"Effective synergic interaction of strategic business units of diversified company"

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EFFECTIVE SYNERGIC INTERACTION OF STRATEGIC BUSINESS UNITS OF DIVERSIFIED COMPANY

Abstract

Integration processes in the global economy promote the development of diversified integrated companies, representing a group of legally and economically independent and/or affiliated companies that carry out joint activities based on interaction and interconnections development. It is the study of the interconnections of strategic business units of diversified companies that allows to distinguish synergistic interaction features, which, in the long run, ensures the achievement of sustainable competitive advantages for companies. The main purpose of this study is to distinguish the features of the synergistic interaction of strategic business units of diversified companies and the creation of management tools for them. The authors developed and presented the simulation model for managing the interaction of strategic business units of diversified companies based on synergy and proposed an algorithm for its application in real business practice for a company operating in the building ceramic market.

INTRODUCTION

In modern companies, the process of self-adjustment for the optimal mode of operation is objective and involves the unification of all participant efforts to create a sustainable living environment. That said, the boundaries of the internal environment are expanded to the immediate external environment by integrating suppliers, partners, competitors, and stakeholders. The degree of such companies' potential realization depends, first of all, on the effectiveness of their management and the ability of all participants (structural units) to function as a single and coordinated system.

The activities of a diversified integrated company are characterized by increased interconnection, mutual influence and interactions between its elements, which significantly affects the overall performance of the group as a whole and its individual participants. Developing a corporate strategy for a diversified company requires the considering and using all the benefits of the internal organizational competencies of each individual participating company and the group as a whole. At the same time, achieving complex and systematic company activity requires the search for priority areas of interaction and mutual support between its strategic business units (SBU).

1. LITERATURE REVIEW AND PROBLEM STATEMENT

The main study background consists of research and scientific papers.

Ansoff (1965) views strategy as a plan, which "is designed to transform the firm from the present position to the position described by the objectives". Main strategy`s components are: product-market scope, growth vector, synergy, and competitive advantage. The end product of strategic decisions implies some combinations of products and markets selected for the firm. The author denotes synergy as "effect which can produce a combined return on the firm's resourses greater than the sum of its parts" and differentiates sales synergy and management synergy. He also notes that synergy can be negative and proposes a synergy assessment framework, which estimates the contribution to the parent company and to the new business (product) and also assesses their joint opportunities. He developed "capability profiles" in order to "accommodate synergy and strengths and weaknesses within the same analytic framework". He characterized this model as a "cascade of decisions, starting with highly aggregated ones and proceeding towards the more specific".

Porter (1987) notes two levels of strategy for diversified companies: business unit strategy and corporate strategy. These strategies determine how to create competitive advantage in each of the businesses the company competes with, what businesses the firm should be in and how the main office should manage the array of business units. He emphasizes that corporate strategy creates value only when exploits the interrelationships (interactions) between company's business units. The need to capture the benefits of relationships between businesses has never been more important, unfortunately, instead of cooperating, business units often compete.

To clarify the role of relatedness in corporate strategy, Porter distinguishes primary activities (create the product or service, deliver and market it, and provide after-sale support) and support activities (provide the inputs and infrastructure that allow the primary activities to take place).

Interaction leads to competitive advantage only if the similarities among business units meet the following conditions: the activities are similar enough that sharing expertise is meaningful; interrelationships involve activities that are important to competitive advantage; the competencies and/or resources transferred represent a significant source of competitive advantage for the receiving unit (the expertise or skills to be transferred are both advanced and proprietary enough to be beyond the capabilities of competitors). Therefore, the interaction between units, as well as competencies and skills transfer, are active elements that significantly change the operational strategy of the receiving unit.

Porter determines that to translate the principles of corporate strategy into successful diversification, the company should: identify the interrelationships among already existing business units; select the core businesses that will be the foundation of the corporate strategy; create horizontal organizational mechanisms to facilitate interrelationships among the core businesses and lay the groundwork for future related diversification; pursue diversification opportunities that allow shared activities; pursue diversification through the skill transfer if opportunities for sharing activities are limited or exhausted; pursue a strategy of restructuring if this fits the skills of management or no good opportunities exist for forging corporate interrelationships.

Mahajan and Wind (1988) denote that potential synergy among the SBU can generate a product-market portfolio with a higher profitability by allowing a firm to operate more efficiently and/or effectively in managing its scarce resources. They use PIMS data to explore the relationship between synergy and profitability.

Zhou (2011) argues that to realize synergy, a firm needs to actively manage the interdependencies between different business lines (SBU), which, in turn, increases its coordination costs. This is particularly salient when the firm's existing business lines already have complex interdependencies among them. Testing results of U.S. equipment manufacturers' dataset presented in the paper show that a firm is more likely to diversify into a new business when its existing business lines can

potentially share more inputs with the new business; however, the firm is less likely to diversify into any new business when its existing business lines are complex. These results also suggest that increasing coordination costs counterbalance the potential synergistic benefits associated with related diversification.

We transform their methods as: a hybrid multiple criteria decision-making model to show the dependent relationships among strategic business units of diversified companies and to rank SBU; decision-making trial and evaluation laboratory method (DEMATEL) to build a relation-structure among business units; Analytical Network Process to determine the relative weights of each SBU with dependence and feedback (Fazli, 2012).

We use an integrated fuzzy multi-criteria approach and TOPSIS to evaluate the performance of interactions and synergy between SBUs. The evaluation procedure consists of the following steps: (1) identify the evaluation dimensions and criteria; (2) assess the importance of each criterion by the voting method; (3) aggregate the assessments for lower-level criteria of each dimension; (4) represent the performance assessment for each criterion by fuzzy numbers; (5) use TOPSIS as the main device in ranking the interaction and synergy between SBUs.

The DEMATEL method used by Fazli Jafari (2012) can be summarized in the following steps: calculate the initial average matrix by scores; calculate the normalized direct-influence matrix; derive the total direct-influence matrix; set threshold value and obtain the impact relation map.

The analytic network process (ANP) is used in our research to: 1) compare SBUs in whole system to form the supermatrix (this is done through pairwise comparisons by asking "How much importance/influence does an SBU have compared to another SBU with respect to our interests or preferences?" The relative importance value is determined by using Saaty scale of 1-10 to represent equal importance to extreme importance); 2) derive the weighted supermatrix by transforming all column sums exactly to unity; 3) raise the weighted supermatrix to limiting powers to calculate the overall priorities.

We use proposed balanced scorecard model (BSC) to categorize the most important interactions affecting the synergy between SBUs and these interactions are ranked based on DEMATEL method (Amiria, 2011).

The *purpose of the article* is to identify features of SBU interaction in diversified companies based on synergism and to create their management tools.

Research methodology. In order to develop a model for managing the SBU interaction based on synergy, methods of simulation modeling, correlation-regression and multi-criteria analyses, and expert evaluation were used.

Methods for fuzzy logic, such as TOPSIS, Hierarchy Analysis Method (HAM), Saaty scale, and ANP were used to study the interaction between strategic business units and to evaluate the synergy obtained. Applying the DEMATEL technique enabled to develop a multicriteria structural model, which reflects the hierarchy of complex causal relationships between the SBUs and the synergistic effects obtained.

Research finding. Effective general management of a diversified company as a whole and active rational interaction between its SBUs can become sources of generating various types of synergistic effect, in particular: operational (production), functional (based on complementarity and complementary effect), marketing (trade, marketing), diversification, financial, managerial (command, organizational), strategic, general (global, resultant, integral) synergy, which may contain all or some of the listed types of synergism and consists in an emergent effect as a result of the partner efforts unification.

The integrated integral synergistic effect of SBU interaction in diversified enterprise can be represented as balance between two main effects – the effect of complementarity (diversity) and the effect of scale (similarity). The balance of effects is necessary, since the SBU diversity increases the strategic flexibility of the enterprise, and their similarity limits it, which significantly influences the stability of the group in the long run.

As for diversified firms, it is necessary to integrate their components into a single whole by

Stage 1. Strategic segmentation of the company

SBU$_1$ | SBU$_2$ | . . . | SBU$_n$

Stage 2. Shaping a group of experts

Expert "core"

Specialized experts

Specialized expert groups

Stage 3. Allocating interaction scopes between SBU and determining their significance

Interaction scope 1 | Interaction scope 2 | Interaction scope … | Interaction scope L

Stage 4. Allocating types of interaction in each area, defining their weight coefficients according to Saaty HAM

Types of interaction in scope 1 | Types of interaction in scope 2 | Types of interaction in scope . . . | Types of interaction in scope L

$$w_{11},....,w_{1N_1}$$ | $$w_{21},...w_{2N_2}$$ | . . . | $$w_{L_1},....,w_{LN_L}$$

Stage 5. Identification, analysis and estimation of pair and integrated interaction between SBU and every area

Stage 6. Estimating the general level of synergism on every interaction scope

Stage 7. Construction of local and integrated matrix of "Interaction-Synergism"

Stage 8. Presentation of results, justification of strategic recommendations as to SBU interaction and increasing the level of synergy between them
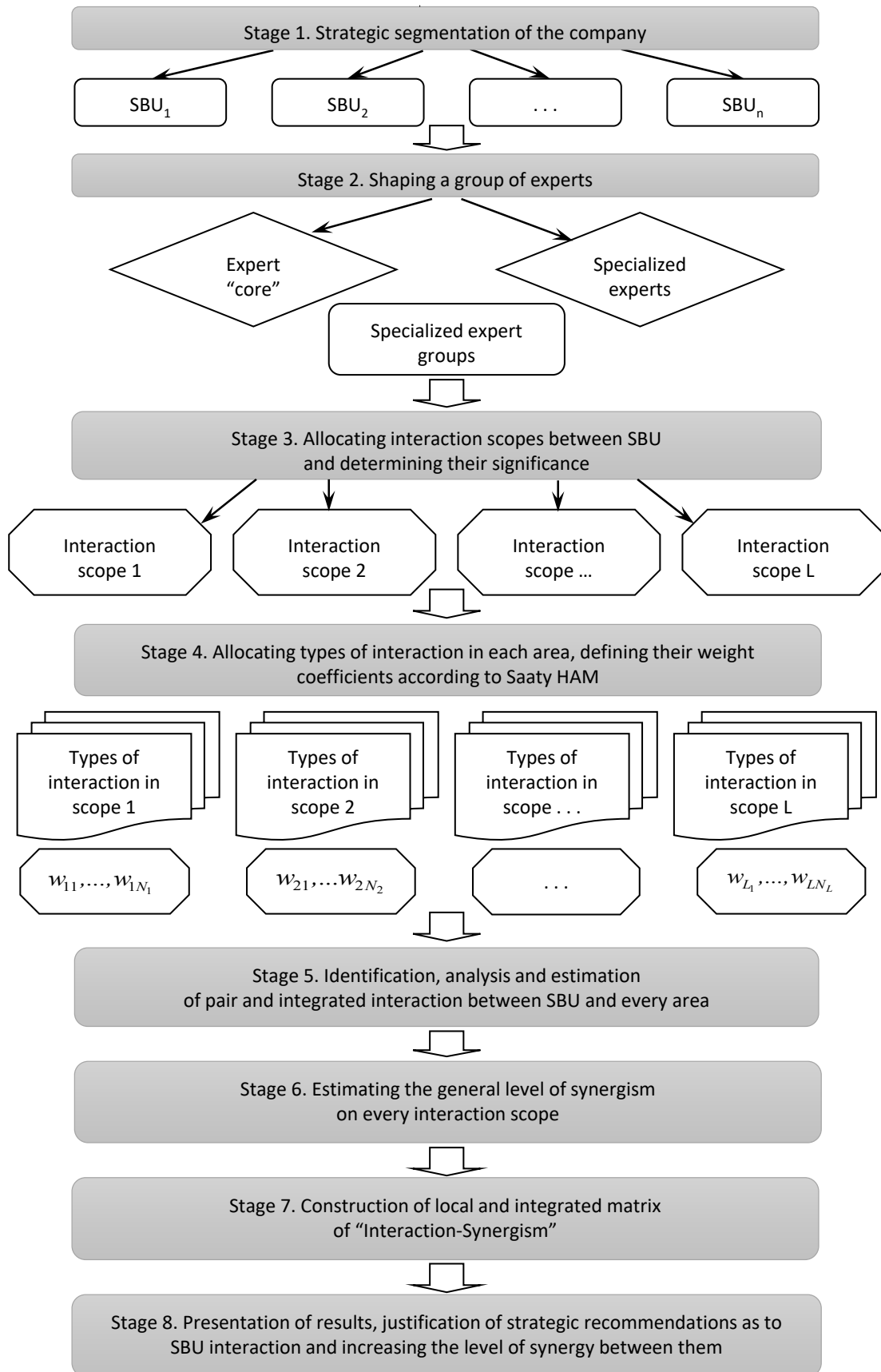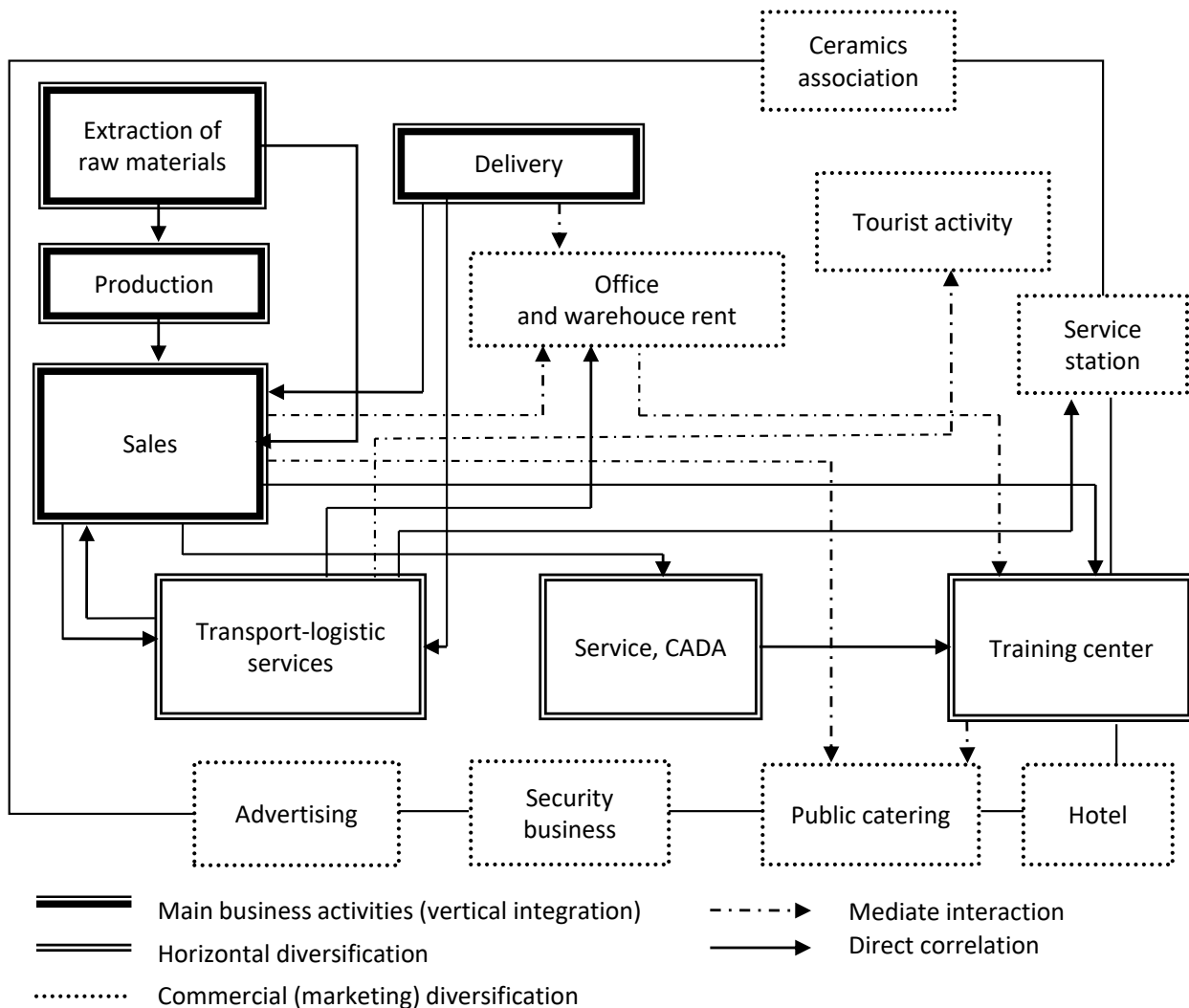
Figure 1. Simulation management model of SBU synergic interaction of diversified enterprises

Note: * developed by authors based on Ahromat Group internal documentation.

Figure 2. Ahromat Group business activity*

strengthening inter-functional relationships and creating internal-corporate rules for conducting joint business within a diversified portfolio of activities on the synergy basis. The main problem of management in this case is the maintenance of organic unity in the functioning and interests of all members. This is achieved through corporate coherence between individual SBUs' strategies within a diversified portfolio and the overall corporate strategy of the group as a whole. Therefore, the main objective of management in a diversified business is to increase the overall company competitiveness through increased synergy between its structural elements. The authors developed a model for controlling the interaction of diversified companies based on synergy (Figure 1).

The model was tested based on the materials of diversified group of companies Agromat, whose main business interests are concentrated on the ceramic tile market, bathroom fitment, building materials, furniture and light and in the service sector (Mezhdunarodnyy nauchno-proizvodstvennyy zhurnal "Keramika: nauka i zhyzn"; LLC "Ahromat").

Stage 1.

The strategic segmentation of the company involves identification of the existing SBU according to the criteria stipulated by its operative peculiarities (goods, activities, markets, components of the integrated logistics system, etc.). This stage will result in the selecting the limited set of SBU_i, that reflects the enterprise portfolio.

The activities of Ahromat Group are represented by 15 business areas (Figure 2): supply and sale of construction and related materials; extraction, processing and sale of raw materials for the ceramic tiles production; production of tiles (sidewalk, facade, ceramic, glass, decorative); manufacturing of commercial equipment; kit assembly (manufacturing) of hydromassage baths; organization of domestic and international transportation; the club of architects and designers Ahromat (CADA); service (online shop, modeling and interior visualization, installation and repair of sanitary equipment, design services); logistic (warehousing) services; advertising activity; tourism activity; public catering; rental of office, retail and warehouse premises; training center; service station and car wash; security services (Mezhdunarodnyy nauchno-proizvodstvennyy zhurnal "Keramika: nauka i zhyzn"; LLC "Ahromat").

The Group brings together 25 companies from different sectors. Simultaneous vertical, horizontal and conglomerate marketing synergistic diversification of the group's activities, makes it expedient to allocate the following SBUs:

- SBU_1 – delivery and production;
- SBU_2 – transport and warehouse logistics;
- SBU_3 – distribution, sales and service;
- SBU_4 – related services.

Stage 2.

Shaping the group of experts, which are heads of the SBUs and/or their structural units and have interconnected with other units that are potentially important for managing the group as a whole. The expert "core" includes senior management and functional managers such as: Commercial Director, Economics Director, CFO, Director of Transport and Warehouse Logistics, Director of Sales Department, Director of a Shopping Center. Specialized experts are 29 people who are managers of different management levels in all functional areas of the company.

Stage 3.

Identifying the areas of interaction between SBUs and determining their importance. Under the sphere of interaction, we consider the type of cooperation between individual members. Experts from the Agromat Group identified the following key interaction scopes between SBUs: IF – investment and financial (IS_{IF}); OP – operating and production (IS_{OP}); MT – marketing and trade (IS_{MT}); MS – management strategy (IS_{MS}). The relative weight coefficients of each interaction scope was determined by the hierarchies analysis method of Saaty (HAI) based on collective expert decisions on the importance of each interaction scope in comparison with other (Saaty & Katz, 1990).

According to the results of paired comparisons of the interaction scopes importance, a matrix A is constructed, each element of which is an expert assessment of the relative advantage of the interaction scope IS_i as compared to scope IS_j. The weighting coefficients W_i of each interaction scope IS_i will be the actual numbers of the matrix A (Balan, 2008, p. 326).

Having made the appropriate calculations, we have the following relative weighting factors for each sphere of interaction:

$$W_{IF} = 0.079; \ W_{OP} = 0.140;$$
$$W_{MT} = 0.281; \ W_{MS} = 0.499.$$

Stage 4.

The types of interaction in each scope, as well as their weighting factors are determined based on scientific literature, judgments of specialized expert groups, departmental documents and real business processes in the company. For the investigated enterprise, 48 types of interaction between the SBU $\left(C_j^k, \ k = 1, ..., L; \ j = 1, ..., N_L \right)$ were identified.

Expert determination of the cooperation types importance in all spheres was carried out based on the constructing matrices of pair comparisons of cooperation types and calculating indicators of their relative value with the compulsory calculation of the index of expert considerations consistency $\left(J = 0.0174 \ \leq 0,1 J^* = 0.1 \cdot 1.51 \right)$ (Fazli, 2012, pp. 88-94). As a result, we obtained weight coefficients w_j^k for each type of cooperation C_j^k in all interaction scopes $\left(IS_{IF}, \ IS_{OP}, \ IS_{MT}, \ IS_{MS} \right)$.
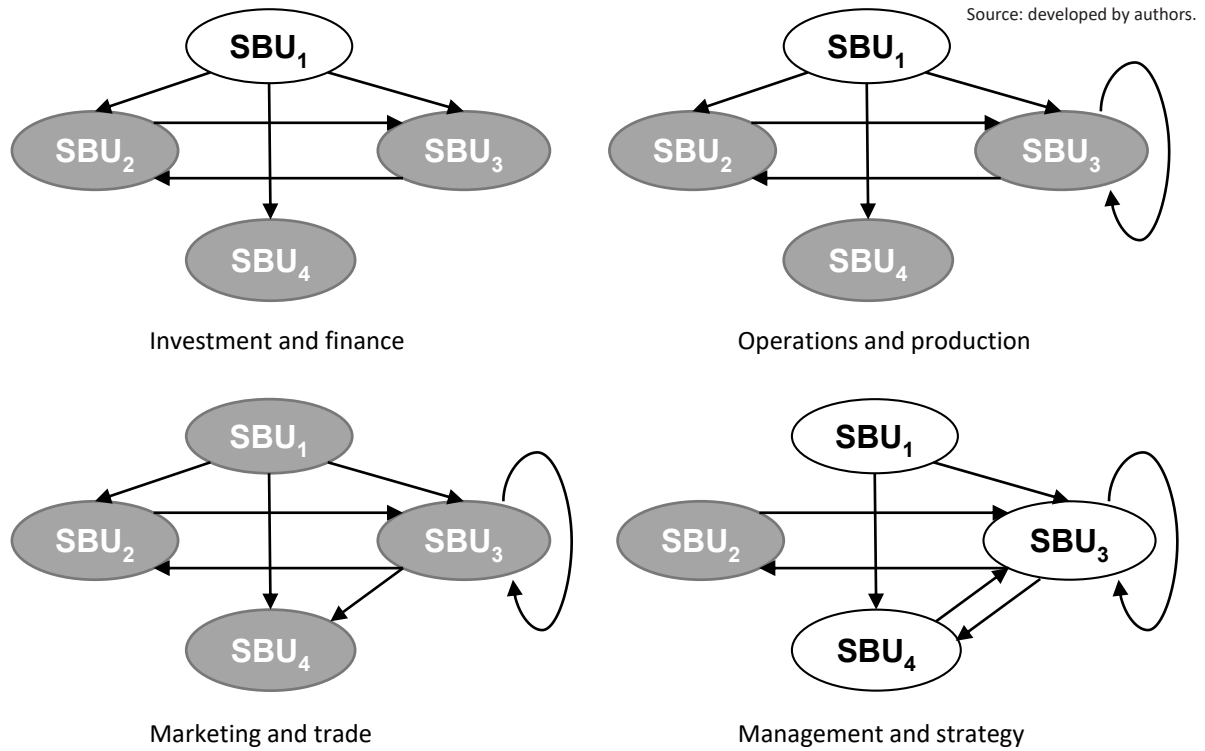
Figure 3. SBUs' interaction diagrams according to interaction scopes

Stage 5.

Identification, analysis and evaluation of the pair and integral interaction between the SBUs for each selected area. The interaction scope between SBUs was identified and analyzed based on the questionnaire survey of specialized expert groups' representatives. The questionnaire concerned the names of the enterprises (divisions) with which there is real cooperation and/or interaction, types (for each area), levels (missing, low, sufficient, and high), directions (giving, receiving) of this interaction.

To further evaluate the interaction, the personal data were processed, coordinated and aggregated into the relevant evaluation tables. On their basis, the source matrices of direct influences $E_{CZG_i}^{(k)}$ are constructed, in which each element is a score of the degree of influence on the rest SBUs as to each type of k-th interaction scope, which reflects the level of influence that each SBU "transfers" to others within each interaction area for each type of cooperation.

Weighing the score assessments of the SBU interdependence, we obtain the matrices G^{IF}, G^{OP},

G^{MT}, G^{MS} and calculate the average values of the interaction (mutual influence) for each SBU pair. Using the DEMATEL technique, we calculate the rank of each SBU$_i$, which reflects the degree of its influence and/or dependence on other SBU (Campbell & Sommers, 1998; James J. H. Liou, 2009; Porter, 1987).

As a result of calculation, one can see that in IF area SBU$_1$ is dependent; in OP – only SBU_4 impacts others; in MT area – SBU$_1$ depends on other SBU$_S$, in MS area SBU$_4$ influences the rest of SBU$_S$. Based on these data, the interaction of the SBUs in all interaction scopes is clearly represented (Figure 3).

Stage 6.

Evaluating the overall level of synergy $s_{ij}^{(p)}$ across the interaction scopes is based on a score assessing the cooperation synergy SBU$_i \leftrightarrow$ SBU$_j$ according to each type of cooperation across all interaction scopes. Using the method of simple additive weighing of score of the synergy level with the pair interaction of SBUs, we obtain estimates of the overall synergy from the SBU interaction.
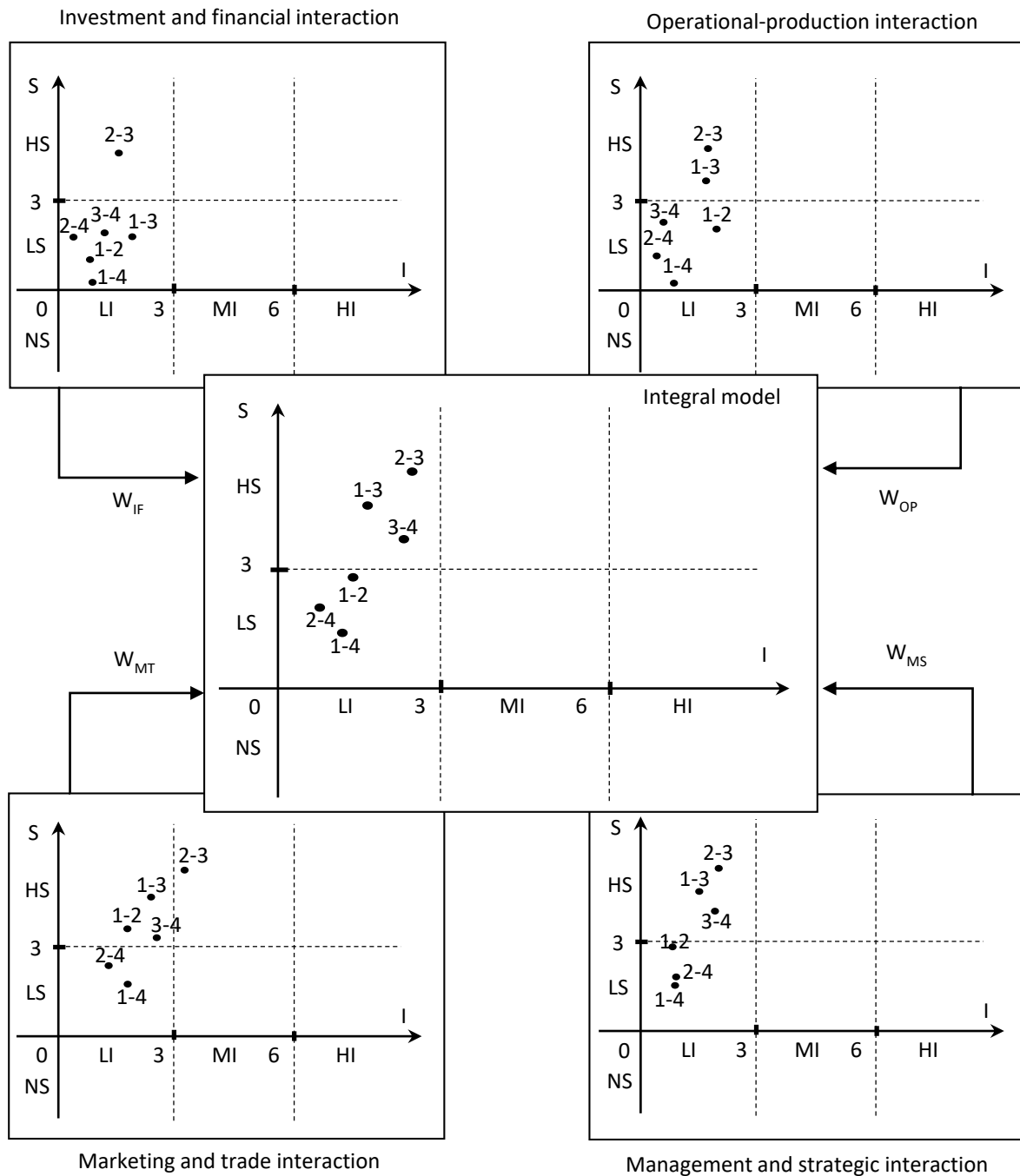
Figure 4. Integral matrix "interaction-synergism" for Ahromat Group

Stage 7.

Construction of the local and integral matrix "interaction-synergism". Partial (local) matrices "Interaction-Synergism" represent the ratio of the degree of the total pair interaction between the SBUs and the resulting total synergy as to each interaction scope. The axis I (interaction) of "inter-action-synergism" matrix reflects the average esti-

mates of the interaction between the pairs. The axis S (synergy) is the level of the overall synergistic effect $S_{ij}^{(k)}$ when interacting with these pairs.

Each axis of the matrix is represented by the corresponding scale: the axis I (LI – low SBU interaction, MI – mediate interaction, and HI – high interaction), axis S (NS – negative synergy, LS – low synergy, and HS – high synergy).

Thus, placing the pairs $SBU_i \leftrightarrow SBU_j$ in the field of the matrix for each interaction scope $IS^{(k)}$ is determined by the coordinates $\left(I_{ij}^{(k)}; S_{ij}^{(k)} \right)$. The position of the studied SBU pairs on the matrix demonstrates the evaluation obtained at the previous stages of the analysis and gives an opportunity to draw conclusions about possible directions of amplification and/or limitation of interaction between them.

Constructing the integral matrix of "interaction-synergism" (Figure 4) is based on the partial models synthesis for each interaction scope.

The "interaction-synergism" matrix contains local matrices and reflects the aggregate level of interaction between SBUs as well as the overall synergistic effect of their collaboration. The placement of $SBU_i \leftrightarrow SBU_j$. pairs on an integral model is determined by the coordinates of the points $\left(I_{ij}; S_{ij} \right)$. The level of cumulative interaction I_{ij} and the overall synergistic effect of the SBU S_{ij} are determined by simple additive weighing taking into account the importance of each interaction scope.

Stage 8. Results presentation and the justification of strategic recommendations as to optimizing the SBU interactions and increasing the synergy between them begins with the characterizing the fields of local and integrated matrices:

- "LI-NS" – low SBU interaction leads to a negative synergistic effect;

- "MI-NS" – incorrect types or forms of interaction between SBUs and low level of synergy effect;

- "HI-NS" – improper SBU cooperation or their excessive interaction lead to the loss of the necessary independence of enterprises;

- "LI-LS" – low degree of interaction with moderate synergy effect;

- "MI-LS" – moderate synergy with the average level of interaction;

- "HI-LS" – high degree of interaction between the SBUs indicates the possibility of increasing the synergy effect;

- "LI-HS" is characterized by the highest efficiency of the SBU interaction with a high level of synergistic effects;

- "MI-HS" – high level of synergy with the average interaction;

- "HI-HS" is characterized by simultaneous high interactions and high level of synergistic effects.

In the upper part of the matrix ("LI-HS", "MI-HS", and "HI-HS" fields), the maintenance of high synergy should be made based on the "mutual adequacy" principle: if the enhanced interaction does not lead to the increase or decrease in synergy, this means that the interaction has reached a "critical zone". Further enhancement of interaction by introducing new types or expanding the existing ones may result in the loss of synergistic effects or the emergence of negative synergies. At the same time, it is advisable to maintain cooperation at the existing level by changing the form and methods of implementing selected types of interaction.

The integral model *r*eflects the weighted indicators (estimates) of the SBU interaction and the synergistic effects obtained at the same time in all spheres.

We describe Agromat Group's SBU location in matrix fields.

The "interaction-synergism" matrix for the IF interaction scope indicates a low level of cooperation between the SBUs and moderate synergistic effects (quadrant "LI-LS"). Only SBU_2–SBU_3 exhibit the highest effectiveness of limited interaction with high synergy.

To enhance synergy, it is appropriate to rationalize the cooperation between SBUs by regulating prices and profits, mutual receivables management, sharing of risks and expenses, and obligations restructuring.

The "interaction-synergism" matrix for the OP interaction scope shows a high level of synergy from the interaction of SBU_1–SBU_3, SBU_2–SBU_3 (quadrant "LI-HS"), which is explained by the functional and production links between them. About 50% of the SBU products are sold through the Agromat Group own network and via direct dealers – SBU_3.

Warehousing and transport logistics – SBU_2 ensures complete, comprehensive customer service (storage of purchased goods in the warehouses of the group in different regions of the country, delivery of purchased products, transport services) when SBU_3 operates – distribution, sales and service.

Coordination of business processes, free access to joint information, staff transfer, accounting, financial and control audit support, legal advisory support for the group members activity, as well as training for staff provide medium and high levels of synergy effects for the SBU_3–SBU_4, SBU_1–SBU_3, SBU_2–SBU_3.

Limited cooperation between SBU_1–SBU_4 and SBU_2–SBU_4 (quadrant "LI-LS") is due to their conglomerate nature. They are expedient to expand cooperation based on the "complementary effect": the expansion of the proposed services range and/ or introducing new ones for regular clients, which will be carried out by representatives of the partner SBUs (hotel services, lease of trading, warehouse and other premises, advertising services and analytical-research activity, etc.).

The "interaction-synergism" matrix for the MT interaction scope is characterized by the widest SBU dispersion in the areas. "LI-LS" field received SBU_1–SBU_4, SBU_2–SBU_4, which have no production or marketing interaction.

The "LI-HS" quadrant consists of SBU_1–SBU_2, SBU_1–SBU_3, SBU_3–SBU_4, which are connected with diversified elements of the integrated logistics system: warehouses, transport, trade network, information base, brand and group image, advertising and informational support, price policy, etc. "MI-HS" contains only $SBU_2 - SBU_3$, which objectively reflects the bilateral communication of these SBUs, especially in marketing-trade area.

The "interaction-synergism" matrix for the MS interaction scope fixes inadequate interaction with moderate (SBU_1–SBU_4; SBU_2–SBU_4) and high (SBU_1–SBU_3; SBU_2–SBU_3; SBU_3–SBU_4) synergy. Insufficient interaction can be expanded by eliminating duplication of duties performed locally and synchronizing key business processes of the group members.

The integral matrix "interaction-synergism" is based on local matrices, therefore, it is logical to place the SBU on its two fields: "LI–LS" and "LI–HS". The result of the limited and inappropriate cooperation between the SBUs in all areas was their low integral interaction at the group level in general, where all investigated pairs of SBUs fell into the LI area.

In this case, SBU_1–SBU_2, SBU_1–SBU_4, SBU_2–SBU_4 are characterized by moderate integral synergistic effects due to their conglomerate nature.

The overall interaction between SBU_1–SBU_3, SBU_2–SBU_3, and SBU_3–SBU_4 resulted in a high level of integral synergy, the highest among which is the "complementary effect" of SBU_2–SBU_3 (as in local matrices). The specific feature of SBUs interaction in the Ahomat Group is their partial freedom and commitment to the parallel work "outside", while their functional activities are not limited only to internal organizational links and contacts, they can function separately from other enterprises of the group.

Strategic recommendations to improve interaction between the SBUs of Ahromat Group and to strengthen the synergy between them. The development of strategic recommendations on the interaction between individual SBUs, their groups and the general corporate strategy of group-level interaction involves taking into account existing types of interaction, as well as establishing and developing new, potentially important, long-term prospects.

In the local matrices the SBUs placing indicates its main role in ensuring synergy at the group level. This status is explained by the fact that the marketing system is unique for all group members: a common trading network, logistics infrastructure, price policy, advertising support, promotion and distribution, PR, image, etc. In addition, through its own trading and dealer network, about 80% of all products and services provided by the Ahromat Group are sold.

Joint use of various elements of the logistics system, in particular transport and warehouse, by all Group members made it possible for SBU_2 to occupy a prominent position in terms of synergy. The expanded warehouse network and great fleet have provided an opportunity to get a high level

of synergy across three interaction scopes: operational, production, marketing, trade, and strategic management.

The next ranking in importance is the SBU_1, which includes the production of certain types of goods and ensures the full supply of all types of products sold by the participant enterprises, which stipulates its high synergy.

Consequently, one can say that these SBUs are potentially important for all other SBUs of the group and are the sources of synergistic effects in cooperation.

In all partial matrices, the interaction of SBU_2–SBU_3 was the closest and showed the highest levels of synergy due to their functional interdependence and bilateral operational interconnection. Thus, one can assert that the given *SBU*s are the most dynamic in the group, they play a significant role in the general organizational interaction at the group level and require further development.

Interaction of SBUs which are conglomerate (SBU_1–SBU_4, SBU_2–SBU_4), result in insignificant synergistic effects, which is explained by a small circle of possible directions for their cooperation. The highest synergy indicators are in SBUs with

related horizontal and vertical integration, supplemented by marketing diversification (SBU_1–SBU_3, SBU_2–SBU_3, SBU_3–SBU_4).

An important feature of the matrices submitted is the lack of SBUs that fell into the middle and high interactions area, which indicates the availability of reserves for expanding their cooperation based on the "mutual adequacy" principle. A fundamental positive characteristic for the Ahromat Group is total absence of SBUs that have fallen into a negative synergistic effect asea. This indicates a moderate and sufficient level of cooperation, which has no negative consequences and does not create excessive interdependence of the participants.

The moderate and high levels of synergistic effects from SBU interaction suggest that the development of a general corporate strategy for group development and improvement of the SBU interaction require balanced approach to the introduction of new interaction types.

The low SBU interaction is determined by some freedom and independence in the activities of the group members; in order not to cause their excessive interdependence and thus to avoid negative synergies, the focus should be on rationalizing and revising directions and/or forms of interaction available.

CONCLUSION

The specifics of implementing the management model of SBUs interaction of diversified companies is due to the peculiarities of their internal structures, cooperation between elements and business units and operating conditions. The author's approach to structuring the synergistic effect was presented in this research; the specific features and features of synergistic interaction are highlighted and methodical tools for evaluating the activities of diversified companies as complex integrated open type structures taking into account current concepts of marketing management are provided. The diagnostics of the effect of the synergic interaction level between the SBUs as to the competitiveness and stability of the group allowed to identify pros and cons in Ahromat Group. Thus, to strengthen synergy the following is needed: rationalization of cooperation between SBUs by regulating prices and profits, mutual receivables management, risk and cost sharing and liabilities restructuring; expansion of cooperation based on the "complementary effect"; eliminating duplication of duties performed locally and synchronizing key business processes of group members; expansion of the investment and financial area of SBU interaction; intensification of indirect cooperation through the use of existing joint infrastructure, information and consulting and staffing.

The developed simulation model for managing the SBUs of diversified companies based on synergy allowed to take into account the whole set of input and output flows between them and to present a scale for assessing the level of synergistic effects received, as well as to propose an algorithm for its application in the real business practice of the Ukrainian ceramic tile market.

REFERENCES

1. Ackoff, R. (1970). *Concept of Corporate Planning* (172 p.). John Wiley & Sons Inc.

2. Ansoff, I. (1965). *Corporate Strategy* (241 p.). New York: McGraw-Hill.

3. Aronov, A. M. (2001). Стратегический анализ диверсифицированных предприятий *[Strategicheskiy analiz diversifitsyrovannykh predpriyatiy]* (27 p.). Saint-Petersburg: Izd-vo SPbGUEF.

4. Balan, V. H. (2008). Прийняття управлінських рішень. Методи, моделі, терміни, поняття, категорії. Тестові завдання. Ділові ігри *[Pryiniattia upravlinskykh rishen. Metody, modeli, terminy, poniattia, katehorii. Testovi zavdannia. Dilovi igry]* (465 p.). Kyiv: Nichlava.

5. Campbell, A., Sommers, K. L. (1998). *Strategic Synergy* (340 p.). London: International Thomson Business Press.

6. Dobronravova, I. S. (1990). Синергетика: становление нелинейного мышления *[Sinergetika: stanovlenie nelineinogo myshleniya]* (147 p.). Kyev: Lybid.

7. Hoshovska, O., Lymanskyi, A., & Poplavska, G. (2011). Синергізм у стратегічному управлінні *[Synerhizm u stratehichnomu upravlinni]* (283 p.). Lviv: Manuskrypt.

8. James, J. H. Liou (2009). Developing a hybrid multi-criteria model for selection of outsourcing providers. *Proceedings of the International Symposium on the Analytic Hierarchy Process.* https://doi.org/10.1016/j.eswa.2009.11.048

9. Karloff, B. (1989). *Business Strategy. A Guide to Concepts and Models* (166 p.). London: Palgrave Macmillan.

10. Kizim, M. O., Ponomarenko, V. S., Horbatov, V. M., & Yastremska, O. M. (2010). Інтеґровані структури бізнесу: проблеми теорії та практики оцінювання конкурентоспроможності *[Intehrovani struktury biznesu: problemy teorii ta praktyky otsinuvannia konkurentospromozhnosti]* (368 p.). Kharkiv: INZHEK.

11. Lambin, J. J. (2000–2007). *Market-Driven Management: Strategic and Operational Marketing* (624 p.). London: Palgrave Macmillan.

12. Maghsud Amiria (2011). Developing a DEMATEL method to prioritize distribution centers in supply chain. *Management Science Letters, 1,* 279-288. https://doi.org/10.5267/j.msl.2010.04.001

13. Mahajan, V., Wind, Y. (1988). Business Synergy Does Not Always Pay off. *Long Range Planning, 21*(1), 59-65.

14. Milner, B. Z., Evenko, L. I., & Rapoport, V. S. (1983). Системный подход к организации управления *[Sistemnyy podkhod k organizatsii upravleniya]* (224 p.). Moscow: Ekonomika.

15. Porter, M. (1987). From Competitive Advantage to Corporate Strategy. *Harvard Business Review.* Retrieved from https://hbr.org/1987/05/from-competitive-advantage-to-corporate-strategy

16. Pushkar, A. I., Zhukov, Yu. E., & Pylypenko, A. A. (2006). Стратегические группы предприятий: концепция, методология, управление *[Strategicheskie gruppy predpriyatiy: kontseptsiya, metodologiya, upravlenie]* (440 p.). Kharkov: Krossroud.

17. Pylypenko, A. A. (2008). Стратегічна інтеграція підприємств: механізм управління та моделювання розвитку *[Stratehichna intehratsiia pidpryiemstv: mekhanizm upravlinnia ta modeliuvannia rozvytku]* (408 p.). Kharkiv: INZHEK.

18. Saaty, T. L., Katz, J. M. (1990). How to make a decision: The Analytic Hierarchy Process. *European Journal of Operational Research, 48,* 9-26.

19. Safar Fazli (2012). Developing a hybrid multi-criteria model for investment in stock exchange. *Management Science Letters, 2,* 457-468. https://doi.org/10.5267/j.msl.2012.01.011

20. Smerichevskyi, S. F. (2008). Зв'язано-диверсифіковані системи підприємств: генезис, моделювання та стратегічний аналіз *[Zviazano-dyversyfikovani systemy pidpryiemstv: henezys, modeliuvannia ta stratehichnyi analiz]* (375 p.). Donetsk: Don DUU.

21. Wissema, H. (2002). Driving Through Red Lights – How Warning Signals are Missed of Ignored. *Long Range Planning, 35*(5), 521-539.

22. Zhou, Y. M. (2011). Synergy, Coordination Costs, And Diversification Choices. *Strategic Management Journal, 32,* 624-639.

23. Öztürk, I., Anil, I. (2017). The Interaction of Firm Performance with International Geographic Diversification and Internal Factors: A Research On Borsa Istanbul Companies. *Journal of Strategic Research in Social Science, 3*(1), 31-42.

24. Международный научно-производственный журнал «Керамика: наука и жизнь» *[Mezhdunarodnyy nauchno-proizvodstvennyy zhurnal "Keramika: nauka i zhyzn"]* (2016). Retrieved from https://ceramic-journal.org.ua/index.php/csl

25. Промислово-технічна компанія у вигляді ТОВ «Агромат» *[Promyslovo-tekhnichna kompaniia u vygliadi TOV "Ahromat"]* (2017). Retrieved from https://www.agromat.ua/