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BUSINESS-AGREEMENTS AT THE CONCENTRATION OF PRODUCTION

Structural and logical algorithm for selecting prospective business agreements for concentration of production at enterprises proposed at the decision-making stage of a business combination, which includes such necessary steps as defining a business strategy; assessing the ability of target companies to create «rebound» synergistic benefits; setting criteria and determining the magnitude and maximum net synergy effect. The proposed structural-logical algorithm allows developing a scenario of expediency of concluding agreements taking into account various forms of manifestation of synergistic effect, which will help to increase the economic validity of expectations of concentration effects.

Keywords: *business agreement, synergy effect, the concentration of production, enterprise.*

Кравець Катерина. Бізнес-угоди при концентрації виробництва.

Запропонований структурно-логічний алгоритм вибору перспективних бізнес-угод для концентрації виробництва на підприємствах на етапі прийняття рішень бізнес-злиття, що включає такі необхідні кроки, як визначення ділової стратегії; оцінка здатності цільових компаній створювати «рикошетні» синергетичні переваги; встановлення критеріїв та визначення величини та максимального чистого ефекту синергії. Запропонований структурно-логічний алгоритм дозволяє розробити сценарій доцільності укладання угод з урахуванням різних форм прояву синергетичного ефекту, що допоможе підвищити економічну обґрунтованість очікувань ефектів концентрації.

Ключові слова: *ділова угода, синергетичний ефект, концентрація виробництва, підприємство.*

Relevance of research topic. The concentration of production does not always meet the expectations of enterprises. The analysis of the reasons for the unsuccessful concentration processes revealed that the main factors are: overestimation of market potential and synergistic effect [1]; lack of synergy assessment, lack of concentration

plan, underestimation of synergy from concentration processes [4]; incorrect financial calculations and market valuations or wrong strategic choice of a partner for merger or acquisition [3]; insufficient competence of specialists who organize and carry out the operation, including at the stage of integration of objects [6].

Formulation of the problem. Many questions remain debatable, especially regarding practical methodological approaches to assessing the effects of concentration of production, substantiation of the structural-logical algorithm for selecting promising agreements, and determining priority areas for the development of the concentration of production at enterprises.

Analysis of recent researches and publications. Problems of concentration of production, as well as the results and its consequences, have been studied at the micro, macro and international levels by many foreign scientists such as I. Burdet, J. Blair, Y. Brigham, R. Braille, T. Galpin, P. Gohan, T. Copeland, P. Krugman, F. Miller, R. Higgins, G. Hoyt, R. Burganov, A. Dolonts, N. Dyachkov, O. Kislova, N. Kutsevol, V. Lapo, I. Lukashov and others. In their studies, scientists focused on the features of production concentration, forms, and mechanisms of its implementation.

Issues of development of the concentration of production, in particular at the business agreement, are devoted to the work of domestic scientists such as S. Arzhevitin, A. Gerasimenko, I. Kopachinska, L. Kryuchkova, V. Marchenko, T. Melnyk, T. Mostenska, S. Nikitchenko, V. Osetsky, M. Sychevsky, N. Skopenko. They explain the motives, principles, and stages of the concentration of production at enterprises, theoretically substantiate methods of determining its level and results.

Presenting main material. Solving the problem of developing a comprehensive model for the estimation of the synergy effect and the method of selection based on potential target enterprises for concluding production concentration agreements is of great importance for the effective development of modern food industry enterprises.

As stated in the previous sections, the estimation of the expected effect and, accordingly, the magnitude of the risk at the concentration of production is an estimate of the magnitude of the expected synergy from the merger. In this regard, we propose an algorithm for selecting enterprises to concentrate production on the following elements:

1. Develop a set of qualitative criteria that the expected partner should meet.
2. Assessment of all potential candidates for pooling to meet the required criteria.
3. Estimation of the expected economic effect of the concentration with the candidates who have passed the preliminary selection stage.
4. Selection of the candidate for the criterion of the maximum expected economic effect [3].

In the first stage, the selection of potential partners based on the analysis of the following indicators: an indicator of quantitative compliance of enterprises; an indicator of quality compliance of enterprises.

The enterprise quantitative compliance indicator (Pqn) means the overall compliance of both enterprises in such parameters as equipment, technology, suppliers of raw materials, management system, accounting and financial control methods, methods and quality of personnel training, strategic management, market and sales networks, consumer segments, marketing channels, R&D, tax and debt load, market share, size of enterprise, organizational structure [5].

The qualitative compliance indicator (Pql) takes into account such parameters as the comparability of corporate culture, management style, the microclimate of enterprises, regional peculiarities of doing business, value expectations of the staff [2].

It is advisable to calculate the indicators of quantitative and qualitative compliance of enterprises by the following formulas:

$$П_{qn} = \sum_{j=1}^{m} W_j \sum_{i=1}^{n} W_{ij} K_{ij}; \quad (1)$$

$$П_{ql.} = \sum_{j=1}^{m} W_j \sum_{l=1}^{p} W_{lj} Q_{lj} \quad (2)$$

where *Kij* – is the value of the expert evaluation of the i-th factor of quantitative correspondence by the j-th expert;

*Wi*j – the value of the weight of the i-th factor of quantitative conformity given to him by the j-th expert;

n – is the number of factors of quantitative conformity;

Qlj – the value of the expert evaluation of the i-th factor of qualitative compliance by the j-th expert;

Wlj – the value of the weight of the i-th factor of qualitative conformity, given to him by the j-th expert;

l – number of factors of qualitative conformity;

Wj – weight of the j-th expert;

m – is the number of experts involved in assessing the degree of compliance of the merging companies.

A favourable decision to agree should be made provided that:

$$Pqn. \geq A; \quad (3)$$

$$Pql \geq B, \quad (4)$$

where *A* and *B* are, respectively, the minimum acceptable to the enterprise values of their quantitative and qualitative compliance.

According to these conditions it is possible to construct the function of expediency of concluding an agreement for enterprises – Conc (*Pqn*, *Pql.):*

$$\text{Conc}\ (Pqn., Pql) = \text{Heav}(P_{qn} - A) \cdot \text{Heav}(P_{q\text{l}} - B), \quad (5)$$

where Heav (x) is a single function of Heaviside:

$$\text{Heav}(x) = \begin{cases} 0, & x < 0; \\ 1, & x \geq 0. \end{cases} \quad (6)$$

The Conc (Pqn, Pql) function becomes 1 only when the above conditions meet. Otherwise, it becomes 0 and means that the concentration of production of the analyzed enterprises is impractical.

This function cannot serve as a tool for the final merger decision since it allows only the initial selection of the most promising candidates to agree. The final selection of the object for the merger is subject to the achievement of the expected synergistic effect by determining the integral index. Its value formed by increase in revenues due to the expansion of the range, distribution channels, obtaining a monopoly position and a corresponding increase in prices; cost reductions caused by reductions in duplicate functions and industries, the ability to purchase raw materials at lower prices; savings achieved through the improvement of technologies and processes through the use of advanced efficient technologies and business processes by one of the members of the merger; financial savings, which are to reduce capital expenditures due to the reduction of overall credit risks; revenue from the sale of units (which have become redundant as a result of business combinations or at the behest of antitrust authorities); the cost of conducting a merger agreement (share repurchase) (TV); payment for the services of consultants who provided management and information support in the implementation of the merger (TV1); costs of enterprise integration (integration of corporate cultures, reorganization and closure of units, payment of compensation to dismissed employees, etc.) (TV2); losses from reduced sales (due to the sale of part of the units at the disposal of the antitrust authorities); losses from adopting price regulation measures in relation to the merged entity (as its market share has become significant and therefore threatening to free competition and consumer interests).

It is necessary to conclude an agreement with the enterprise for which the effect obtained, taking into account the mentioned benefits and losses will maximize. To this end, it is necessary to select partners to agree about the concentration of production. We suggest the selection according to the following scheme:

1) drawing up a list of prospective candidate companies for the conclusion of the agreement;

2) determination of minimum values of quantitative and qualitative conformity, at which conclusion of the agreement is expedient;

3) calculation of quantitative and qualitative indicators for each candidate;

4) verification of all candidates utilizing the Conc function (Pqn, Pql);

5) calculation for the candidate companies of the value of the synergistic effect indicator;

6) agreeing with the candidate for whom the value of the synergistic effect indicator is maximum.

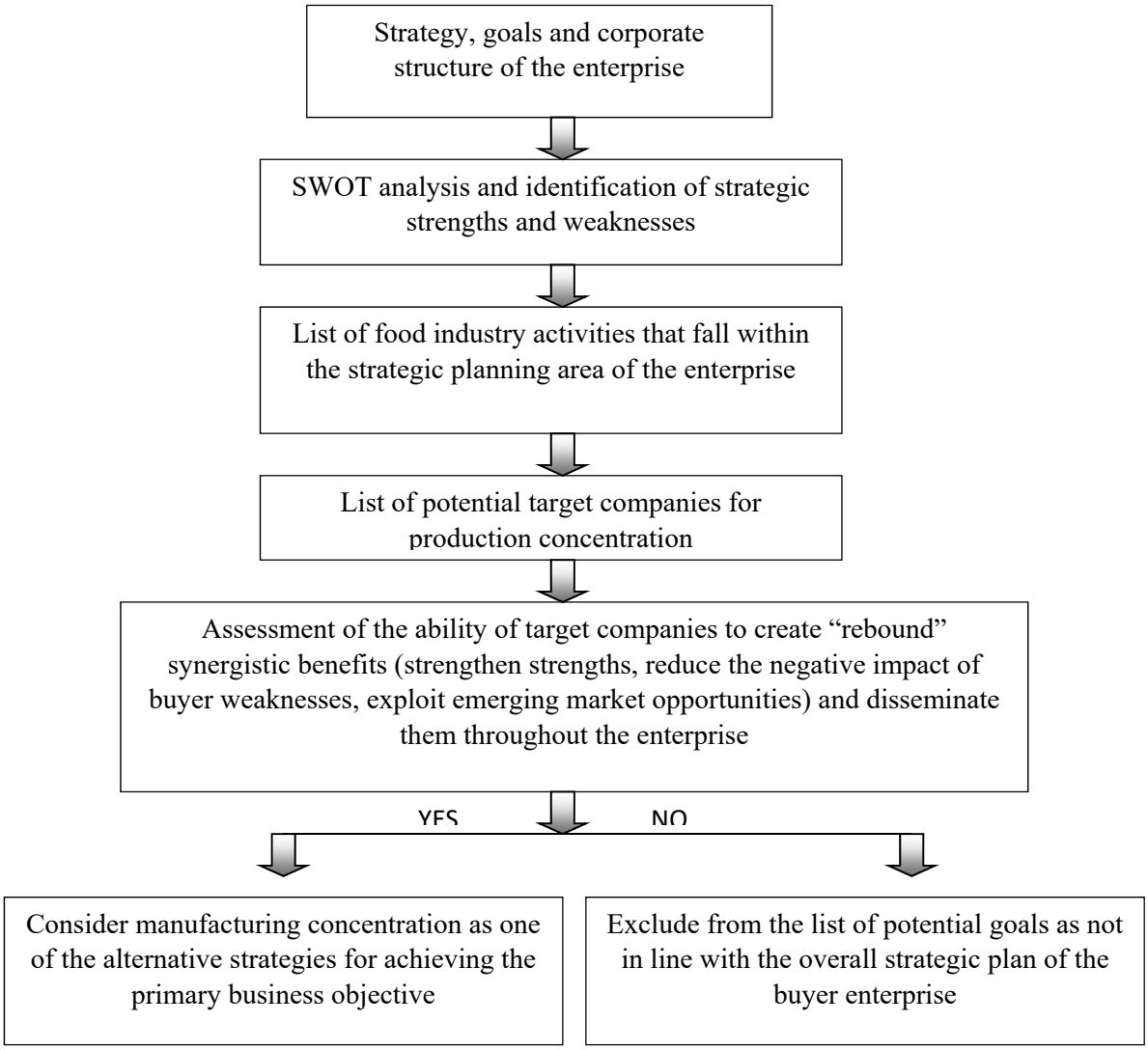

Figure 1. The scheme for determining the strategic direction of concentration of production and search for potential target companies

Source: Developed by the author.

he proposed algorithm allows to select the optimal object for production concentration under the conditions of the maximum expected synergistic effect, as well as to minimize the risks of non-achievement of this effect (and the cancellation of the agreement as such) by ensuring the maximum compliance of the production concentration predicted by the partners for each party.

Drawing up a list of prospective candidate companies for concentrating production on food processing enterprises involves, first, the definition of a strategic direction for integration and the search for potential target enterprises (Figure 2).

It should note that the competitive advantages and incremental value of the merged entity depend first and foremost on the quality of the agreement and the existence of a clear strategy for concentrating production – the rigid discipline in this process justified by reducing the time and expense of considering inappropriate goals [8].

In this regard, it becomes necessary to develop a mechanism for making management decisions on the selection of valid agreements for the concentration of

production based on the integral synergistic effect indicator as one of the criteria for evaluating the cost management of the economic system.

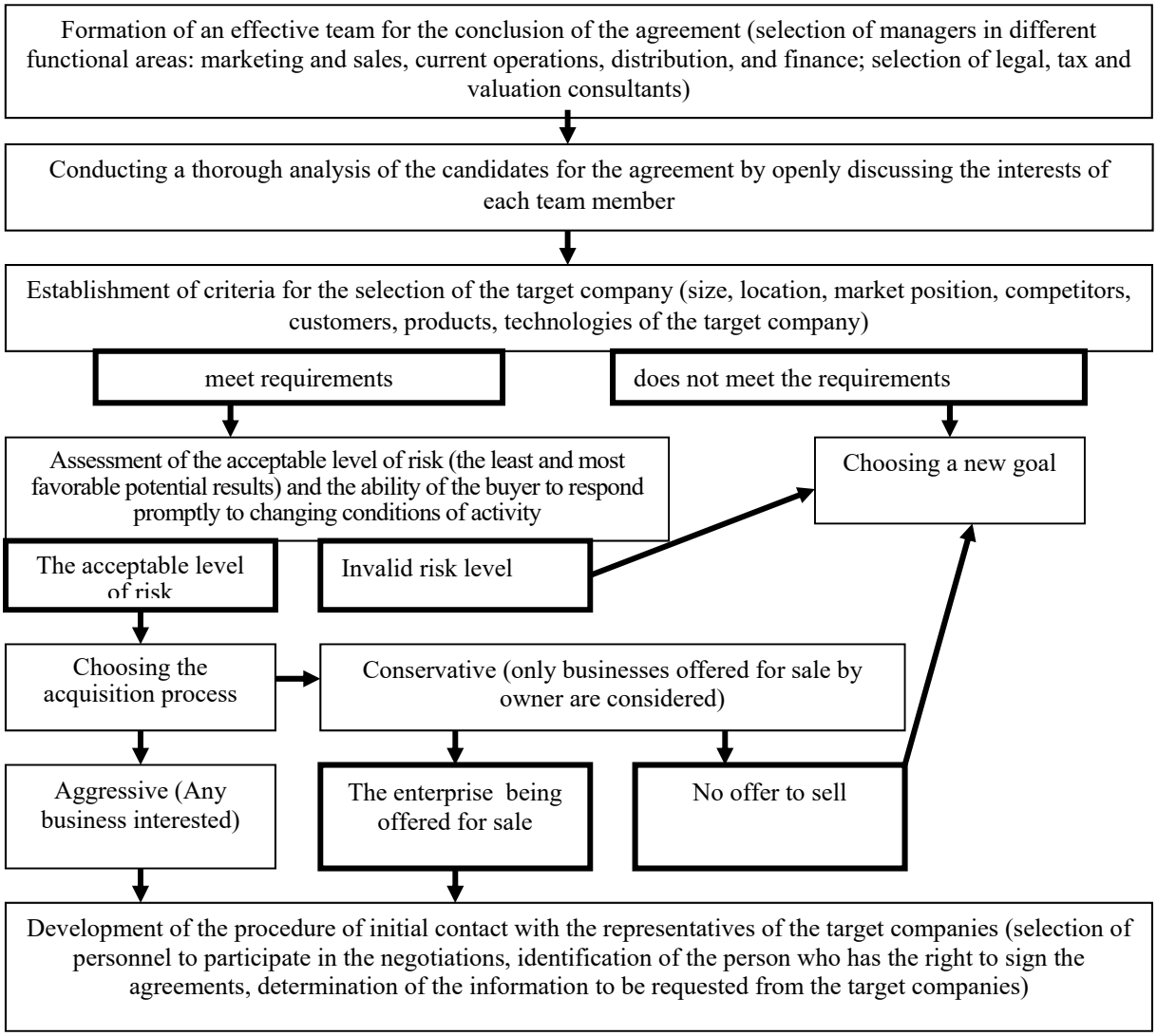

Figure 2. The scheme of the selection of candidate companies for the conclusion of the agreement at the concentration of production

Source: Developed by the author.

Each of the blocks in the mechanism of selection of effective transactions in the implementation of the concentration of production, as above, must be provided with an appropriate methodological basis.

Determining the strategic direction of integration and preliminary selection of options for integrated development (Fig. 2) is based on descriptive models and strategic analysis methods that provide the necessary information base – SWOT analysis, BCG matrix.

The management decision-making mechanism for the selection of efficient to concentrate production is based on the position that strategic enterprise management requires the presence of a synergistically connected business core (basic competence, deep understanding of the relevant type of food industry activity), the maintenance and growth of which becomes the main task of the corporate center.

The motives behind the concentration of production, and therefore the forms of manifestation of the synergistic effect of such agreements and its magnitude as a whole, are determined by the field of activity to which this or that enterprise belongs.

Target companies analysed based on a list of selection criteria that will limit the range of future candidates to concentrate production:

– the sphere of activity of the food industry (the question of which integration is vertical or horizontal appropriate) is solved;

– products and services (the desire to acquire a target company with a better brand, a more extensive range of products or services of higher value may be the motive for integration);

– compliance of the target company with the system of marketing, sales, and distribution of the buyer, as well as the analysis of sales volumes and profit of the target company;

– cost minimization (the possibility of reducing the target company costs, the potential for cost combination) is analyzed;

– weaknesses that can be improved; geographical area; management apparatus of the target company; competitors;

– specific skills or technologies are belonging to the target company. After limiting the range of potential objects for concluding a production concentration agreement, the selection of a specific target enterprise is made based on an assessment of the potential concentration efficiency, taking into account the various sources and forms of synergistic effect.

The synergistic effect calculated and based on the results obtained, a final decision made as to the feasibility of agreeing following the chosen strategic areas of concentration [2]. The magnitude of the synergistic effect to select enterprises for the concentration of production can be estimated based on an estimate of the incremental value of the combined enterprise and the costs incurred for the conclusion of the transaction (transaction costs and premium):

$$Ec = [B – (B_1 + B_2)] – P – TV, \quad (7)$$

where *Es* is the synergy effect;

B – the investment value of the combined enterprise, taking into account the expected synergistic effect;

B_1 – cost of the status-quo buyer (as an independent);

B_2 – the value of the enterprise-purpose «status quo» (as an independent);

P – the premium paid by the buyer company to the shareholders of the target company;

TV – transaction costs.

The premium paid upon entering into an agreement by the buyer company to the shareholders of the target company (P), the costs and losses of the buyer enterprise during the process of concentration of production (TV) are considered by us as a one-off cost that the buyer bears directly at the time of the conclusion of the agreement (Fig. 3).

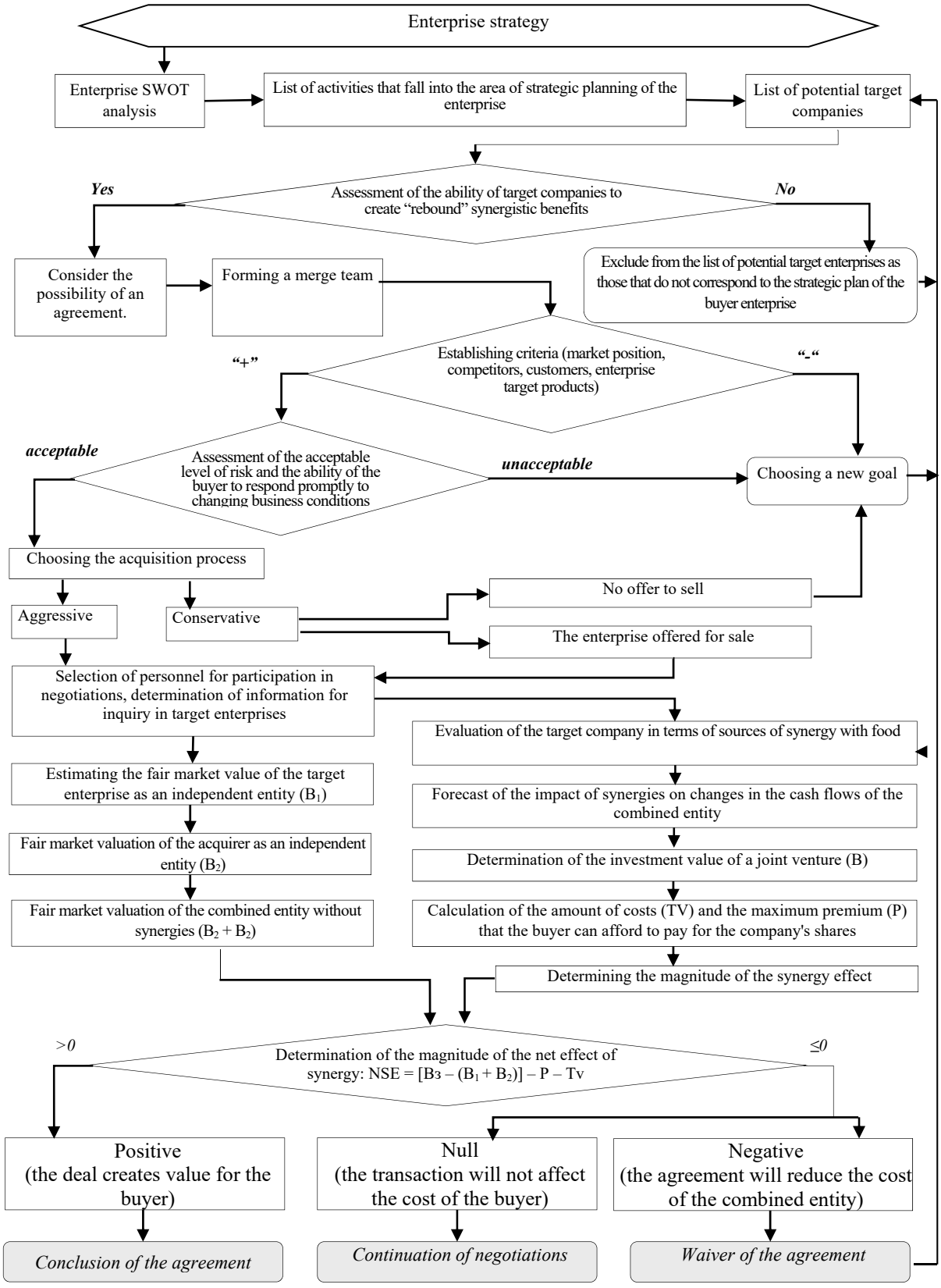

Figure 3. Structural-logical algorithm of selection of promising agreements for the concentration of production for food industry enterprises

Source: Developed by the author.

On the basis of the proposed methodology for evaluating the synergistic effect as one of the main criteria for the feasibility and effectiveness of concluding agreements for the concentration of production at enterprises and procedures for the search and selection of the target company, a structural-logical algorithm for the selection of prospective agreements for the implementation of concentration of production for food industry enterprises developed

Conclusion. The algorithm for selecting enterprises for concluding an agreement while executing a concentration of production involves: developing a set of qualitative (comparability of corporate culture, management style, microclimate of enterprises, regional peculiarities of conducting business, value expectations of personnel) and quantitative (general correspondence of two orпanizations in such parameters as equipment, Technology, Suppliers of Raw Materials, Management System, Strategic Management System, Market and Networks, Consumer Segments, Market channels etc.) criteria to be met by the expected partner; evaluation of all potential candidates for association for compliance with the established criteria; evaluation of candidates who have passed the preliminary selection stage, subject to the expected synergistic effect of combining with them; selection of the candidate with the maximum expected effect on concentration of production. The magnitude of the synergy effect for business selection purposes can determine by estimating the incremental cost of the combined entity and the costs incurred in entering into the transaction.

The algorithm will help to prevent the negative effects of transactions for the concentration of production at enterprises and will allow the buyer to participate only in prospective transactions.

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