions namely: relative market share and market growth rate. Being a corporate planning tool, BCG matrix is used to depict firm’s brand portfolio or SBU's on a quadrant along relative market share axis (horizontal axis) and market growth rate axis (vertical axis). However, it is a business tool that uses relative market share and industry growth rate factors to assess the prospects of product portfolio and suggest further investment strategies.

2.1 Relative market share

One of the dimensions used to evaluate business portfolio is relative market share. A firm’s market share signifies the percentage of a specified market it controls (Gottardo and Maria Moisello, 2014). It catalogues a firm's or a brand’s market share as against that of its major competitor. However, it illustrates the share of each player or product in the market at any point in time. A change in relative market share shows that an organization is gaining or falling behind a competitor (Auer and Schoenle, 2016). A study from Malik (2015) indicated that higher corporate market share results in higher cash returns. This is because a firm that produces more, benefits from higher economies of scale and experience curve, resulting in higher profits. Nonetheless, it is worth to note that some firms may
experience the same benefits with lower production outputs and lower market share.

2.2 Market growth rate
This is the rate at which an organization’s market size increases (Audretsch et al., 2014). The market growth rate is a factor to be considered when assessing the performance of an organization. This is because it measures the extent at which the market of an establishment is growing or not. It provides an understanding of the size of the opportunity an organization might have. High market growth rate implies higher earnings and sometimes profits, but it also consumes lots of money, which is used as an investment to propel further growth. Hence, business units that operate in rapid growth firms are cash users and are worth investing in, only when they are expected to grow or maintain market share in the future. It is advisable for organizations to spend some time determining what the growth rate of the market is, and also evaluate other markets to find one that is alluringly growing. Comparing a firm’s growth to the market growth rate provides a critical performance measure. For instance, if a firm’s sales grew by 15 percent last year, it sounds appealing. However, if the market grew by 28 percent, it is appalling. Lagging behind growth in the market indicates that competitors are outperforming the organization, making it lose market share.

Fig 1: Components of Growth-Share Matrix

2.3 Stars
Stars operate in high market growth and maintain high market share. Stars are considered as both cash generators and cash users (Myllylä and Kaivo-oja, 2015). The stars offer the basis for long-term growth and profitability. They are the primary units in which the organization should invest its money because stars could become cash cows and generate positive cash flows. However, not all stars are poised to become cash flows. This is unambiguously true, because in rapidly changing industries, where new innovative products can soon be outshined by new technological advancements, a star instead of becoming a cash cow, sometimes becomes a dog. Stars are normally marginally profitable, but as they reach a more mature status in their life cycle and growth slows, return becomes more attractive. However, organizations having products as stars, the following strategic implementations are needed; product development, vertical integration, horizontal integration, market penetration, market development and joint ventures.

2.4 Cash cows
Products that are in low growth areas but the organization has a large market share are considered “cash cows,” meaning that the organization should milk the cash cow for as long as it can. These have already grown a lot and are still growing. Cash cows are the most profitable brands and should be “milked” to provide as much cash as possible. Cash Cows are the most lucrative products in the portfolio (Rolbina, 2016). The circumstance is normally boosted by economies of scale that may be present with market leaders. The cash gained from “cows” may be used to support the businesses in the other three quadrants to support their further growth. According to the growth-share matrix, firms should not invest into cash cows to encourage growth but only to support them so they can maintain their current market share. Again, this may not always be the truth. Cash cows are usually capable of innovating new products or processes, which may become new leads or “stars”. If there are no supports for cash cows, they would not be proficient of such innovations. Strategic adoptions needed for cash cows are product development, diversification, divestiture and retrenchment.

2.5 Question marks
The quadrant of “question marks” shows low brand awareness (Oh et al., 2014). Question marks are the products that require much closer consideration. Similarly, they are products or businesses that compete in high growth markets but where the market share is relatively low. A new product launched into a high growth market, and with an existing market frontrunner or favorite would normally be considered as a question mark. They customarily hold low market share in fast-growing markets consuming a large amount of cash and incurring losses. However, it has the potential to gain
market share and become a star, which would later become a cash cow. As a result of the high growth environment, they can develop into a “cash bowl”. Sometimes, question marks do not succeed, and even after a huge amount of funds invested, they struggle to gain market share and sooner or later become dogs. Hence, they necessitate very close consideration to decide if they are worth investing in or not. The need to adopt a strategic perspective to business operations for question mark products is imperative. Strategic options for question marks include product development, market development, and market penetration.

2.6 Dogs

Dogs hold a low market share compared to competitors, and operate in a slowly growing market (Purce, 2014). Generally, they are not worth investing in because they generate low or negative cash returns. However, this may not always or certainly be the true depiction. With time, some dogs may tend to be money-spinning because they may provide synergies for other products or strategic business units (SBUs) or could simply act as a defence to counter competitors. Therefore, it is always important to perform a deeper analysis of each product or SBU to make sure it is not really worth investing in before considering to be divested. Sometimes, successful products could move from question mark though star to cash cow and finally end up as a dog. However, less successful products that never gain market position will move straight from question mark to dog. If a product is seen as a dog, the strategic choices needed by the organization are retrenchment, divestiture and liquidation.

3.0 LITERATURE REVIEW

In recent times, business associates have moved from the short-term and tactical plans to the long-term and strategic (Cakmak and Tas, 2012). The assertion from Sobhanallah et al. (2016) indicated that Growth-Share Matrix (BCG Matrix) seeks to evaluate organization’s product portfolio in marketing and sales planning of the business in two dimensions: Market growth and Market share. The Strategic planning tool, BCG Matrix has been accepted by many organizations to ensure progress and survival of their firms. According to Bryson (2018), strategic planning is an anchorage of decisions and actions which lead to an effective approach for firms to achieve their organizational goals. These decisions and procedures determine an organization’s rise, fall or survival. They help in instituting strategic arrangement and policy development of a firm. The basis and obligation of strategies lie in realizing a harmonious balance among distinct skills, the organizational capabilities and the external environment of the business. Strategic planning helps an organization to set, implement, monitor and control the strategies of accomplishment in a specific period of time (Shuckleton et al., 2017). The basic foundation of a strategy is that a competitor can defeat its rivals and can organize itself with its capabilities against opponents. When an organization is able to do its activities more effectively than its rivals, it has the ability of winning in the rivalry game and will appear as the leader of the market. A strategy produces an organizational general plan for arranging its resources in order to determine a desirable position, and to have a fruitful advantage over the organization’s rivals. Baporikar (2014) argued that in strategizing, technology should continuously be crucial in decision making because it twigs business pressures which affect the competitiveness of an organization. These pressures cause common and rapid fluctuations in business enterprises. Organizations compete with one another in order to attract new customers, maintain the customers and also to create reasonable value for their internal and external customers. While doing so, Syazwan Ab Talib and Bakar Abdul Hamid (2014) believed that any organization or successful entrepreneur should set and formulate meaningful strategies taking into consideration the strengths, internal weaknesses, and its environmental threats and opportunities. As accentuated by Sutton-Grier et al. (2015), organizations should hinge on management judgement, corporate unit strengths and weaknesses, as well as external environmental factors to make more rational investment or portfolio decisions. BCG Matrix helps firms to understand the strategic positions of business portfolios (Thakur and Workman, 2016). The matrix quadrants are simplified versions of the reality and cannot be applied blindly for investment decisions. The matrix can help as an overall investment guideline, but should not change the corporate strategic thinking. However, Schiele et al. (2014) criticized the growth-share analysis for its oversimplification and lack of useful application. Both market share and growth rate are very significant in the evaluation of product’s value, but Shortell et al. (1985) argued that product’s market share and the rate of its growth vary in time. Krug (2013) opined that businesses or products can be classified as cash cows, while they are actually dogs, or vice versa. This is because dogs could actually produce higher cash flows. Dogs can be as
significant as cash cows to businesses if they help to achieve competitive advantage for the organization. However, Bock et al. (2016) believed that BCG matrix meaningfully affects an organization's long-term success, motivating the development of good portfolio planning tool for analyzing corporate strategy techniques.

4.0 METHODOLOGY

The study focused on using BCG Matrix as a strategic planning tool to assess the sustainability and growth of course brands ran by Ghanaian universities in a competitive market. Data was taken from students on university campuses, and those about to enter the university, using questionnaires and interviews. The primary data emanated from 420 students whose views were sought regarding the interest and performance of selected programs. The programs under consideration were Agricultural Science, Engineering, Health Sciences, Business and Liberal Arts. The data was analyzed to identify the programs (products) that have the tendency of growing on the business market, as well as those not performing well. Relative market share was calculated in terms of market share. It is calculated by dividing the organization’s own product’s market share by the market share of the largest competitor in that industry. After calculating all the measures, the products were plotted on the matrix. Relative market share was plotted on the x-axis, whereas market growth was given the y-axis. The products were represented by drawing circles. The size of the circle corresponds to the proportion of business proceeds apparently generated by that product.

5.0 FINDINGS AND ANALYSIS

BCG matrix is used to evaluate SBUs, brands, products or a firm as a unit itself. The chosen element(s) will have an effect on the entire analysis. As a result, it is important to define the element(s) to be used to do the investigation. Moreover, defining the market is one of the most essential things to do in the analysis. This is because an incorrect description of the market may lead to poor classification. However, it is imperative to undoubtedly define the market to understand the organization’s portfolio position better.

Table 1: Growth and Share of Programs offered by the Universities

<table>
<thead>
<tr>
<th>Product</th>
<th>Market Growth %</th>
<th>Market Share %</th>
<th>Largest Competitor Share %</th>
<th>Relative Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural</td>
<td>5</td>
<td>9</td>
<td>30</td>
<td>0.20</td>
</tr>
<tr>
<td>Engineering</td>
<td>17</td>
<td>14</td>
<td>42</td>
<td>0.33</td>
</tr>
<tr>
<td>Business</td>
<td>6</td>
<td>12</td>
<td>19</td>
<td>0.63</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>16</td>
<td>16</td>
<td>18</td>
<td>0.89</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>4</td>
<td>7</td>
<td>32</td>
<td>0.22</td>
</tr>
</tbody>
</table>

The BCG matrix of the model represents an array of figures of the universities giving them a worthy idea of how the programs (products) are performing on market. It determines the program(s) that is (are) viable, patronized by students and bringing income to the school. If the demand is not increasing rapidly (slow or no growth of the market), it means an investment or modification is needed to be done in additional capacity. Products and services are created to generate more revenue and satisfy customer needs (Iromba, 2016). The university could use the existing sales received to continue selling the product to get cash (profit) from it. If it is not generating cash or profit, then the product has lost its key value. Therefore, it will require revision of the program package. A program with high growth & high relative market share is described a Star, while high growth but a relatively low market share is called a Question Mark. Also, low growth and a high market share program is referred to as a Cash Cow, whereas low growth and a low relative market share is known as a Dog. Corporate portfolio analysis gives a set of techniques operative to help organizations make strategic decisions. It provides more information about the brand position than just the cash flow (Prasad, 2016), which is a good indicator for analyzing how the program or product is fairing on the market. Therefore, a good business model remains essential to every university, because it can certainly impact the market performance of the program.
In the above four-quadrant graphical representation, Relative Market Share is shown on the horizontal axis (low right, high left), which serves as a measure of product strength in the business market. However, the vertical axis (low bottom, high top) represents Market Growth Rate, which provides a measure of market attractiveness. The four quadrants are designated as "stars" (upper left), "question marks" (upper right), "cash cows" (lower left) and "dogs" (lower right). By dividing the matrix into four areas, the product types can be distinguished and analyzed. From the research, Health Sciences were known to be Stars. They have high growth, and products competing in markets are relatively strong as compared with other competitors (Ryzhkova and Prosvirkin, 2015). The products are poised in doing well with great opportunities. They often need heavy investment to sustain their growth. Obviously, they require a lot of money to set up a feasible, relevant and standardized programs in Health Sciences, with modern laboratories. This leads to a hefty amount of cash spending and cash generation. The chart indicated that Business programs were cash cows. They have low market growth, but the products have a relatively high market share (Hüschelrath, 2018). These are recognized and successful programs with a relatively small need for investment. Debrecht and Levas (2014) indicated the student programs should be managed for continued profit, so that they continue to generate outstanding cash flows needed by the university. The designed business programs seem to do well even in low market growth with limited opportunities. Engineering fell under the category of question marks. These are the programs with a low market share but operate in higher growth markets (Fannin and Saran, 2017). This implies that they have the prospective opportunity but may require extensive investment in order to grow market share at the expense of more influential competitors. Management of universities would have to think hard about "question marks" - which programs should they invest in? Which ones should they agree to shrink or fail? Agricultural Science and Liberal Arts programs were referred to as dogs in this research. This last group of products called “dogs” are also referred to as or “ballast or “drags” (Ryńca, 2016). Apparently, the term "dogs" connotes programs or products that have low relative market share in low-growth markets. Dogs may generate an adequate amount of cash to break-even, but they are seldom if even worth investing in them. Furthermore, products in the “dogs” quadrant have sales and brand awareness which are low, and need to be given top priority during product transition (Oh et al., 2014). They are weak in the market and somehow difficult to make a profit.

6.0 DISCUSSION

Health Sciences had an admirable market share as well as growth pertaining to the terrain. As a result, they are described as “stars”. In these circumstances, demand greatly exceeds supply, and there is little or no competition. There is also an existence of pricing power. The stars frequently need more resources to continue to grow. It is essential for them to try to maintain or increase their share in the market (Lapina et al., 2015), in order to make more profit. In view of the fact that demand exceeds supply, the programs will be thriving and enthusiastically sought for by students. The universities could also take advantage of the demand and commit resources to effectively develop other products as well. Products have the potential to become cash cows, therefore it is necessary to invest in marketing (advertisement) and innovation boost. In a changing market, a rebranding of the product to make it more attractive is an encouraging step. Clients will favor those products that are widely available and have enormous benefits. However, depending on where a program falls on the graph, varied strategies are recommended. For the program falling in the cash cow category (high market share, low growth), funds should be apportioned to protect the market share and invest in product reconsideration to keep abreast of changes in preferences. Business programs were known to be cash cows, as they generate more cash than required. Much profit is made by the universities through the Business programs, because they are more sought for. The economic, market situation and product position that characterize the cash cow classification of the model are: quite low growth, relatively large market share, a good deal of competition, and a number of differentiated products. Demand usually is at equilibrium with supply, or perchance more than supply (Debrecht and Levas, 2014). Cash cow is characterized by high profit and cash generation, and
positive cash flow (Purce, 2014). The residual cash after covering costs to run the programs and to protect the share in the market could be redistributed to other dipping programs. Although the business programs may have a large position, they still need to be safeguarded from falling. It is recommended that cash cow products (Business programs) heed to product differentiation in order to stay in the technologically competitive environment, as well as keeping up with changes in student preferences. If optimal resources are not committed to maintaining the market share, the program could become inactive, less competitive and finally outmoded. Due to the position in the matrix, financial and management strategy suggestions should include investments to sustain market share and contribute necessary resources to monitor and maintain the business programs. The question mark quadrant consists of having products that have relatively high growth but with low market demand, as seen in Engineering. They propose the most uneasy decisions for the university management (Ribeiro and Machado, 2017). However, the authorities should keep investing in the products or “pull the plug”. From the research, Engineering programs have high cash needs, and the universities should therefore do whatever is essential to increase market share or divest swiftly. With this, management must decide if the program will ever increase its market share or decide on its non-competitive entry into the market or withdraw such unattractive product from the market. However, the “dog” category comprises of products that have a low relative market share and low market growth. With the declining market for Agricultural Science and Liberal Arts, there is the likelihood that they could suffer a loss on the market as they never had much of market share. From Atta-Panin (2017), dogs often generate poor profits, and cash needs are usually higher than the cash generated, so an organization may decide to divest them. To improve the overall performance of the programs, the universities should minimize the proportion of their resources that remain in this group by focusing on a specific segment and minimizing costs.

7.0 CONCLUSION

It is crucial that an institution that is growing and anticipates sustaining growth needs, a set of strategies is required to guide its program development, build a financial foundation, and prepare for challenges lying ahead. With regards to today's changing and competitive business environment, organizations need to strategically plan in order to achieve a modest position more than before. Strategic planning paves way for clients or stakeholders of an organization the opportunity to learn more about the firm, share their insight of its strengths and weaknesses. They also discuss significant issues affecting the organization, or likely to affect it in the future. The strategic plan depicts in detail unambiguous steps that will be taken to grow the establishment. Therefore, universities should keep revising the strategic plans and determine their position(s) in comparison with their contenders in the competitive business markets. In this regard, having a considerate understanding in the BCG matrix gives valuable knowledge for universities to effectively strategize towards current market trends. These plans can be the basis of future building of management strategies through the use of BCG matrix. This will help top managers to identify, evaluate the product portfolios of their institutions and also take decisions on their positions. The best portfolio is one that fits the institution's strengths which also helps to take advantage of the most astounding opportunities. The success of strategic management and planning depends on the development and formulation of well-organized strategies, which in turn require decision support tools and models. Effective policies and plans of the universities would help in the analysis of current product portfolio and decide on which programs should receive more or less investment. University Administrators, just like Corporate Managers are responsible for allotment and placement of the limited resources judiciously, so that the school executes its mission and meets its goals with the available means. Strategic analysis guides resource distribution so that the university positions itself to leverage its assets, reduce risks, and satisfy the aspiration of its prospective students and other stakeholders. Funds received by units, departments, and academic faculties should be used judiciously, so as to uphold the product status quo and growth, and not to inflict the schools with debts through unwarranted investments.

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8.0 REFERENCES


