Strategic Enhancement of GE – McKinsey Matrix

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***Abstract*— Background:** Though the GE-McKinsey matrix has proven its explanatoriness, it has become less applicable because of the increasing complexity of dynamics behind the markets. Thereby, the industry is now lack of a guide explaining strategies to follow on certain phases. **Purpose:** Decisions within major strategies be followed during certain cases are predictable by studying the industry growth and competitive positing. Therefore, the matrix can be extended to a level that explains which strategy to be followed. **Method:** By extending each element of the GE-McKinsey matrix with the convenient strategies, the existing matrix has been enhanced in terms of its explanatoriness and responsiveness to certain situations. **Practice:** Due to the guidance form followed throughout the research, the findings can be implied by the decision-makers concerning the product strategies, R&D, marketing, product portfolio, business development.

***Keywords*—** Management framework, product portfolio, McKinsey, GE, BCG, matrix, decision making, budget allocation, strategy, business development, industry growth, market share.

LITERATURE REVIEW

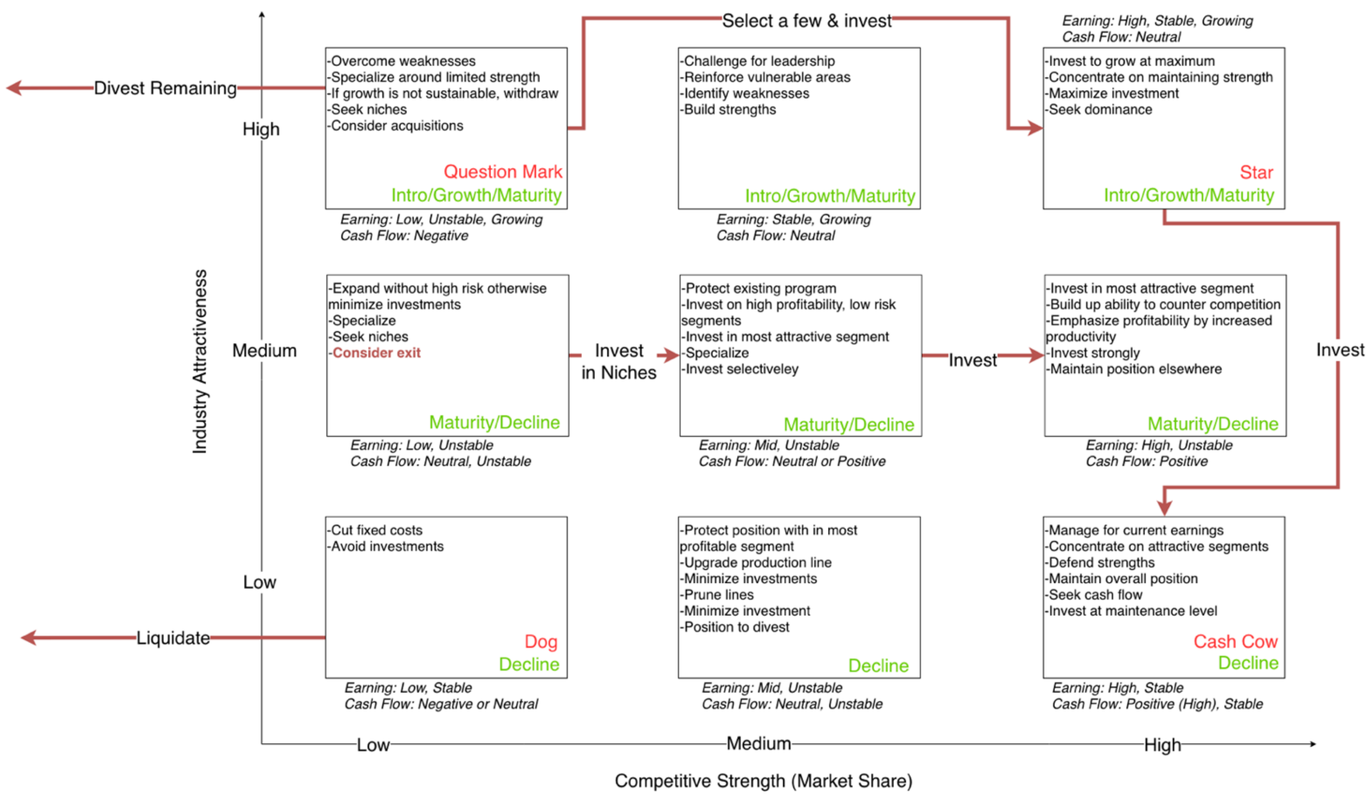
The meaning and process of product portfolio management have considerably gained complexity over the recent years, though the aim has remained relatively unaffected [1]. Since the introduction of GE-McKinsey matrix in the 1970's by the consulting firm McKinsey & Company the screening of the product portfolio hasn't changed much [2]. However, not only a guide academically explaining the usage of the model seems to be lack in the industry, but also it appears to need a strategical enhancement in order to reflect the recent changes and innovations in the industry [3]. Therefore, this paper aims to provide a guide on how to apply the model while enlarging its outcome-wise coverage.

I. INTRODUCTION

Rise in number of multi-business firms managing a large portfolio of many Strategic Business Units [SBU] is one of the biggest challenges faced by today's large-scale companies. Decisions made by the top-level management determine the direction of the future investments; meaning sometimes a decision may also be about terminating a business due to lack of profitability. The profitability of an SBU depends on various factors such as industry attractiveness, market share, maturity phase.

II. STRATEGIC OUTLOOK

FIGURE I: BLEND MODEL



Allowing the decision maker see which SBU is positioned where in one clear scheme, the GE-McKinsey Matrix [GEMM] has been used in the field very often. However, due to requiring more of a comprehensive strategic guide, nowadays there appears to be a need in the industry for an enhancement on the framework. As the profitability of SBUs does not only depend on the 2 factors used in the GEMM, the enhanced version is to reflect and visualize additional factors as well.

Besides the additional factors shown on the table, strategic guidance is now included in alignment with the table. In order to match and satisfy the requirement caused by the increased complexity of today's mechanics behind businesses, the possible scenarios covered are widened and suggestions are made aiming to increase the applicability of the model on a decision considering product (SBU) portfolio.

A. *Integrated Models*

To provide a better visualization, most well-known managerial frameworks are brought together and bound in order to create an extended matrix (Figure I). By this means, all the strategies suggested for each area have underlined and the underlying reasons are explained in a detailed manner. The base areas and axes are structured from the GE-McKinsey matrix which gives the ability to position the product portfolio on the areas easily by only identifying the industry attractiveness and the competitive position for each strategic business unit (SBU).

Furthermore, BCG Matrix elements are bound on the areas which show the product lifecycle phase to be utilized on potential decision makings. At the end, depending on the industry attractiveness, the areas are bound with the product life-cycle phases with all the probability of occurrences. All the probability of occurrences mean extended table with these two axis is not fully capable to determine the exact product life-cycle position of the product/business unit, however, it facilitates to expand the closure of the table and the strategies.

III. IMPLEMENTATION IN PRACTICE

TABLE II: DECISIVE SCORECARD

	Attractiveness of Your Industry	Weight		Score	Weighted Score	Strength of Your Business	Weight		Score	Weighted Score
Market Factors	Market size	0,3	0,10		0	Market share (in equivalent terms)	0,4	0,13		0
	Growth rate per year		0,10		0	Your annual growth rate		0,13		0
	Sesitivity to price and features		0,06		0	Your influence on the market		0,08		0
	Cyclicality/Seasonality		0,04		0	Your sales lag or leed		0,05		0
Competitive Factors	Number of entries and exits	0,15	0,06		0	Segments you have entered or left	0,1	0,04		0
	Sensitivity to distruption		0,04		0	Your relative share change		0,03		0
	Functional substitution		0,05		0	Your vulnerability		0,03		0
Financial & Economic Factors	Profitability (Average ROIC)	0,2	0,09		0	Your profitability performance	0,15	0,06		0
	Economies of scale		0,04		0	Any competitive advantage you possess		0,05		0
	Capacity utilization		0,07		0	Your utilization		0,04		0
Technological Factors	Digitalization of the industry	0,25	0,08		0	Your position	0,2	0,06		0
	R&D spendings		0,06		0	Your R&D spending		0,04		0
	Patents & Copyrights		0,06		0	Your position		0,05		0
	Technologic barrier to entry		0,05		0	Your advantage		0,05		0
Socio-Political Factors	Social attitudes & trends	0,1	0,04		0	Your company's responsiveness and flexibility	0,15	0,06		0
	Laws & government agency regulations		0,03		0	Your company's ability to cope		0,04		0
	Influence with pressure groups & government representatives		0,02		0	Your company's aggressiveness		0,03		0
	Human factors such as unionization & community acceptance		0,02		0	Your company's relationships		0,03		0
	Total	*1*		-	**0**	**Total**	*1*		-	**0**

Link: https://docs.google.com/spreadsheets/d/11JfXWQ2l2LkJVSmcs6Dy-7obnaM2mOXbK0JM9BTYVqk/edit?usp=sharing

A. *Industry Attractiveness*

As McDonald states, industry attractiveness in general is measured by potential growth in sales and profits for a market. On the other hand, business strength, instead, is based on how much the SBU satisfies the market needs, when compared to its competitors [4]. As it is mentioned in previous studies that the dimensions of the current GE/McKinsey Matrix are highly sensitive to subjective evaluations, weighted score method has used for achieving a better concrete scoring instead of an objective evaluation [5]. To evaluate the SBU's competitive position and industry's attractiveness as a whole, factors are examined in 5 main categories: Market, Competitive, Financial & Economic, Technological, and Socio-Political factors (Table I).

By scoring each factor from 1 (Least advantageous) to 5 (Most advantageous) depending on the advantage of each at the decisive scorecard table (Table I), multiplying it with its weight, and sum up all the weighted points; decision-maker may locate the SBU on the matrix with total weighted score. A score between 0-1,66 means low, between 1,66-3,33 means medium, and between 3,33-5 means high for both industry attractiveness and competitive strength. Although the weights of factors may differ slightly from different geographies, industries, or time; decision-makers may adjust the weights easily. An electronic version of the table may be found online at: https://docs.google.com/spreadsheets/d/11JfXWQ2l2LkJVSmcs6Dy-7obnaM2mOXbK0JM9BTYVqk/edit?usp=sharing

B. *Competitive Strength*

Unlike the industry attractiveness, competitive strength is measured by how much the company is capable of satisfying the market needs according to the factors specified in the industry attractiveness. Again, like industry attractiveness, weighted scorecard method with points range from 1 to 5 has used to measure the competitive strength.

IV. Actions

Having diversified product portfolios, one of the most complicated decisions taken in mature companies is certainly about deciding how much to invest in each product. Comparing the lifetime value forecasts of each product under the constraints of time and budget, decision makers are allowed to overcome the high uncertainty. The forecasting model design should involve identifying risks and opportunities, to better evaluate the performance of each product (or products set) in order to prioritize high-value products. After all the reaching to the optimal point when allocating the budget will be made possible. Done properly, the long and short term revenue and profit targets can be achieved as the impact of strategic decisions will be maximized.

Sales promotions are the other type of marketing activities companies usually use mainly aiming to rise sales temporarily, in order to gain sales volume and market share. In fact, sales promotions are a part of advertisement activities which reflect on how the product or services offer to a numerous customer. Whereas the tools often used by the marketer in sales promotion include; consumer promotion (cash discount, coupons, free trials and warranties), trade promotion (price off, free goods & display allowance) and, business and sale force promotions are trade shows & contests for sales represent. Sales promotion often achieves its fundamental objective by increasing of sales of goods & services.

Advertising can also increase visibility within firm's industry, helping them attract partners that can expand their business. Advertising refers as a paid form of non-personal communication that transmitted through mass media [6]. Benefits of business advertising include attracting new customers and helping the firms sell more products and/or services to existing customers. It can increase revenues, too, by helping increase order or volume size. In software or manufacturing businesses, advertisement can help throw the products with a splash.

A. *Marketing Strategy*

Understanding the customer needs and wants is nowadays much more important than ever, as the outcome of the researches should be considered when building a proper marketing strategy [7].

Marketing strategy is a business' order to achieve the desired level of marketing performance, the strategy should be built on top of 3 phases after the goals are set, positioning products properly according to the segments by understanding the customer needs/wants and existing segments; settings "correct" prices, supporting the sales with the most suitable marketing activities possible.

1. Positioning & Segmentation

Segmentation is defining active customer segments in accordance to their resemblance and size. According to Kotler's defition of a well-defined segment in 2003, there are 5 main criterias: measurable, accessible, sustainable, differentiable and actionable. In today's business life, repositioning occurs more often than ever, due to the fast pace of change in customer segments [8].

Positioning is where Although positioning is often considered as how a brand/product recognized actually it's more of a tool of design with rational, material based concepts. Perceptual maps here help us understand how customer imagines a brand/product mentally whiles algorithms help optimising the challenge of positioning with the help of statistics [9].

Understanding them together is the key to maximize the benefit that can be gained from the market. According to Ogilvy, it is the balance between what a product does and whom it is for [10]. On the applied side, the sequence goes as; segmentation to understand the markets better; tageting to decide on which segments to aim for; positioning meaning the strategic design for the targeted segments.

2. Pricing Strategy

After a good or service has been developed, identified, and packaged, it must be priced. Price is the exchange value of a good or service.

IV.A.2.1 Discount Strategy

A discount sale consists of selling a given set of items at a reduced price for a limited period. This reduction is expected to increase sales well enough to compensate for the reduction in total income.

IV.A.2.2 Penetration Pricing

This strategy consists of setting a preliminary price lower than the market. The expectancy is to break down the purchasing character of the clients through low prices. The ultimate goal is to attain a larger market share. Penetration pricing causes oppression on the cost reduction and as a typical result, also discourages new entries by competitors by making the market less favorable for all.

IV.A.2.3 Price Skimming

In price skimming strategy, a relatively high price is set at first, and then being lowered in the course of time. Skimming strategy is related to the discrimination of price yet with the time factor. This strategy usually applies on which customers are less price-sensitive (customers of cosmetic industry etc.) or which they are attracted through innovation (especially electronic appliances such as computers). Price skimming is helpful to payback large quantities of investments made for research and development.

IV.A.2.4 Competition Driven Strategies

When the competitive positioning is taken under consideration, the strategies a company can imply are analyzed as Defensive and Attack Strategies.

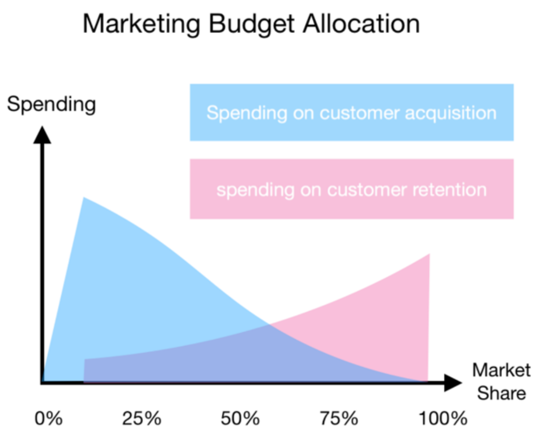
The proper defense strategy can surprisingly be adopted by all types of businesses (though not often seen by stage-1 growth companies) regardless of the positions they occupy on the market (leader, co-leader, challenger) On the other hand, imitation strategy suggests a response by intending to attack competitors by price, consisting of rapidly readjusting their prices to the level of practices seen in the market. It needs to be constantly validated by very serious technical and managerial measures, to able to decrease the price whenever possible.

The frontal attack: preferred when a company launching it disposes of particular advantages considering the quality and cost, enabling the business to reduce prices to unacceptable levels to be applied for other firms. The flanks attack: when the competitors are too powerful because of the geographic insulation factor on the market share etc. or in the event of the isolation of the weakest market share yet more intent to experience low prices. The neutral zone attack, which is suggested on markets where the strongest competitor places their goods and services but on the others. The guerrilla attack is recommended especially for small scale firms. Focusing on the operation of short-time price reductions in scattered points to attract the attention of customers by sharp fluctuations on the price. Accompanied obviously by last switches in position.

3. Marketing Activities

Every successful business has sound and continuous marketing activities in the heart, 4 main targets of marketing activities can be segmented into 4 categories, brand, customer, product, and competition. There is almost no marketing activity that can affect only one of the categories, activity mixes are planned strategically to maximize the cumulative effect. Elasticities of activities vary depending on the industry/sector; therefore, optimization of forecasted ROI's should be the main target to maximize benefits [11].

FIGURE IIII: MARKETING BUDGET ALLOCATION

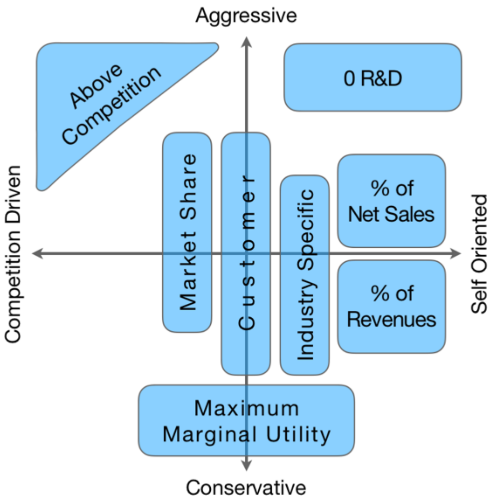


The other factor that should be checked is which one to spend more on, acquisition of new customers, or retention of existing customers. The graph given reflects how the marketing budget should be allocated among these 2, with regards to the market share. Spending for acquisition decreases as the need for retention activities increases by the number of acquired customers increase.

4. *Budget Allocation*

Allocation of the budget between marketing and R&D has one of the most effects when the competition dynamics are kept in mind. Increased diversification of business activities contributed by R&D expenditure makes enterprises more competitive [12]. The trade-off between R&D expenditures and marketing spending depend from one industry to another, e.g. R&D performance is much higher in the electronics industry; whereas marketing investment in service industry affects the competition significantly [13].

FIGURE IVII: BUDGET ALLOCATION



We analyzed the methods that executives take decisions on the marketing budget, the methods they often go through are plotted on a matrix as shown on the figure. As an outcome, in order to determine the budget needed for marketing activities, one or a blend of a few of the methods described can be utilized.

This part shortly explains how each approach should be implied, above the competition and 0 R&D strategies are very much alike; 0 R&D meaning the budget for R&D will be cut to boost marketing power of the company, whiles Above Competition is a abruptly about spending more than the highest budget among the competition. “Customer” meaning setting the correct price for desired customer growth, estimated by avg. customer acquisition cost (CAC); “Market Share” meaning determining the amount that’d be needed to stick to a desired market share without allowing the company to leverage market share; and Industry Specific methods are should be analyzed together, cause although the competition-self orientation varies, the vertical variation on the matrix fluctuates very similarly depending on the company aims. With the usage of some credible data, these 3 methods can be very credible, however, all are relatively centralized therefore make it difficult to work when constraints are much lesser and hence none allows the decision maker determine the proper number of radical budgets precisely. A certain percentage of revenues or net sales are often used in the market. Though the reliability is low due to not considering the customers, these methods are very easy to apply and relatively work better where the competition is scarce and sales forecasts are accurate. Maximum marginal utility strategy keeps in mind that the higher the budget, the lower will be the marginal utility; therefore, aims to pay only for the cream of the cake and keep its ROI at the highest possible with a next-to-zero budget.

B. *Product(ion) Decisions*

Production decisions that follow rational patterns help the firm sustain competitiveness in the marketplace through through the reconciliation of the market requirements and the resources [14]. The most fundamental way to competitiveness and superior performance from other competitors in the market is to supply customers to more superior value compared to their competitors [15]. The precedences of being competitive at the market include quality, delivery and cost. Profitability and growth are directly related to customer satisfaction. Competitive advantages can be only achieved by products delivered at the desired quality, reasonable price and on time. Moreover, emphasizing profitability as key success factor to counter competitive market conditions by raising productivity is one of the best possible ways. Systematic planning and control means that costs and time will be kept within the pre-determined control limits. In this manner, productivity will be improved through shorter manufacturing durations and with a multiplying semifinished product.

1. *Research & Development*

Maximizing future returns of stockholders is one of the principle aims of enterprise management. One of the most important factors to consider while making decisions is indeed about future research and developments. R&D investments where successfully implemented have proven success of increasing market competitiveness and assurance of long term profits.If product management is considered as a complex resource allocation problem that decision makers face everyday, R&D decisions are where benefit is gained in a longer term and depending on a rate of success. Main question is whether to spend on R&D or marketing; R&D pays itself back in the long term, (additionally by chance) for the future products (even for the future marketing activities) whiles the effects of successful marketing campaigns are often seen in relatively shorter: mid-terms [16].

2. *Product Line*

Product line strategy factors can draw high impact on market share (brand performance). A product line is that combination of products that are tightly related in a way. Changes in market demand or trends or competitive action and reaction sometimes make products line less competitive.

Product line stretching: Developing products with new and different features is to increase the range of products available in the current product range. Long-standing brands can expand their product line by using line stretching to increase their market share through developing new and sustainable products. Investments in both research and development and advertisement is required. Alteration may be in form of Design, Colour, Flavour Advertising appeal texture etc. We can differentiate as downward, upward, and 2-way stretching.

- Down Market: Firms could stretch its product line to down market when there is high growth opportunities with value priced goods or may be the chances of aggressive attack from a competitor.

- Up Market: Firms could stretch its product line to up market for achieving higher margins.

- Two way stretch: When the firm stretches its product line in both upper and lower range.

Contraction of the Product Line: Companies must decide to delete the products when they have failed in performance, reaching its decline round on the Product Life Cycle stage and excessive product line makes marketing costs higher.

C. *Liquidation*

Liquidation in economic and financial aspects is the way toward finishing a business and distributing its resources for debtees. It is an occasion that normally happens when an organization is indebted, which means it cannot pay its obligations when they are due. Liquidation can also refer to the act of exiting a securities position. In the simplest terms, this means selling the position for cash. For the matrix developed, at the areas where SBUs have low competitive strength, liquidation may be considered and liquidation refers selling the position for cash.

For the area where competitive strength is low but industry attractiveness is high, it is better to select only the most profitable SBUs to invest while liquidating others. For the low-low area, it generally means that the SBU is at the end of its lifetime. In this case the most preferable option is avoidding costs, investments and liquidating the SBU in the most profitable way.

V. Conclusion

The nine-squares matrix is a predecessor of a various different portfolio management models. The model has proven its success by still being commonly used even after having been developed almost 50 years ago. The study aimed to provide a guide on how to apply the model while enlargening its outcome-wise coverage. Hence, the model, figures and tables explained in this model are to strategically extend the GE-McKinsey matrix.

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