Methods to Evaluate Efficiency and Risk of Company's Marketing Strategies

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Abstract: The global experience of top companies shows that the successful development of a company and the improvement of its efficiency are impossible without a properly formulated strategy as a set of measures aimed at achieving a goal. This work is relevant because of the fact that the activity of any enterprise has some risks. Therefore, there is a need to form and apply a marketing strategy for activities within the competences of various departments.The article makes an attempt to study and develop methods to evaluate the efficiency and risk of the marketing strategy of the company. Modern business is conducted in a highly competitive environment. In order to take adequate decisions, it is necessary to deeply and comprehensively evaluate the situation and to make a reliable forecast of the events. The efficiency and risk of a marketing strategy through the example of a certain company have been evaluated. Methods for the quantitative analysis of management decisions in the implementation of marketing strategies of industrial companies have been analyzed.

Index Terms: marketing, business, strategy, risk, company.

I. INTRODUCTION

In National and foreign references pay close attention to evaluating the efficiency and risks of marketing strategies of industrial companies [1- 6].

Methods of quantitative analysis of management decisions are efficient when they are practically used by industrial companies to achieve accuracy and reliability in evaluating the efficiency and impact of the risk of their marketing strategies. Marketing strategies of the company can be developed by using the calculation and analytical method, expert estimates and statistical method. As a rule, these methods of quantitative analysis of management decisions in terms of implementing marketing strategies of industrial companies meet the requirements of ensuring the necessary accuracy and reliability of evaluating the efficiency and

impact of such strategies risk. The SWOT analysis rather accurately evaluates the efficiency and magnitude of the risks related to companies' marketing strategies.

II. BASIC METHODOLOGY

A. Concept and Nature of Risks of the Company's Marketing Strategy

In a general sense, risk is commonly interpreted as the possibility of an adverse event in the future. An unfavorable event is the one that caused the failure to achieve the set goal and/or loss of resources. A risk is a characteristic of the possibility and degree of attainability of a possible result, depending on the action or the management decision taken, i.e., possible combination of the event and its consequences probability [7-9].

The profit risk is one of the examples. As for marketing in general and marketing strategy in particular, risk is interpreted a little bit differently.

The marketing risk is the one peculiar of the marketing area of the company's business activity, i.e., it is characterized by the probability of certain events and their consequences that make it difficult or impossible to achieve goals at certain stages of marketing activities or entirely in marketing [10-12].

The marketing risk is defined as the profit risk as a result of reducing sales volumes or a fall in selling prices, the probability of a commercial defeat in the market, or not achieving the intended strategic goals that will result in the company's financial or economic damage, a set of risks characterized by the probability of events and their consequences that make it difficult or impossible to achieve goals at certain stages of marketing activities [3].

Thus, the risk of a marketing strategy can be defined as the probability of not achieving the goals and the loss of possible (potential) revenues and benefits from its implementation. The practice shows that risks in the area of marketing have not been studied and analyzed comprehensively.

At the same time, risk management and marketing are closely interrelated. Fig. 1 shows this relationship in general.
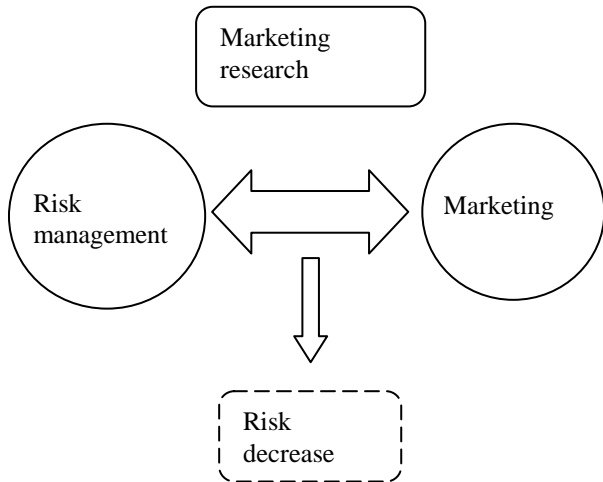
Fig. 1. Relationship of Marketing and Risk Management

In practice, the marketing risks include all risks peculiar of the marketing area of the company, as a whole, and the implementation of its marketing strategy, in particular. All of them are characterized by the probability of certain events and their consequences that can create difficulties for the achievement of business goals at various stages of the company's marketing activities [13-15].

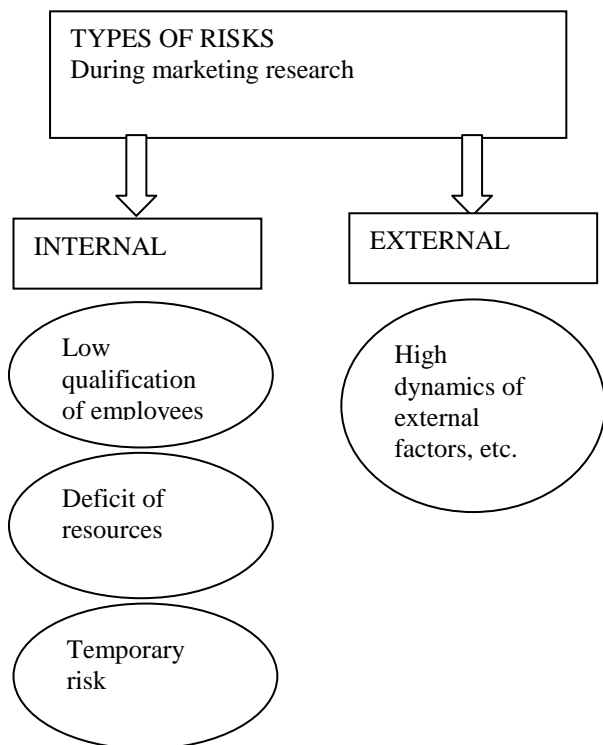Marketing strategy risks are traditionally classified into two types – external and internal (Fig. 2).

Fig. 2. Types of Marketing Strategy Risks [2]

Internal risks of the marketing strategy are directly determined by its content and the company's activities. These risks are considered to be specific. These may include the lack of resources, low qualification of personnel, leakage of confidential information, etc.

External risks, unlike internal ones, are determined by the high dynamics of external factors, formed outside the company, and are practically independent of it. They are also called systematic or market. The inflation, anti-Russian sanctions, etc. can be regarded as examples.

M. MacDonald gives a classification according to which the entire set of risks arising in strategic marketing can be conditionally divided into three groups [4]: market risks, equity risks, and profit risks.

The market risks are related to the fact that the actual market capacity may not correspond to its forecast value. As a result, sales volumes, market share and profits will be less than the target values. This group includes price and forecast risk, sales volume risk, product category risk, etc.

The equity risks are due to the fact that the developed marketing strategy may not provide the competitive advantage or customer preferences required to gain the market share. They are classified into supply risks, estimates of the target market, the risk of uniqueness, etc.

The profit risks are due to the probability that the marketing strategy being implemented will not be able to ensure the target margin level. Here the main risks include the risk of profit sources, the profits pool risk, and additional costs risks.

The tactical risks of the marketing strategy that are directly related to marketing decision-making are distinguished as a separate group. In accordance with the 4P marketing mix, they include the risks associated with product policy, pricing and products marketing risks, as well as promotion risks.

In order to identify and evaluate risks of marketing strategies, traditional methods of risk management are used. The methods of statistical solutions and stochastic programming are special here [16, 17].

The most popular method is the decision tree. It is used in the cases when it is necessary to successively take several management decisions [18, 19].

The marketing strategy risk management aims at reducing the degree of their implementation and reducing possible negative consequences. All this is invariably accompanied by additional resource and monetary costs that reduce the overall efficiency of the marketing strategy.

Due to this, the optimization methods aimed at minimizing costs at a given level of risk or at a given maximum allowable amount of costs capable of minimizing the level of risk have become widespread in practice.

The main methods of managing and minimizing marketing risks are the reduction of uncertainty, calculation of the probability of risk events, and decrease in the responsibility. The latter is ensured by diversifying risks or dividing them. As practice shows, when developing a marketing strategy, it is necessary to evaluate risks.

A. Evaluating Efficiency and Risk of the Marketing Strategy at Polymer Technologies LLC

There are three key methods for evaluating the efficiency and risk of marketing strategies in the industrial company [19-21]:

1. The statistical method of evaluating the efficiency and risk involves studying the statistics of losses (threats) that occurred in similar types of production activity, establishing the frequency of certain levels of the losses caused by the risk of marketing strategies of the industrial company.

The use of statistical data will allow predicting various options for implementing the marketing strategy of the industrial company and reducing the risk of possible losses.

2. The expert method of evaluating the efficiency and risk. Experts give subjective estimates of the probability of certain levels of losses. Using them, it is necessary to find the average value of expert estimates and to make up a probability distribution curve. The essence of the point risk calculation method is as follows: the risk of marketing strategies is described by a certain number of i = 1, 2, ..., n factors (risk criteria). The value of their elements is ranked by using the expert method, according to the probability of the risk, and is normalized, i.e., each is assigned a certain rank (Ri), from one to ten.

The expert method determines the contribution of each factor to the total risk (Wi), which is used as a weight when calculating the total risk (Rc) by using the weighted arithmetic average [3]:

$$R_c = \frac{\sum_i^n Ri * Wi}{\sum_i^n Wi} \quad (1)$$

The closer Rc is to 1, the less the risk is, and the closer it is to 10, the higher the risk is.

In order to evaluate the efficiency and risk of marketing strategies, it is necessary to establish indicators of the most probable allowable, critical and catastrophic losses, both their levels and their probability.

In order to evaluate the efficiency and risk of marketing strategies, experts are involved from the companies and organizations engaged in a similar industry and operating on the same product sales markets.

According to the method of expert estimates, it is necessary to evaluate the efficiency and risk of implementing the marketing strategy of the industrial company when releasing a new polymer product (Table 1).

Table 1. Estimation of Marketing Risk Factors

Marketing risk factors	Points of risk factors (Ri)	Ranges and weight of factors (Wi)	Weighed risk (Wi Ri)
Sales market capacity	2	0.15	0.3
	2	0.125	0.25
Demand	1	0.02	0.02
Price dynamics	2	0.1	0.20
Competitiveness of goods	2	0.05	0.10
	2	0.05	0.10
Efficient supplier network	3	0.15	0.45
	2	0.15	0.30
Reliable distribution network	2	0.05	0.1
	2	0.15	0.3
Professional marketing			
Service activity			
Intensity of competition			

Image of the company			
Total	62	1	2.12

It is important to evaluate the risk factors and calculate the weighted risk, and based on the obtained result, to evaluate the efficiency and risk of the marketing strategy of the Polymer Technologies industrial company.

The risk will be calculated, and its importance will be characterized based on the values of the risk scale (Table 2).

Table 2. Marketing Risk Margins

Risk margins	0–2.5	2.6–5.0	5.1–7.5	7.6–10.0
Risk zones	Minimum	Increased	Critical	Inadmissible

The calculation by using the formula of the weighted average arithmetic gives a result of 2.12 ($R_c = 2,12/1$), which, according to the risk scale, corresponds to the minimum risk.

The marketing strategy of Polymer Technologies LLC for the new polymer production has the minimal risk. New polymer products will allow the industrial company to enter new sales markets.

3. The calculation and analytical method for making a probability distribution curve for losses and evaluating risk indicators of marketing strategies based on this.

The efficiency of risks in managing the industrial enterprise will be evaluated. The risk management includes the following basic activities:

1) Recognition, evaluation and analysis of the risk for the activities of the industrial enterprise,

2) Development and taking measures to prevent, minimize and insure the marketing risk.

It is very important for the industrial company to formulate a certain risk management strategy. In order to do this, it is necessary to give specific answers to the following questions:

1) Identification of risks for the production,

2) What methods and instruments make it possible to manage such risks,

3) What marketing risk the industrial company can assume (an acceptable amount of loss that can be repaid by using its own funds). However, it is not enough to only formulate a strategy for managing risk.

It is also necessary to have a mechanism for its implementation – a marketing risk management system, which in its turn implies the following [1, 5, 6]:

1) Using an efficient system to evaluate risk of the marketing strategy,

2) Establishing the marketing department in the industrial company to manage risks, and

3) Allocating funds and forming special reserves for to insure risks and cover losses.

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Based on the previous calculations, Table 3 shows the evaluation of the efficiency and risk of the marketing strategies of Polymer Technologies LLC. It is important to note that marketing risks are determined by weaknesses of the industrial company, results of the SWOT analysis, the organizational structure of managing the industrial company under study, and the shortcomings of the technological processes in Polymer Technologies LLC.

Table 3. Evaluated Data for Marketing Risks

Criteria characterizing marketing risks (Si)	Criterion weight (Wi) (0 – 1)	Probability of the event (Vi) (0 – 1)	Weighted estimate (Wi*Vi)
Deficit of skilled personnel	0.15	0.5	0.08
Disadvantages of marketing management	0.75	0.15	0.11
Physical and moral wear of equipment	0.65	0.25	0.16
Lack of financial resources	0.35	0.25	0.09
Investment shortage	0.5	0.20	0.10
Unattractive production	0.5	0.10	0.05

The total marketing risk will be 59 %.

$$R = \sum Wi * Vi = 0.59$$, i.e., it is referred to moderate risk.

There are at least three main methods for evaluating the efficiency and risk of marketing strategies:

1) Reducing uncertainty as a result of obtaining additional marketing information. The key role of marketing research, including experiments, belongs to obtaining marketing information to reduce the risk of marketing strategies,

2) Calculating the probability of various events and the determination of their possible consequences (marketing risk). This is the most common way to identify and compare risks, based on the past experience, models and forecasts of the situation, and

3) Reducing the scale of responsibility by:

a) Diversifying the activities (products from various product groups in different market segments (for example, new polymer products, in the new market for such products),

b) Sharing risk of marketing strategies with business partners and other economic actors (project investors).

The most efficient practical ways to reduce risks of the marketing strategy will be determined. Such methodology includes the analysis of the company's strengths and weaknesses, its external, favorable opportunities and threats (SWOT analysis of an industrial company) [3, 13]. According to the data obtained from secondary sources and expert opinions, a computational matrix of SWOT analysis is made for the Polymer Technologies Company (Table 4). It shows the strengths and weaknesses of the industrial company, as well as its opportunities and threats in the market for polymeric products.

Table 4. SWOT Analysis of Polymer Technologies LLC

Strengths (S)	Rank	Point	Total	Weaknesses (W)	Rank	Point	Total
Financial resources	0.35	8	2.8	Deficit of skilled personnel	0.35	5	1.75
List of released products	0.25	6	1.5	Disadvantages of marketing management	0.15	6	0.9
Patented technologies	0.1	8	0.8	Physical and moral wear of equipment	0.2	8	0.16
Industrial costs	0.15	5	0.75	Lack of financial resources	0.15	5	0.75
				Investment shortage			
				Unattractive production			
Competencies of implementing industrial innovation	0.05	6	0.30		0.10	8	0.80
Qualified management	0.1	10	1.0		0.05	6	0.30
Total:	1		7.15/6=1.19	Total:	1		4.66/6=0.78
Opportunities (O)	Rank	Point	Total	Threats (T)	Rank	Point	Total

Growth in demand for polymer products	0.15	7	1.05	Growth of prices for polymer products	0.25	8	2.0
Implementation of innovative technologies	0.15	6	0.9	Entry into the market of foreign competitors	0.15	6	0.9
Increase in the production and quality of polymer products	0.15	9	1.35	Market stagnation	0.05	5	2.5
	0.15	5	0.75	Economic instability (sanctions)	0.25	4	1.0
Diversification of business	0.2	7	1.4	Increase in tax burden	0.12	8	0.96
				Introduction of substitute products	0.05	6	0.3
Expansion of the list of polymer products	0.05	8	0.4	Increase in fuel prices	0.13	10	1.3
Increase in the growth rate of the market Investments in production	0.15	5	0.75				
Total:	1		6.3/7=0.9	**Total:**	1		9.0/7=1.3

Such method of evaluating the efficiency and risk of marketing strategies as SWOT analysis allows selecting the best way to develop an industrial company, avoiding hazards and maximizing the efficiency of using available financial and material resources.

Each component of the SWOT analysis is considered on the basis of specific parameters and is evaluated in points from 1 to 10 as compared to its closest competitor.

The strengths and weaknesses of Polymer Technologies LLC are defined through

1) Determining the evaluation parameters of Polymer Technology LLC,

2) Determining strengths and weaknesses of Polymer Technologies LLC for each parameter.

The relative strength (S) of the SWOT components is defined as follows:

$\overline{S_s}$ = 1.19 / (1.19 + 0.78 + 0.9 + 1.3) = 0.285; $\overline{S_w}$ = 0.78 / 1.931 = 0.404;

$\overline{S_o}$ = 0.9 / 1.931 = 0.47; $\overline{S_t}$ = 1.3 / 1.931 = 0.67.

The maximum strength is found in the "Opportunities" parameter. The strength can be considered as the probability of this event. The risk or probability of non-occurrence of the event is defined by using the probability theory apparatus.

The comparison of strengths and weaknesses and market opportunities and threats will allow answering the following questions related to the further development of Polymer Technologies LLC:

1) How to take advantage of the occurring opportunities by using strengths of the industrial enterprise?

2) How to eliminate weaknesses of the industrial enterprise?

3) How to use strengths to eliminate threats?

4) It is important to define the most dangerous threats.

In order to compare the opportunities of implementing the marketing strategy of Polymer Technologies LLC and the consumers' demands in the sales market, it is reasonable to apply a crossing matrix of SWOT analysis (Table 5).

Table 5. Crossing Matrix of SWOT Analysis of Polymer Technologies LLC

Correlations Features	Company opportunities: (O = 0.9)	Company threats: (T = 1.3)
Strengths: (S = 1.19)	1.19*0.9 = 1.071 SO measures	1.19*1.3= 1.547 ST measures
Weaknesses: (W = 0.78)	0.78*0.9 = 0.702 WO measures	0.78*1.3 = 1.014 WT measures

As a result, an efficient marketing strategy is selected for Polymer Technologies LLC (Fig. 3).

Strengths	Weaknesses	
Diversification (issue of a new type of products)	Joint enterprises Integration	Opportunities Intensive growth
Integration	Decrease in the market share Enterprise liquidation	Threats

Fig. 3. Marketing Strategies of an Industrial Enterprise Development

When implementing the marketing strategy, the strengths of Polymer Technologies LLC include diversification of activities, i.e., the release of a new type of polymer products. It creates opportunities for the intensive growth.

New types of polymer products will allow diversifying activities of the industrial company, entering new markets, and reducing the risk of liquidation due to the stagnation and decline in sales of basic polymer products.

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The marketing strategy of Polymer Technologies LLC can ensure industrial activities for the release of such types of polymer products as polymer pipes, polymer products for farmers and entrepreneurs (for example, agricultural utensils, household goods). The release of new types of products to new sales markets will increase sales and improve the financial performance of Polymer Technologies LLC.

III. CONCLUSION

The marketing strategies of the industrial activity of Polymer Technologies LLC are subject to evaluating the efficiency and risk of its performance.

Based on such evaluation, proposals are being developed in relation to the risk structure of marketing strategies and measures to prevent and minimize them, including: political, legal, industrial and technical, organizational and internal socio-psychological, marketing and financial risks.

In order to evaluate the efficiency and marketing strategies, it is possible to use the calculation and analytical method (for example, SWOT analysis).

When implementing a marketing strategy, the strengths of Polymer Technologies are diversification of its activities, i.e., the release of a new type of polymer products, which creates opportunities for the intensive growth.

It is possible to detail goals and plans under formal evaluation of results, i.e., their measurement (ex-pert method), as well as SWOT analysis.

The release of new types of polymer products will allow diversifying the production of the industrial company, entering new sales markets, and reducing the risk of liquidation due to the stagnation and a de-cline in sales of basic polymer products.

Such marketing strategy of Polymer Technologies LLC can provide industrial activity for the release of such types of polymer products as polymer pipes, polymer products for farmers and entrepreneurs (for example, agricultural utensils, household goods). The release of new types of products to new markets will increase sales, improve financial performance of Polymer Technologies LLC, and minimize the risk of sales decline.

When evaluating the efficiency and risk of the marketing strategies of Polymer Technologies LLC, it has been defined that in order to eliminate the risk, it is necessary to diversify production through releasing new types of polymer products, which creates opportunities for the intensive growth. According to the evaluation, the risk is minimal.

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