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**INTEGRATED BUSINESS STRUCTURES'
OPTIMIZATION PRINCIPLES****Z. IVANOVA¹**¹National University business "Kyiv-Mohyla Academy"**Keywords:**

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ABSTRACT

In the article the essence and place in the system of controlling the development of tourism enterprises and proved its place and role in the travel business.

Formulation of the problem. Tendency of modern economic development, as well as necessity in constant company's upgrades with respect to changing environment and the need of the company to have a competitive advantage on both national and international markets, requires improvement in company's structure formation principles. An organization of modern integrated business structures (IBS) is designed to provide adequate control, support creativity and company's optimality given the accelerating circulation of information flow.

Analysis of recent research study of problems of conditions and ways of controlling devoted to the works of foreign and domestic scientists, including J. Weber, A. Dayl, H. Kupper, E. Mayera, R. Manna, T. Reyhmana, D.Hana, P.Horvata A. Schmidt, D. Schneider, H.-Y. Folmuta, N. Danylochkinoi, V. Ivashkevicha A. Karmynskoho, S. Falko, M. Pushkarya, S. Petrenko.

Unsolved parts of the problem. At present stage in the leading economies of the world and in the world's economy in general integrated business structures play the main role (not a single company as a part of an integrated business structure). "The era of integrated structures" is marked by integrative tendencies of the global and national economies, globalization and information improvement in society based on the formation of the knowledge economy. Tight integration methods (consolidation and acquisition) along with soft forms of integration based on the principles of partnership require the establishment of an appropriate mechanism to regulate their activity.

Analysis of recent studies. The organizational structure of a business coalition (BC) is a form of distribution and business cooperation, in which activities are aimed at solving problems and achieving goals.

The organizational structure of integrated business structures varies and depends on several factors:

- the territorial proximity of companies that make up its membership;
- the degree of productive communication between them;
- common product range and others.

One should distinguish general organizational structure of integrated business structure with financial, scientific and research institutions from industrial organization structure that consists of multiple small companies which work together as a single unit with respect to a specific production scheme.

The main results of research. One should understand organization of an integrated business structure as a set of firmly interrelated elements that support the functioning and development of the business unit as a whole. Both employees and company's departments, which consist of a certain number of employees, can act as a separate element of organizational structure. The communication between the elements of an organizational structure can be supported by horizontal and vertical relations. The first are of the same level and maintain coordination processes, while the second maintain the function of commands. Due to the fact that integrated business structure is usually a complicated hierarchical system, there is a necessity in construction of another type of connections especially if there are some other levels of government within the business unit.

With this type of bonds, a three-tier structure is formed: top management (usually a direction board of an integrated business structure) and lower level (employees directly managing the work of the others). The middle layer is also formed (usually top managers of a separate company within a business unit) and may also have several levels.

Different linear and functional relationships can be noticed in the structure of integrated business unit. The first reflects the ratio of the adoption and implementation of management decisions, the movement of information between the so-called line managers who are fully responsible for the activities of integrated business structure as a whole or its individual members. Functional relationships connect with other functions of management. Accordingly, using a notion of competence of linear staff, headquarters staff and functional. Powers line managers are entitled to make decisions in all questions and issues of their organizations and departments, as well as give orders, binding other members of integrated business structure (units). Authority staff personnel has a limited right to plan, recommend, advise or assist, but not to give orders to other members of the integrated business structure [1; 2].

For the application of optimization theory to solve specific problems, including optimization of the organizational structure of integrated business structure, one must perform a sequence of actions, called the statement of the optimization problem. It comprises the steps of:

- setting boundaries to optimize the system;
- the choice of a quantitative criterion, which allows to identify the best option (characteristic criterion);

- the definition of inner variables, which are expressed through characteristic criterion;
- building a model that describes the relationship of inner variables.

In modern management theory there are the following principles of organizational structure of large structural associations optimization [3, 4]: the subordination of the goals, objectives and basic requirements of the owner (parent company), the common goal, the optimal division of labor between managers and specialists within individual business units and between companies belonging to the integrated business structure, the presence of authority and responsibility of the individual companies for a particular area of operation due to vertical and horizontal types of relationships, matching functions and duties, the authority and responsibility, the adequacy of the socio-cultural environment that characterizes the degree of perception of organizational innovation, technological and other kinds of integrated business structure, the presence of control points for input and source of financial flows, characterized by the degree of fragmentation of the business definition of types of financial relationships between the business units.

In our case the system is an integrated business structure. Limitations of the system set limits, separating it from the outside world. It is assumed that the relationship with the outside world is fixed. Initial choice of the system limitations may be too strict. To get an adequate solution one should include into the system additional subsystems, but this leads to an increase in the dimension of the problem. One should represent system in the form of isolated subsystems, any of which can be considered independently.

Criteria can be economic or organizational (minimum value, maximum sales volume, maximum profit) depending on the particular task. Regardless of which criterion adopted by the characteristic, it must take the maximum (or minimum) value for the best option. If there is more than one criteria, then the problem becomes multi objective. There are many methods of solving multi criteria problems, but can this may lead to multi objective tasks. One of the criteria should be chosen as primary and others should be marked as secondary. The primary criterion is used as the characteristic, and the secondary form constraints optimization problem.

Selection of independent variables is based on the following recommendations: to divide the variables that fluctuate over a wide range and variables that are fixed or vary slightly. The first - independent, second - parameters of problem optimization. Parameters optimization problem is divided into fixed and those that experience fluctuations influenced by managerial actions. You must select only those variables that have the greatest impact on the characteristic criterion.

Model system describes the relationship between variables and reflects the impact of these variables on the characteristic criterion. The model includes the basic equations of material and economic balances; equations describing managerial processes in the system; inequalities that define the region of permissible values of variables. Thus, the problem in a form suitable for decision optimization method combines the characteristic criterion, the number of independent variables and a model that reflects the relationship of these variables.

Efficiency of formation of the organizational structure of integrated business structure, which ultimately turns into a successful (profitable) operation of all components of the system can be achieved, provided that the following requirements are observed in its formation:

- clearly articulating goals of integrated business structure;
- maximum simplicity of IBS structure. The simpler and clearer integrated business structure is built, the easier it is to manage the union;
- clear communication and appropriate feedback;
- establishment of unity of command in decision making as a prerequisite for unity of action, coordination, strength, combining efforts;
- limited number of employees, defined the norms of governance (control range, which depends on the type of each member of the IBS, complexity);
- limited number of levels of management: the more levels the IBS has, the longer is information upward and downward disposal, the more possibilities of distortion are observed in the transmission;
- a clear distinction and coordination functions of line management and functional services;
- precise coordination of individual members of the association by senior management of integrated business structure.

Among the most common mistakes in shaping organizational structures of IBS, one can define the following [6]:

- The lack of clear management structure of IBS, formalized hierarchy;
- Plenty of horizontal connections. Usually this is a result of direction board desire to control as many of the processes going on inside the IBS as they can;
- Too deep vertical connections (many levels of subordination without installing horizontal communication links between the individual companies that make up the IBS). The consequence is unreasonable bureaucracy of IBS when all decisions are made at the top level;
- Lack of clear job commitment, formalization of functional and information links in the middle of the integrated structure [6, 7].

Support of non-optimized rotating structures within an integrated business structure results in large financial loss, duplication of functions, irresponsibility of company's employees, decreased initiative and other negative effects [5, 6].

Important role in the development of the organizational structure of IBS is played by its life cycle and size (table 1).

Table 1

Determining the complexity of IBS organizational structure depending on its size and stage of the life cycle

| Company type | Life Cycle Stages | | |
|--------------|----------------------------|-----------------------------|-----------------------------|
| | Origin | Functioning | Liquidation |
| Small | Low level of complexity | Medium level of complexity | Medium level of complexity |
| Medium | Low level of complexity | Medium level of complexity | Medium level of complexity |
| Large | Medium level of complexity | Maximum level of complexity | Maximum level of complexity |

Data in Table 1 indicates the trend of IBS to become more complicated in organizational structure associated with the increase in its size and move to the next stage of the life cycle. Table 1 also shows a tendency to simplicity of the organizational structure of small businesses and immutability organizational structure of medium and large companies in liquidation. This means complications and inability of systematic monitoring of individual business units with increasing their size and inability to make timely decisions on business reorganization.

One indicator of optimal organizational structure is the duration of documentation flow in the system. Factors that influence the duration of this process are the number of management levels, and the average number of managerial tasks to be solved at the same level, the complexity of administrative tasks, the level of automation of production (table 2).

Table 2

Scale of determination of the level of management automation in organizational structure

| | | | | |
|-----------------------------|--|---|---|--|
| The level of IBS automation | All levels of management and all work places are automated | All level of management and most of work places are automated | Most of management levels and all work places are automated | Half of management and half of work places are automated |
| Score | 4 | 2 | 1 | 0 |

Developed by author

It should be noted that only a comprehensive automation control systems, especially those of large enterprise groups as integrated business structure, is effective. Current economic trends that lead to the emergence of new organizational forms of management require radically new control technologies. In this regard, based on theoretical generalization scientific sources the author formulated the principles of optimization of organizational structure of IBS. Author defines the rate of synergetic effect from the interaction of individual business objects to be the optimal criterion.

Distribution and origin of synergetic effect can be represented according to the different elements and levels: from the interaction of institutional rules and regulations, the coordination interaction parameters, from the association potentials integrated entities as a result of resource synergy. The action of each of these types of synergies can have either one-time effect or spread out over a long period of time. Moreover, this synergy can also give positive, slightly negative or negative effects. This scheme takes into account the architectural approach to the formation of IBS and is based on the dual display of interaction between two members of the integrated structure (as may be extended during the development of customer relationships). That combination of knowledge about available resources (competence) of individual members within an integrated structure provides an opportunity to optimize their interaction on the criteria of maximizing the potential synergies and coordinated use of resources. Architectural division of members in integrated structure help to optimize the balance between aspirations and integrated part and to choose the options of consolidated distribution of resources. As a tool in implementation of architectural approach for optimizing organizational structure one can apply the models of Ya. Honcharuk and balanced scorecard (BSC) [1]. This key performance indicators correlate with parameters of transformational changes that occur during development, as well as with integration constraints and architectural level expectations that arise from the presence of actors in IBS and regulatory functions they produce.

According to O. Korol'chuk, with relatively high ability of small groups to accumulate collective goods in the absence of compulsion, the solution of optimization problem of organizational structure can be targeted either on the size of IBS after bifurcation transition, or on the insurance of compliance with the ruling of balance [2]. P. A. Layko, I. I. Dolzhenko believe that only with proper formal institutional structure of integrated structure one may solve the problem of increasing the usefulness of integrative collaboration [3].

However, the creation of an integrated space able to lead to an increase in inertia with respect to changes in the environment. Accordingly, technological breakthroughs can expand or destroy existing area of competence [4].

The interaction of the aforementioned trends can lead to so-called strategic tipping point (a manifestation of traps active inertia), features which were examined in detail by P. Oburay, M. Beyker [4]. In this case, to overcome the negative effects one should accept the offer of M. Porter, to consider the integrated network as a basis for dynamic resource allocation, in which resources or demand for them unpredictable ways change in the decision making process [5]. Thus the capacity of resources to individual members of the IBS updated concept of dynamic capabilities of individual members of structure. This can be seen as the ability to update the resource capacity to ensure that changes in environmental conditions: reconfiguration of existing skills and functional abilities of members of the integrated structure. Accordingly, the criterion becomes the optimization of resources and opportunities (potential) on the set of markets and products that can cover IBS. At the same resources and strategies of different actors involved in the interaction with the positive impact (the principle of guaranteed result) for each participant IBS [3].

Optimizing the integration of structure can lead to withdrawal of some members of IBS resources and resource allocation to other distribution system IBS. Criteria such as redistribution should be minimizing mismatch between desired and obtained configuration of organizational structure by changing the shape of IBS and knowledge about the union of IBS members.

According to some scholars (Y. P. Surmina, V. N. Volkov, S. I. Sokolenko) evaluation of the effectiveness of transition from one type of organizational structure to the more efficient is possible through reduced transaction costs (RTC), more competitive advantages of complementary assets (Ca) or display synergy (DS) [6]. Each structural unit of IBS strives to maximize its own profits ($P(A_i) \rightarrow \max$) increasing the level of consolidated profit ($CP \rightarrow \max$). Thus, we can evaluate the effectiveness or relevance to predict the transformation (optimization) organizational structure, including a system of constraints.

In view of the foregoing, the statement of the problem of optimization of the organizational structure of the integrated merger as follows:

$$CP(A_i) \rightarrow \max; CP \rightarrow \max \quad (1)$$

The combination of these types of distribution will expand the resource constraints integrated business structure governing the distribution of impacts in the coordinate system "architectural projection-level of detail." As another criterion optimization of organizational structure, some scientists propose to consider quality of members of the association from the point of view of the IBS architecture requirements and needs of the environment management [1].

Putting these parameters as constraints optimization problem allows for a number of changes in the composition of integrated wholeness, namely:

- View the basic membership of the association as the implementation of the integration development bifurcation point with the appropriate institutional review rules of relations within the integration space;
- Change complementary membership Association as a reflection of evolutionary dynamics on the deterministic phase can be seen as the accumulation potential for transformation and diffusion of knowledge by reviewing the parameters of the integrated network entities
- Diffusion between the core and complementary membership IBS that diversifies the configuration and parameters of the integration process.

Modeling these viewing options organizational structure allows IBS development potential correlate of structuring the relationship between integrated members of the association on the grounds modeling capabilities of IBS to reconfiguration and treat it as a narrow zone of compromise between autonomy separate business units and the broad guidelines of the integrated space. But some scientists (L. V. Shtern, A. Y. El'-Ansary, E. T. Kaflan) believe that the main criterion that should be considered when optimizing organizational structure is the quality control of integration process [7].

Thus, according to most scientists, the optimization of the organizational structure of IBS should be viewed as the use of principles, techniques and rules for reviewing and ensuring that business models, organizational structures, logistics processes and systems of interconnected members of the structure. Optimization is to enable an option upgrade competencies integrated integrity according to the needs of the environment and its realization - to optimize the parameters of the architecture of an integrated space through reconfiguration of IBS participants. The criterion to initiate reconfiguration procedure (according to the formulation of optimization problem is a compliance accumulated resources and competencies desired outcome (overall and individual income), subject to the ruling of balance.

V. M. Shumeiko has determined the mechanism of optimizing organizational structure of IBS provides a basis to spiral approach to mapping the dynamics of the integration process, highlighting two stages: bifurcation and necessitation [8]. According to this scholar, the optimization process can be separated for different levels: for individual member IBS it will lie in the choice of contractors (or strategic areas of business), which allows to maximize the return on your interactions with them (the presence of them) for the rest of the IBS - in determining the types and how they interact. At the level of the integrated network, this process will be to optimize the membership eligibility criteria for IBS consolidated goals and growth potential of IBS as a whole (its maximization).

Optimization of organizational structure limited to the creation of the correspondence between the target instructions participants IBS and system integration constraints. Optimization of the structure at the parent company can be reduced to the design of new attractors based on the possible implications of emergent intelligence, by involving members of IBS with strong positions of power.

O. Ye. Rodionova, O. H. Derev"ianko determine that the theoretical basis reconfigured approach to optimize the organizational structure is not simply the imposition of restrictions on the selection of those degrees of freedom which bring integrity integrated to obtain useful results, and determine the result on a chain vertical integration and disintegration of a new IBS with more effective interaction of components [9]. However P. A. Layko, I. I. Dolzhenko believes should also consider the relationship between the frequency and level of reconfigured dynamic variability (mobilization) input to IBS elements [3]. This situation may be disseminated only to a basic or complementary membership of the IBS and their elements. That base composition of members of IBS will create set nodes that define a specific formulation and optimization of the organizational structure of IBS (especially when heterogeneous actors).

Based on these provisions, organizational structure optimization IBS becomes a process of harmonization of business models for its individual members with the business model of integrated education, depending on the produced new routines and changes in accounting features powerful balance. In this case, the view of some scholars regards additional consideration in the limitations of those business units whose interests balances overbearing influence. However, the system of constraints to consider asymmetric distribution needed to create value-added resources between domestic economic agents. This asymmetry creates mobility structure, and hence the possibility of nodal actors sanctions to other participants IBS [4].

Limit degrees of freedom IBS members by imposing integration constraints, coupled with the introduction of dynamic stereotypes loop behavior can implement dynamic standards regulating the functioning of integrated actors and distribute them within the architectural integrity of the integrated representation [5]. This distribution reduces the optimization of the organizational structure of IBS to develop interaction protocols of individual system components.

H. O. Pasichnyk provides the basis for optimization of organizational structure put diffusion of knowledge and reconfiguration of IBS using system models multi agent interaction [10].

However, V. Shumeiko believes that this approach is reduced to develop principles and rules of matching - establishing mutually beneficial fit between their own interests and the parameters of the organizational structure of IBS [7], which allows members to transform the integrated structure of dynamic nature.

Thus, given the conceptual provisions reveal the content of the theoretical and methodological basis of optimization of the organizational structure of IBS providing representation of the structure of activities, processes, information, members of IBS, behavior, constraints and business operations. Optimization of the organizational structure of IBS allows for co-organization (a term introduced V. M. Shumeiko) and many independent autonomous systems work by providing regular play shapes and properties of the whole and optimize the interaction processes. Targeting co-organization and combining knowledge integration within education can solve the problem of balancing centralization and decentralization of management integration process.

Each principles and optimization problems must meet the logistics approach to meet the needs of each member of the IBS and thus ensure in each subsequent period of growth adaptation and transformation potential composition of individual business units involved in the project change. One should emphasize the need for resource optimization study of the organizational structure of IBS as a whole and each of its allocated organizational components. Focusing on multi agent adopted approach to building functioning mechanism of IBS, it is appropriate to establish the composition of participants IBS resource fields that will determine the need for transformation and the possibilities for their implementation. This resource formed IBS compliance to the program changes the organizational structure. Thus all the requirements are defined in the formulation to optimize the organizational structure of IBS (including subordination and authoritative presence of asymmetry and opportunism in the relationship members IBS) for fully recycling program resourcing creating an integrated business structure.

Conclusion. The conceptual position described above reveal the content of the theoretical and methodological basis of optimization of the organizational structure of IBS, which give general information about, the structure, activities, processes, information, members of IBS, behavior, constraints and business its operations. Optimization of the organizational structure of IBS allows to organize many independent and autonomous systems through the provision of regular play shapes and properties and optimizing the entire interaction process. Targeting co-organization and combining knowledge integration within education can solve the problem of balancing centralization and decentralization of management integration process. The proceedings of this approach require the development of criteria options for structuring and definition of the work within the optimization of the organizational structure of IBS.

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