



Evaluation of Industrial Enterprises Integration

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ABSTRACT

The relevance of the research problem is caused by the need for a preliminary assessment of the effectiveness of the planned integration of the industrial enterprises and of the implementation of rational management's mechanism for economic integration efficiency as for a separate enterprise and in the integrated structures. The aim of the article is to analyze the existing methodological approaches of evaluation of the effectiveness of the industrial enterprises' integration and the development on this basis model of estimation of company as the object of integration at the decision phase about the deal. The study systematized the existing methods for assessing the integration of industrial enterprises and their features and also was provided the method of express-assessment of company as the object of integration. The need for taking into account future economic efficiency of an integrated company requires specific assessment tools. Application of the proposed method allows to analyze two key indicators - the financial position and competitive advantage. Estimated parameters affect the favorable outcome of a merger or acquisition, and the effectiveness of future activities, reflecting the existing resources of the enterprise and its potential.

Keywords: mergers and acquisitions, integration, evaluation methods.



1. INTRODUCTION

Many companies grow through acquisition of existing companies, thereby significantly outperforming their possible expansion due to internal factors of development. The entire combinations of processes for integration of companies, as well as the acquisition of control of one organization over the other, called the corporate integration, analogue which has become the phrase «mergers and acquisitions».

There are many different options for methodologies for the assessment of mergers and acquisitions. In this context, they were divided into two types: prospective and retrospective depending on time base. The first type reflects the prediction of the future positive effect on integration and relates essentially directly to business valuation. This activity is usually given to consulting and investment companies in order to obtain a confirmation of the acquisition of another company.

The second type is more straightforward, since it is based on the use of financial performance and the company's assessment after a certain time after the merger or acquisition. Financial reporting is often a major indicator of the success of the transaction for integration, enabling to judge its success (Dargenidou,2016) and synergistic benefits reported in accountings.

These methods were associated with the life cycle of the organization, thereby constructing an algorithm of actions based on the stage in the company's activities (Table 1).

Table 1. Relationship between the methods and organizational life cycle



Виды	Создание	Рост	Зрелость	Упадок
1.1. Дисконтированные денежные потоки	+	+		
1.2. Капитализация доходов	+	+		
2.1. Рынок капиталов		+	+	
2.2. Сделок		+	+	
2.3. Отраслевых коэффициентов		+	+	
3.1. Чистых активов			+	+
3.2. Ликвидационной стоимости				+

Each of them also contains a variety of subtypes, with its own unique features in assessing the effectiveness of a merger or acquisition. As a result of carried out study of the methods was made identification of the features of the existing enterprises evaluation methods (Table 2).

Table 2. Methods of evaluating the effectiveness of the interaction of the integrated structures



Types	Condition of the company	Reliability of result	Required data	Main differences
The income approach				
Discounted cash flow	Works currently	Probabilistic nature (forecast)	Based on enterprise performance	The only method that takes into account future expectations
Capitalization of income	Works currently	The real market conditions	Revenues of the enterprise and the capitalization rate	Assumed that the company will receive the same amount of profit
The sales comparison approach				
Capital market	Works currently	The real market trends	Difficult to reach data	Using the same market price of the company shares
Deals	Works currently	The real market trends	Deals of similar objects	Using the same market price of the company shares
Sectoral coefficients	Works currently	On the part of consulting groups	Deals of similar objects	Formulas are derived by consulting companies
The cost approach				
Net assets	Works currently	Based on real-life assets	Based on enterprise performance	Based on the assumption that the buyer will not pay for the object more than the sum of the costs on creating the same object
Liquidating cost	At the stage of bankruptcy	It does not always take into account the value of tangible assets	Based on enterprise performance	

Methods represent the deep analysis of the deal for integration with the necessary calculations, occupying sufficient time. However, the decision on the deal may be based on general information about the company, which provides the basis for further reflection at the same time covering different spheres of activity. For this purpose was created express-analysis of company as the object of integration.

2. METHODS

In order to achieve the objectives used scientific methods of research, such as the systematic approach, the analysis of data sets, economic and mathematical methods, methods of assessing the financial situation of enterprises and the value of companies, the method of graphic interpretation, logical, comparative, structural, factor and



retrospective analysis. Practical research is based on the companies JSC «Nefis Cosmetics» and JSC «Kazan fat factory».

The study was conducted in three phases:

During the first stage was analyzed the main methods of companies' evaluation on which basis have been systematized and identified their characteristics.

During the second stage was highlighted two complex parameters that, in our opinion, fully reflect the scopes, which must be taken into account in process of assessing the object of the deal. We identified these parameters as the financial position and competitive advantages, also determined the included factors. Then were constructed the tables in order to assess the generated criteria by their weight in the final decision in a percentage and the probability of their implementation taking into account the resources of the head company and joining company.

During the third stage were put up the indicators of weight and then the probability scores for each criterion for their further multiplication in order to estimate the final rating.

During the fourth stage these two indicators were allocated to the axes and divided into three states according to the scales. Further positions were determined by the results of the final assessment in order to make interpretation of the data based on the matrix with the recommendations.

Information and empirical base of the study were formed on the basis of the following data: the information published in scientific journals and global information network Internet; Center for Corporate Information Disclosure «Interfax»; official site of «Nefis» and «Kazan Fat Factory».

3. RESULTS

Russian reality considers the term «merger» as one of the form of reorganization of legal entities, but this understanding is rather narrow. This term has expanded its meaning and now is treated as a process of establishing control over the assets and property of the company through the association of legal entities through the acquisition of a controlling stake or a share of the participants. Consequently Russian companies do not have more winning competencies in this issue than American ones (Martin,2012).



The strategic position and intentions of companies can have a strong impact on the integration method. Target-companies facing «difficult strategic obstacles» such as the need for finance more likely to be acquired than those who are not faced with such obstacles (Haleblian,2009, p.478). At the same time there is a question of the relationship between integration and autonomy of the target, which in turn may limit the ability of the company to consolidate and realize the effectiveness (Zaheer,2013, p.627). Integration is undertaken not only for synergy, but also to revive the previously underutilized assets (Limmack,1994). So market of corporate control acts as a mechanism to improve corporate profitability. Integration strategy should also take into account issues relating to both the corporate brand and specific brands of products (Basu,2006, p. 31). That's why it's necessary to accurately select the desired ratio between brands in the combined portfolio.

Companies are struggling to create a flexible organizational system, since it requires the development of indicators such as quick decision and resources reallocation. Thus, the organization must develop a combination of knowledge as a process of codification (Brueller,2014. p.53). Its result is a portfolio of tools, such as checklists and integration instructions. Applying them, the organization increases its ability to cope with problems, neutralizes the threat.

Mergers and acquisitions involve certain risks associated with selecting the most appropriate company. As a result, have been made attempts to form a pattern on the basis of risk management theory, which could reduce the potential losses from the integration of (Chui,2011, p.39). However, one of the main features of these models is that it is highly dependent on the initial expert weighing of the main factors.

Another risk could be retaliation of competitors, which are a significant deterrent factor for mergers and acquisitions, largely ignoring by scientific research. However, in competitive industries any benefits coming to the integrating companies are likely to occur at the expense of competitors. This suggests that competitors will necessarily react on integration by reducing company's benefits. (King,2016, p.109)

To confirm the decision on the integration of a company, as well as to assess the future synergies, it makes sense to use a method of expert estimations, based on express-analysis of the company. For this purpose were formulated two questionnaires with



issues reflecting the two main indicators - financial position and competitive advantage. Estimated parameters affect the favorable outcome of a merger or acquisition and the effectiveness of future activities in general, reflecting the existing resources of the enterprise and its potential.

The methodology is based on the key points at the stage of pre-integration, when management of both companies shall decide on the deal or, contrary, reject it in mind various contradictions. Weighing indicators and points are put up on basis of data held by each party of the deal, since they affect the subsequent actions and decisions within the framework of integration, as well as pay attention to certain aspects of it. Methods of financing mergers also have a significant impact on its further efficiency and productivity (Ray,2012, p.63).

The proposed express-analysis was applied on the example of companies JSC «Nefis Cosmetics», which produces household chemicals and JSC «Kazan fat factory», which produces oil and fat products in order to verify its practical significance.

Group of companies «Nefis» carried merger of «Kazan fat factory» in 2003. Several companies refused to purchase it in mind the high costs on the development of raw material base (over 3 million). The result of the analysis showed that the synergy of marketing for «Nefis» is the ability to expand its product range. At the time of the purchase of the factory, it did not represent commercial value: technological chains have not been built and almost all the equipment was in a depressive state. With its redemption «Nefis» planned to spend on the reconstruction more than \$ 15 million at the expense of its own and borrowed funds. Despite of the poor performance, the plant was purchased. Management of company «Nefis» explains this fact that oil is a major component in the manufacture of soaps and technical acids, which is their profile. During the first stage are examined the criteria for assessing the financial condition of the company, each of which is investigated in terms of their influence on the final decision on the deal (Table 3). As a result, each of them are attributed to a total weight proportion equal to 100%. Financial condition shows how the current state of the company will affect future deal and the stability of the business.

Table 3. Proposed criteria for assessing the company's financial status



Criteria of financial condition	Weight of factor
	100%
1. There will be a decrease in the financial debt of the object of the deal (higher the debt, greater the percentage)	10%
2. Availability of tax benefits and their conservation as a result of the integration	0%
3. The object of the deal will require significant financial investments	20%
4. The shareholders will include legal entities	3%
5. The technology of production of joining companies are identical or similar	7%
6. Integration implies an increase in intangible assets in the merged company	5%
7. Production costs will be reduced within the integration (higher the cost, higher the percentage)	15%
8. As a result of the integration will be improved financial stability of the object of the deal	15%
9. Financial flows will be stabilized as a result of the integration (probably due to the different life cycles of companies)	20%
10. There will be a decline in purchasing prices by increasing of the total procurement	5%

During the second stage are examined the criteria for assessing the competitive advantages of the company, each of which is analyzed for the importance of the decision on the integration of the deal (Table 4). As a result, each of them are attributed to a total weight proportion equal to 100%. Competitive advantages illustrate the power of the brand, intangible assets, and the company's potential, etc.

Table 4. Proposed criteria for assessing the company's competitive advantages



Criteria of competitive advantages	Weight of factor
	100%
1. Brand of the company-integrator will affect the reputation of the merged company	10%
2. The integrated company will attract more customers to the existing range of products	10%
3. The integration will enable to enter new markets	20%
4. Integration will allow to reduce size of management structure and to increase the span of control	5%
5. The integration will improve product quality, reduce waste / loss	20%
6. The merged company will use its own license / patent on trademark	7%
7. Integration will unite promotions of companies	3%
8. As a result of the integration companies will share their knowledge	5%
9. The integration will create a new market niche	10%
10. As a result of the integration the merged company will have new distribution channels	10%

During the third stage deal is evaluated by assigning expert points to each criterion from 1 to 5 depending on the probability of implementation of a factor after integration within existing resources, where 1 - low probability of occurrence of a factor; 2 - is a small probability; 3 - average probability of occurrence; 4 - high enough; 5 - extremely high probability of occurrence.

Points are placed from both sides of the deal, taking into account the fact that the main company is considering integrating from more optimistic point of view, as a holder of more resources, then joining company, imagining the possible consequences, relates to the deal carefully.

During the fourth stage after assigning scores are carried out the necessary calculations to find the final score, taking into account the weight and probability of occurrence. For this purpose are formulated Table 5 and Table 6, where according to the formula (1) the weight in percentage is multiplied by the assessment of the probability from both companies involved in the deal.

Total score = weight criterion, % \times score of the occurrence's probability of a factor (1)

Table 5. Calculation of the final score by the criterion of financial condition



Criteria of financial condition	Weight of factor	Score of probability from 1 to 5		Total score	
		Company 1	Company 2	Company 1	Company 2
1. There will be a decrease in the financial debt of the object of the deal (higher the debt, greater the percentage)	10%	5	4	0,5	0,4
2. Availability of tax benefits and their conservation as a result of the integration	0%	1	1	0	0
3. The object of the deal will require significant financial investments	20%	5	5	1	1
4. The shareholders will include legal entities	3%	2	3	0,06	0,09
5. The technology of production of joining companies are identical or similar	7%	3	2	0,21	0,14
6. Integration implies an increase in intangible assets in the merged company	5%	4	3	0,2	0,15
7. Production costs will be reduced within the integration (higher the cost, higher the percentage)	15%	5	4	0,75	0,6
8. As a result of the integration will be improved financial stability of the object of the deal	15%	5	4	0,75	0,6
9. Financial flows will be stabilized as a result of the integration (probably due to the different life cycles of companies)	20%	4	3	0,8	0,6
10. There will be a decline in purchasing prices by increasing of the total procurement	5%	3	3	0,15	0,15
Total				4,42	3,13

By multiplying the results of columns of the table data of all criteria are summarized for the purpose of their subsequent use as a frame of the x-axis. Summary of the following criteria is calculated in a similar manner and illustrates input data to the y-axis.

Table 6. Calculation of the final score by the criterion of competitive advantage



Criteria of competitive advantages	Weight of factor	Score of probability from 1 to 5		Total score	
	100%	Company 1	Company 2	Company 1	Company 2
1. Brand of the company-integrator will affect the reputation of the merged company	10%	5	4	0,5	0,4
2. The integrated company will attract more customers to the existing range of products	10%	5	4	0,5	0,4
3. The integration will enable to enter new markets	20%	4	3	0,8	0,6
4. Integration will allow to reduce size of management structure and to increase the span of control	5%	4	5	0,2	0,25
5. The integration will improve product quality, reduce waste / loss	20%	5	4	1	0,8
6. The merged company will use its own license / patent on trademark	7%	3	2	0,21	0,14
7. Integration will unite promotions of companies	3%	3	2	0,09	0,06
8. As a result of the integration companies will share their knowledge	5%	3	3	0,15	0,15
9. The integration will create a new market niche	10%	4	3	0,4	0,3
10. As a result of the integration the merged company will have new distribution channels	10%	4	3	0,4	0,3
Total				4,25	3,7

During fifth step it is necessary to place the results in a matrix. The total value of the company, which was received according to the criteria of the financial condition and competitive advantage will depend on its position, and hence the recommendations related to the cause of integration and its consequences.

The obtained results according to the criteria should to be interpreted as follows:

- 3.6 to 5 points: poor
- 1.8 to 3.5 points: average
- from 0 to 1.7 points: good

The data presented above illustrates the following results of two factors. The results of the Company 1 (JSC «Nefis») revealed the poor condition of the two indicators, which



is determined by the bottom left quadrant, while the position of the Company 2 is based on the average financial condition, but on the bad competitive advantages. (Figure 1)

		Poor (3,6 - 5)	Average (1,8 – 3,5)	Good (0 – 1,7)
Financial conditions	Good	It is necessary with the help of a brand of the parent company, its well-established relationships and financial resources build the competitiveness of the merged company	The merged company will use their own resources to support competitiveness within the limits of support of a larger parent company	There will be a veiled monopolization of the market as a result of the deal, based on mutual benefits
	Average	Require financial investments in brand development or use of well-established links with the aim of improving the financial condition of the merged company	The subject is not fully in decline, the parent company is using its resources for the development of the merged companies, making it dependent	Integration with the objective of financial support to the company on the market
	Poor	It is necessary to think about the goal of integration. Perhaps, the reason is subsequent diversification	Need to invest in further development of the competitiveness in order to improve the financial condition	Requires analysis of resource use, production process
		Competitive advantages		

Figure 1. Interpretation of matrix

The table illustrates the following results of two factors: the financial condition of JSC «Kazan Fat factory» in opinion of the future parent company JSC «Nefis Cosmetics» is presented as a bad on both counts. This is confirmed by the fact that the company is in fact the investor, whose priorities are financial issues, which takes more weight among other factors, and hence the greater probability of their implementation. Merged company, knowing that soon will gain dependence on the parent company cannot be in full extent confident in the future action plan for integration.

Presented below recommendations fully agree with the motive of the integration of this example occurred in 2003, which confirms the scientific objectivity of the model. In the context of the direct integration of the company «Nefis Cosmetics» likely guided by the following features: diversification, facilitation of the access to financial resources, the growth of the customer base, etc.

4. DISCUSSIONS



The basis for the theoretical aspects of mergers and acquisitions comprise textbooks of foreign authors such as D. Depamfilis and S.Rid, covering all stages of the deal, from planning to completion of the direct integration for businesses of all sizes and P. Gohan with detailed description of modern methods of business valuation. D.Fishmen and F.Evans in their works provided an opportunity to get acquainted with the activity of valuation used in the field of consulting, auditing and financial analysts. T.Kouplend also covers methods of valuation, considering important aspect - the relationship of financial resources and the strategy of the company.

Authoritative work in the analysis of the theme is book of K.G.Ray. The author examines the basic concepts and strategic features of mergers and acquisitions, various aspects of business valuation in the context of a company's integration, errors and anomalies of the discounted cash flows. The work also contains recommendations for researches based on the integration of transactions.

Expanded and adapted the theme for Russian realities A.Gryaznova, considering not only the concept of assessment activities and methods, but also the international practice with concrete examples of valuations, and A.Molotnikov, debunking common myths about integration and describing the error in the process, charts and development prospects. A.Begaeva in the work complements the theory in legal aspects of mergers and acquisitions on examples of foreign countries and Russia.

The concept and the creation of synergies overlooked in the monograph of S.Dokunina. The question of the analysis of already established integrated corporate structures addressed in the I.Hrabrovoy.

5. RESULTS

The characteristic feature of developed markets became intensive processes of mergers and acquisitions, which as a result lead to an increase in the efficiency of capital. Undoubtedly, these deals are signed only if both parties see the benefits for themselves. Recently, however, with the development of integration processes exacerbated the problem of creating conditions for development effectiveness of highly organized forms of business management from an economic point of view.

The processes of mergers and acquisitions are one of the most important tool in the redistribution of funds and resources in the global economy, as well as in the formation



of corporate strategy. Thus, the formation of an effective mechanism will provide an opportunity to make the process of management of integrated structures efficient and maximally operational due to its regulation. This will result in an increase of economic efficiency, and thus increase its value.

In accordance with the specified purpose of the work was carried out the attempt to simulate the express-assessment on the stage of preintegration with justification of results. Application of the proposed method allows to analyze two key indicators - the financial position and competitive advantage. Estimated parameters affect the favorable outcome of a merger or acquisition, and the effectiveness of future activities in general, reflecting the existing resources of the enterprise and its potential.

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