PRODUCT PORTFOLIO ANALYSIS - ARTHUR D. LITTLE MATRIX

Ionescu Florin Tudor
Bucharest Academy of Economic Studies, Marketing Faculty

Curmei Cătălin Valeriu
Bucharest Academy of Economic Studies, Marketing Faculty

In recent decades we have witnessed an unseen dynamism among companies, which is explained by their desire to engage in more activities that provide a high level of development and diversification. Thus, as companies are diversifying more and more, their managers confront a number of challenges arising from the management of resources for the product portfolio and the low level of resources with which companies can identify, at a time. Responding to these challenges, over time were developed a series of analytical product portfolio methods through which managers can balance the sources of cash flows from the multiple products and also can identify the place and role of products, in strategic terms, within the product portfolio. In order to identify these methods the authors of the present paper have conducted a desk research in order to analyze the strategic marketing and management literature of the last 2 decades. Widely were studied a series of methods that are presented in the marketing and management literature as the main instruments used within the product portfolio strategic planning process. Among these methods we focused on the Arthur D. Little matrix. Thus the present paper has the purpose to outline the characteristics and strategic implications of the ADL matrix within a company's product portfolio. After conducting this analysis we have found that restricting the product portfolio analysis to the A.D.L. matrix is not a very wise decision. The A.D.L. matrix among with other marketing tools of product portfolio analysis have some advantages and disadvantages and is trying to provide, at a time, a specific diagnosis of a company's product portfolio. Therefore, the recommendation for the Romanian managers consists in a combined use of a wide range of tools and techniques for product portfolio analysis. This leads to a better understanding of the whole mix of product markets, included in portfolio analysis, the strategic position held by each product within a market, the performance potential of product portfolio and the financial aspects related to the resource allocation process for the products within the portfolio. It should also be noted that the tools and techniques specific to product portfolio analysis do not give accurate answers, despite the appearances created by the analysis stage, where the products are plotted rigorously. However, their main virtue is simplicity, as these highlight the managers' need for further investigations.

Keywords: product portfolio, ADL matrix, life cycle, competitive position, strategic analysis

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Introduction

A fundamental question that managers must answer each time is: In what direction must the company go? The strategy implemented by a company must be elaborated so that it considers all market opportunities and neutralizes current threats or foreseen threats. At the same time the company must value its strong points, by referring to the competition (Căescu 2011:98). On the basis of these features specific to an ideal strategy and by considering current options that companies may resort to, one may assert that the salient features of the strategy selection process are its difficulty and complexity. Over time, a series of methods have been created with a view to

support the strategy assessment and selection process. Of these, the methods corresponding to product portfolio analysis stands out.

Product portfolio analysis is an analytical approach, whereby a company manager can view the company as a sum of products that must be managed in a profitable manner. However, taking into account the specific characteristics of the marketplace, the competitive advantage and the resource allocation process, it can be point out the fact that the product portfolio analysis gives the manager an opportunity to address his company from a different perspective and to provide in the future, more attention to all actions to be undertaken. This product portfolio analysis must become routine activity undertaken by the company, through its carrying out on a regular basis, so that decisions of earmarking of financial resources may be monitored, updated and modified with a view to accomplishing corporate objectives, correlated to the process of generation thereof carried out in an efficient way by each product (Armstrong and Brodie 1994:2).

The basic decisions, that involve the earmarking of corporate resources together with the general approach, by means of which a product will be managed, does not complete the strategic analysis process and the selection of the viable strategic alternative. Consequently, for each product must be examined and selected a certain type of strategy that in the end should lead to the meeting of long-term strategic objectives (Wensley 1994:86).

Within the list of significant contributions to the product portfolio analysis domain, must be disclosed the one made by Arthur D. Little consulting company. This consulting company was founded in 1886 by Arthur D. Little, a 23 year old student from Massachusetts Institute of Technology (MIT), who was trying to help paper factories from New England in order to find new chemicals substances for the paper processing. One of his first major consultancy projects was the establishment of an advisory research and development department within the General Motors Company. By the early '70s, MIT was the main shareholder. Then Arthur D. Little has quickly become a public company before being bought by its own employees. The Arthur D. Little consulting company, which has research facilities in Cambridge – USA and in Cambridge - UK, has acquired in the market, some prestige in the '70s by developing a strategic analysis model. Thus the ADL consultants wanted to improve the analytical product portfolio models, by taking into consideration the analysis of product life cycle and a more analytical approach of competitive position.

This model of strategic analysis of the product portfolio is called ADL (abbreviation for Arthur D. Little) and is structured like a matrix with five rows and four columns (5 x 4) resulting from combining two performance indicators: industry life-cycle stage and market competitive position (Florescu and Mâlcomete and Pop 2003:473).

With reference to the specific market characteristics, the present method, which considers the life cycle stage of a product, points out that a market, in a certain period of time, may be in one of the following four stages: introduction, growth, maturity and decline. Each specific stage within the product life cycle can be identified, assessed, quantified and characterized by a system of indicators.

The performance indicator represented by market competitive position is valued by reference to competition, using qualitative and quantitative variables, which make up a set of determinants factors of success.

Thus, in comparison with other methods of analyzing the product portfolio, Arthur D. Little model focuses on factors that must be taken into account in order to assess the competitive position held by a company that operates in a given market. The following list is not exhaustive and may be supplemented with other factors (Florescu and Mâlcomete and Pop 2003:474):

- supply factors: long-term contracts, labor costs and payment terms;

- **production factors**: production flexibility and capacity, experience, technical skills, environmental protection, quality of management, skill or expertise, labor productivity and production cost;
- **commercialization factors**: the power and quality of distribution network, credit conditions, the image of the product, product range, market share, sales force and price;
- **financial factors**: profitability, financial stability, cash flow and technological protection;

Further, based on these factors and using a method of weighting and scoring, competitive position can record several states, according to company forces in relation to competitors on a given market. (Popa 2004:155). In other words Arthur D. Little matrix argues that as these factors change over time, the products gain or lose ground in terms of competitive advantage, and eventually they will identify with one of the following five potential competitive positions:

- **Dominant** - this position is very rare and most often is due to the posture of a monopoly company or market dominance exerted strong, from a technological point of view. The implications of this position mean that the company is able to influence the behavior of other organizations and has a wide range of strategic options.
- **Strong** - the company has a high level of freedom in terms of strategic options and can act without its market position to be threatened by competitors.
- **Favorable** - this position is found in fragmented markets, where no competitor has a very clear market position and the most important companies have a high degree of freedom. The companies with a favorable market position often possess strengths that can be exploited through specific strategies and are facing opportunities that may generate market share growth.
- **Tenable** - companies within this category are generally vulnerable to fierce competition exerted by organizations with proactive and strong market positions. However, they survive and are able to justify their existence on the market. Also in this category are limited opportunities for an organization that wants to strengthen its market position. Thus, the profitability for a company with a good position is best achieved and supported through specialization.
- **Poor** - the company performance is generally unsatisfactory, even if market opportunities exist, through which it can be improved. However, often, the company is too big and inefficient in terms of competitiveness or is either too small to cope with competitive pressure. As such, if a company sees no action to change the future is likely to be removed from the market or even to voluntarily leave the market.

In the marketing literature some authors consider that the list, which identifies and characterizes the competitive positions of a specific product, it may also be considered a sixth position, which is suggestively called "**Unsustainable**" or "**Very Poor**". A product is located in this position when performance is unsatisfactory and there are very few market opportunities that can improve the situation. In conclusion, in an unfavorable conjuncture it is recommended an immediate withdrawal from the market, with less expensive costs.

Another basic attribute that made the ADL model to assert in strategic consulting and distinguish itself from all other methods of evaluation of the product portfolio is that it establishes a close relationship between the company's competitive position and profitability levels, within different phases of the product life cycle, on a given market.

Thus it can be said that the profitability raises and the risk of change of competitive position diminishes as it tends to a dominant position and financial needs and risk of unplanned changes decline as it records an evolution within the market life cycle. **Table nr.1** summarizes the profitability, the risk and the financial needs of products according to the competitive position and market life cycle stage.

Strategic implications

Following the establishment of product position within the Arthur D. Little matrix, we can move to the next phase of identification and selection of strategic steps.

At corporate level, the resources are normally allocated to products, based on the degree of their competitiveness.

Thus products are classified based on criteria such as: desirability of reaching the maturity stage, strength of competitive position, ability to generate positive cash flows on long term and short-term, the level of risk and the return on investment. This classification provides to higher-level management the skills to decide which products from the product portfolio will receive financial resources and which will not.

Table nr. 1 – The profitability, the risk and the needs of financial flux depending on the competitive position and industry life cycle stage

Market life cycle stage / Competitive position	Introduction	Growth	Maturity	Decline
Dominant	• Good profitability • Cash flow = 0 • High investments		• Good profitability • Cash flow = + + • Low investments	
Strong	• Medium risk • High investments • High cash flow needs		• Low risk • Low investments • Low cash flow needs	
Favorable	• Medium profitability		• Medium profitability	
Tenable	• Cash flow = - - - • High risk • Low profitability		• Cash flow = 0 • Medium risk • Low profitability	
Weak	• Low profitability		• Low profitability	

Source: Bărbulescu, Constantin. "*Sistemele Strategice ale Întreprinderii*", Bucureşti: Editura Economică, 1999, p.140.

As such, the combination of the two performance indicators of the present matrix, represented by the competitive position and industry life cycle stage, contribute on the one hand to the diagnosis of products included in the product portfolio and on the other hand to the identification and evaluation of strategic options. **Table nr.2** shows the specific strategic options corresponding to the 20 quadrants of the ADL matrix. The ADL matrix speculate the idea that when it comes to choosing and implementing a strategy, a company will select, in most cases, one or more options from the following list, which presents a set of general strategies (Wind and Mahajan and Swire 1983:59):

- investing in order to maintain or even improve their competitive position in the marketplace;
- spending in order to maintain the status quo;
- harvesting;
- exiting the market;

However, the ADL consulting company highlights a number of guiding principles that should be considered in the selection of strategic options, of which the most important points out that the selection of a strategy should be based on actual situation of products and not on the facts and the subjectivity of managers. Thus the ADL matrix advocates realism in the strategic planning

process. In conclusion we can say that the ADL matrix facilitates the choosing of a marketing strategy, but it is insufficient to define a global strategy (Florescu şi Mâlcomete şi Pop 2003:474).

The advantages and disadvantages of the ADL matrix

Unlike other models of product portfolio analysis the ADL matrix is based on an enhanced applicability because it fits to all situations of competition encountered in a marketplace.

Also the ADL matrix can be applied to the fragmented industries, holding a small competitive advantage but with a large number of ways of obtaining it (provides multiple ways of differentiation). As such we can say that the ADL matrix has a high degree of adaptability to situations of a qualitative nature.

A first disadvantage is that the matrix does not take into account a number of phenomena that can generate long-term involution in the products life cycle of a company. Another weakness is related to the high level of difficulty in terms of objective evaluation of the ADL model variables. This is often the case for the competitive position indicator. In other words, the difficulty lies in the fact that some factors are qualitative in nature and there is a high risk of bias in their use.

In conclusion, we can say that the ADL matrix provides clearer results as a company is more diversified and enable synchronization on decisions relating to competition.

Table nr.2 - A.D.L. Matrix Strategies

		INDUSTRY LIFE CYCLE STAGE			
		INTRODUCTION	**GROWTH**	**MATURITY**	**DECLINE**
COMPETITIVE POSITION	**DOMINANT**	- Rapid development - Act offensive	- Rapid development - Defend position - Act offensive - Cost leadership	- Defend position - Act offensive	- Defend position - Focus - Consider retreat
	STRONG	- Rapid development - Differentiation	- Cut costs - Differentiation - Atack small competitors	- Cut costs - Differentiation - Focus	- Harvest
	FAVORABLE	- Rapid development - Differentiation	- Cut costs - Differentiation - Atack small competitors	- Focus - Differentiation - Atack small competitors	- Harvest
	TENABLE	- Market development - Focus	- Maintain or retreat - Identify a niche - Aim growth	- Maintain or retreat - Identify a niche	- Retreat
	WEAK	- Identify a niche - Flollow the competitors	- Identify a niche - Retreat	- Retreat	- Retreat

Source: Wilson, Richard M.S and Gilligan, Colin. "*Strategic Marketing Management – Planning, Implementation and Control*", 3rd Edition, Elsevier Butterworth-Heinemann, 2005, p. 378

Conclusions

The product portfolio strategic planning offers three potential benefits for a company. The first is that it encourages the promotion of competitive analysis among the products, through comparative assessments, resulting in a number of sustainable strategies.

The second benefit claims selective allocation of financial resources by identifying issues of a strategic nature and by adopting a standardized and unbiased process of negotiating. Thus, the mix of forces within the company will be better focused.

The third benefit derives from the experts' points of view who argue that this way of approaching the product portfolio, which focuses on a number of tools and techniques, helps the company to reduce risk, to increase the concentration and also the involvement, regarding the identification and implementation of the strategies.

Correlated with visual approach, which is based on a series of graphics, the company's product portfolio analysis is strengthened by the comparative analysis process of the market shares, market growth rates, market attractiveness, competitive position and the market life cycle, specific to each product.

According to the information mentioned above, it must be highlighted that limiting the product portfolio analysis to the A.D.L. matrix is not a very wise decision. The A.D.L. matrix with other marketing tools of product portfolio analysis has some advantages and disadvantages and is trying to provide, at a time, a specific diagnosis of a company product portfolio.

The tools and techniques of product portfolio analysis facilitate discussion and shape the competitive position of a company, generating at the same time questions related to the contribution of the current allocation of resources to the success and long-term vitality. Since resources are limited, the managers must carefully manage these strategic decisions in terms of effort invested in each market and the expected profit level for each case (Căescu 2011:101). However, besides the fact that these tools and techniques help managers to control the allocation of resources and to suggest realistic goals for each product, they also offer the possibility of using the products, as vital resources within the process of fulfilling the objectives established at corporate level. Therefore, the recommendation for the Romanian managers consists in a combined use of a wide range of tools and techniques for product portfolio analysis. This leads to a better understanding of: the whole mix of product markets, included in portfolio analysis, the strategic position held by each product within a market, the performance potential of product portfolio and the financial aspects related to the resources allocation process for the products within the portfolio. It should also be noted that the tools and techniques specific to product portfolio analysis do not give accurate answers, despite the appearances created by the analysis stage, where the products are plotted rigorously. However, their main virtue is simplicity, as these highlight the managers' need for further investigations.

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