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Formalization of the Enterprise International Economic Activity Efficiency Management

Formalización de la administración por la eficiencia de la actividad económica internacional

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ABSTRACT

Nowadays, development of the enterprise, at international market, depends on its ability to adapt the development of technologies. It was found that reengineering changes the structure of an enterprise so that it combines functions of several divisions in one. As a result, it was investigated that in 2015, volume of export production and sell price for export goods had the largest influence, while the lowest influence had the administrative costs. Authors proposed the concept of international economic activity efficiency management formalization that includes strategic and tactical component of the management process at different stages of the enterprise development environmental cycle.

Keywords: reengineering, business-process, strategic targets, strategic management, organizational culture.

RESUMEN

Hoy en día, el desarrollo de la empresa, en el mercado internacional, depende de su capacidad para adaptar el desarrollo de tecnologías. Se encontró que la reingeniería cambia la estructura de una empresa para que combine funciones de varias divisiones en una. Como resultado, se investigó que, en 2015, el volumen de la producción de exportación y el precio de venta de los bienes de exportación tuvieron la mayor influencia, mientras que la menor influencia tuvo los costos administrativos. Los autores propusieron el concepto de formalización de la gestión de la eficiencia de la actividad económica internacional que incluye el componente estratégico y táctico del proceso de gestión en diferentes etapas del ciclo ambiental de desarrollo empresarial.

Palabras Clave: Reingeniería; procesos de negocio; objetivos estratégicos; gestión estratégica; cultura organizacional.

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INTRODUCTION

Efficiency of the enterprise international economic activity is quite multilateral economic category that was thoroughly investigated by scientists over a considerable period of time. Ukrainian scientific school mainly considered the efficiency of international economic activity from the position of the productive forces system, basing on which the personnel of International Economic Affairs Department assigned the main role on the process of interaction and transformation of labour objects through means of labour, therefore basic indicators of the international economic activity efficiency in native economic school before the 1990s XX century was the productivity and capital intensity of labour, the capital intensity and capital productivity ratio of export-oriented products (Mochernyi, 2000). In nineties years of the twentieth century, the conceptual development of Western scientific thought began to be introduced into the activity of native enterprises, where the profit margin was considered as the main indicator of the international economic activity efficiency, or maximization of the net profit per one employee in the sphere of international economic activity (Mochernyi, 2000).

Further implementation of the given conceptual approach led to the separation of strategic and tactical levels of international economic activity efficiency management, which contributed to the combination of strategic vision and targets with specific indicators of enterprise activity. Determined historical peculiarities of the native development of performance management system of international economic activity significantly influenced on semantic and logical basis of the methodological support for the assessment of the efficiency of international economic activity, which requires the development of new concept of formalized management of the international economic activity efficiency, taking into account current trends in the development of this type of activity.

At the current stage of the development, company's success at the international market depends on its ability to adapt rapid development of technologies, innovations, and conditions for conducting international business. In general, native and foreign scientists concluded the course of recent years research on the success and effectiveness of an enterprise determined by how quickly and with help of what resources the enterprise achieves its strategic orientations (Niven, 2006; Smyrnytskyi, 2002; Sutiagin and Turlacheva, 2012). In fig. 1 presents the concept of formalized management of the international economic activity efficiency for enterprises with branching strategic and tactical component of this process. At the same time, the presented elements of this concept do not have an essential argument, they are a logical continuation of each other, and promote effective management of the efficiency of international economic activity of the enterprise at different stages of making managerial decisions.

METHODS OF EVALUATING THE INTERNATIONAL ECONOMIC ACTIVITY (IEA) EFFICIENCY

Evaluating the efficiency of IEA on the basis of the Key Performance Indicators

Key Performance Indicators (KPIs) are the basic approach of evaluating the IEA efficiency at the tactical level. Structural component of this direction of concept implementation has two further directional vectors: use of the key success factors in order to achieve planned results and to get the most effective correlation between the results of international economic activity and spent resources. The basis for KPI implementation is a variety of the enterprise internal indicators that are classified according to the relevant criteria for groups.

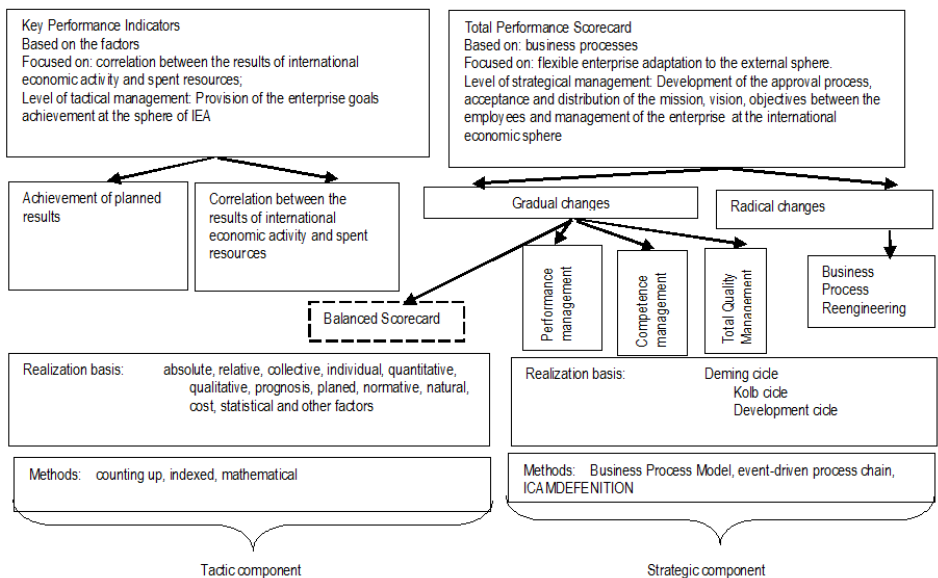
However, formalized management of the international economic activity effectiveness on the basis of analysis only quantitative and qualitative indicators is not complete. It does not allow us to make a reasonable management decision and effectively optimize internal activities of the enterprise to achieve long-term development benchmarks at the international market.

Peculiarities of Total Performance Scorecard

Therefore, the next approach to be included into the concept of formalized management of the international economic activity efficiency is Total Performance Scorecard, based on the business processes of the enterprise coordination basis, acceptance and distribution of the mission, vision, objectives between the employees and management of the enterprise at the international economic sphere. Strategic level of its implementation is aimed to optimize enterprise’s business processes, taking into account strategic vision, trends influence and external factors development regularities at the international economic sphere. For the current period of time, the implementation of this formalized management direction is appropriate to organize five main vectors of activity, depending on the intensity of changes that occurred at the enterprise.

One of such areas is efficiency management (Performance Management) – it is management of the international economic activity transforming strategy into plans and corresponding specific results of international economic activity.

Figure 1: Structural components of the concept of formalized management of the enterprise international economic activity efficiency



Efficiency management combines well-known methodologies of business improvement and technology (Kokin, 2011). It is management of individual employees and teams, aimed at the achievement of maximum efficiency of the enterprise’s international economic activity, which includes general understanding of the goals, approaches of work organization and employees training, designed to ensure its continued development for long time period. High priority task of the Performance Management is to provide an enterprise with advantage human capital at the international market. Efficiency parameters can be attributed to the main following groups: financial results of international economic activity, feedback (opinion of foreign clients, colleagues, leaders of the multinational collective), time (terms observation of work execution). It

means that the efficiency of international economic activity is measured not only by productivity and profit margins, but also by focusing on the development of human capital, taking into account the trends of the international labour market. Process of the efficiency management system development and implementation consists of the following stages: diagnosis; planning (definition of goals, resources, cost estimation and benefits); program preparation (plan of the defined goals achievement at the previous stage); testing; informing employees; teaching; maintenance; evaluation of the international economic activity system effectiveness (Kokiniz, 2011).

Competence management analysis

The next vector for formalized concept of international economic activity implementation is Competence Management, which is aimed to increase the efficiency of international economic activity based on the development of personnel competencies. In order to get more effective developed business processes, the enterprise combines competence into three main categories: professional competencies (necessary for the performance of official duties of the personnel involved into the sphere of international economic activity), corporate competence (personnel skills in the international business environment), and managerial competencies (aimed to solve strategic tasks of the enterprise international economic activity). Main stages of Competence management implementation are: implementation strategy definition; needs analysis; information collection and current state analysis; preparation of personnel training programs; training conducting; analysis of results (Competence Management...).

An important stage of formalized management of the efficiency of international economic activity in the field of competence is to analyze the needs in the presence of those or other competences for employees belonging to different categories of positions (senior managers and middle managers, specialists, interns-consultants). Different competences, such as communicative skills, IT skills, focusing on the needs of foreign clients, conflict management, transformational leadership, autonomy and accountability, can be of importance for each post (Competence Management...).

Also, implementation of gradual changes in the field of international economic activity must be carried out in accordance with the principles of general quality management Total Quality Management (TQM), namely: orientation at the foreign consumer; leadership development of the enterprise management; employees involvement, which enables the enterprise to benefit according its abilities; approach to the international quality system as a process; system approach to the management of IEA enterprises; continuous improvement; making decisions based on facts; mutual beneficial relations with the suppliers from different geographic regions.

Most of the TQM benefits are long-term, and its effect is felt only after its implementation. It represents higher productivity, increase the level of cross-cultural corporate culture, reduce costs and increase the trust of foreign customers. These benefits can lead to the promotion and enhancement of the company status at the international market, which again once emphasizes the strategic aspect of this management approach. Quality management system of the enterprise gives confidence to the top management of the enterprise and to the foreign consumers in accordance with the products of international quality standards.

However, over the time, appears a thought that TQM could not give a tangible result, and, moreover, achieve the leadership enterprise, because market conditions and customer needs are constantly changes and often quite radical. Considering these conditions, it is not possible to gradually change the course of enterprise development.

RESULTS AND DISCUSSION

Features of business process reengineering

Aforementioned thesis justifies the necessity to include the concept of international economic activity effectiveness formalized management vector of business process reengineering. Business Process Reengineering, (BPR) – rethinking, redesigning and reorganization of business processes. The main idea of reengineering is that the achievement of effective management of international economic activity and it is possible only in the event of a reorientation of the organization management processes from the base platform to the process on the basis of functional approach. Business processes of international economic activity should be under the supervision, control and continuously improved on the basis of an innovative approach, bold ideas and non-standard thinking (Progressive management...).

Reengineering of business processes is characterized as a rather radical approach to make changes. It provides the rejection of all existing structures and procedures and introduction of new implementation ways for international economic activity. The main objective of business process reengineering is a significant acceleration of the company's response to changes the requirements of foreign consumers (or the forecast of such changes) with multiple reductions in the costs of all types. The essence of reengineering business processes is to focus on the processes, large project ambitions, waivers of old rules, creative use of information technology.

Reengineering changes the structure of enterprises in such a way of maximization the transparency of the boundaries between different divisions, and the best way to combine functions of several units in one (or even one person).

In general, the stages of reengineering business processes of international economic activity include the following steps: project development and business process allocation of international economic activity (goals and objectives of the project are defined, the team is formed and the approach is determined); documentation of international economic activity business processes (graphic models construction of business processes, chronometric components of business processes operation); comparative analysis of business processes with business processes of foreign competitors (benchmarking); development of the future international economic activity image of the enterprise; problems analysis and redevelopment of business processes of international economic activity and technologies; introduction of international economic activity new business processes, technologies and evaluation of results (comparison of the operation results effectiveness of the business processes with pre-set criteria, taking into account the costs of the functional activities types) (Grandars – Encyclopedia of the Economist...).

Analysis of perspective indicators

An integrated combination of formalized management strategic and tactical levels by the efficiency of international economic activity is based on the Balanced Score Card. The Balanced Score card (BSC) is a mechanism for the personnel key factors consistently communicating, strategic goals of the enterprise, and monitoring its achievements through the performance indicators that are the measure of goals achievement, as well as characteristics of the business processes and the results of each individual worker effectiveness. Therefore, BSC is an instrument of not only strategic but also tactical control (Adamenko, 2012). Objectives and indicators of this system are formed depending on the competitive position and strategy of each particular enterprise and consider its activities from the standpoint of four perspectives: finance, customer relations, internal business processes, knowledge and training (Kaplan and Norton, 2005).

Financial perspective is needed to ensure time and accurate financial data, its processing and analysis in the field of international economic activity. For more accurate understanding of financial indicators, it is also necessary to take into account indicators such as risk assessment and comparative data costs and

outcomes (Kaplan and Norton, 2005). It includes the following indicators: profitability of export-import activities, coefficients of absolute liquidity and autonomy, rate of assets turnover, volume of export sales, etc.

Perspectives indicators of the relations with foreign customers can determine the customer orientation of the enterprise. Constant analysis of the external market needs can ensure loyalty of customers for a long time period. Evaluation of this perspective can be done using indicators such as: capacity of the external market, share of the external market, share of rebates and discounts, level of foreign customer's loyalty, etc.

Perspective of internal business processes reflects a state of the enterprise's main and auxiliary activities, its internal environment, efficiency and security that is necessary for continuous work (Boyko, 2007). This perspective is characterized by the following indicators: production cycle effectiveness, output rhythmicity coefficient, management apparatus saving factor, rationality coefficient of management documentation, etc.

Perspective knowledge and training evaluation, qualifications and personnel skills, as well as the state of corporate culture. Development and improvement of the personnel knowledge and skills is especially important considering the conditions of rapid technological changes (e-xecutive. Balanced Score card). To evaluate this perspective, we can use indicators such as costs of improving employee knowledge, number of employees management per unit, rate of employee use by qualification, etc. In the context of IEA, each perspective should include information about key success factors, strategic goals, efficiency indicators and its target values, as well as the activities that will improve its performance.

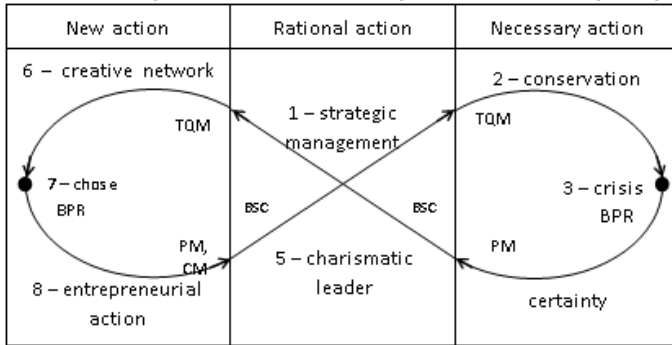
Description of the enterprise concept of international economic activity efficiency formalized management

Lately, scientists and practitioners concluded that both gradual and radical changes are important because from time to time almost every enterprise at the international market faces the need of radical rearrangement of the fundamentals or even the nature of business. In our opinion, the most rational combination of all the above-mentioned areas of implementation of the international economic activity formalized management effectiveness concept may be carried out on the basis of D. Gerst ecological cycle model (Fig. 2).

According to this model, entrepreneurial action, that is, the emergence of the enterprise development new vision at the foreign market and introduction of new foreign economic strategy leads to the conservation or the establishment of a certain procedure, which ultimately causes a crisis situation and general uncertainty, which in its turn stimulates appropriate creative reactions – and thus a new ecological cycle of enterprise development is launched (Bielov, 2012). The main objective of the international economic activity efficiency formalized management concept is to maximize the stages of rational actions that are rethinking the mission and vision of the enterprise, formulating its international strategy and goals.

Therefore, at the stage of "strategic management" or "charismatic leader", when the mission and goals of the enterprise are formed, it is expedient to use a balanced system of indicators; At the stage of conservation and creative network, quality control is required at all phases of IEA, which ensures the TQM concept; in case of crisis or the necessity to choose the decisive action needed, typical for business process reengineering; in conditions of uncertainty or entrepreneurial action it is time to invest all efforts into the development of human capital through the concept of PM and CM.

Figure 2: Implementation of the concept of enterprises international economic activity efficiency formalized management at the different stages of D. Gerst ecological cycle



Note: BSC – Balanced Score card, TQM -Total Quality Management, BPR – Business Process Reengineering, PM – Performance Management, CM – Competence Management

Thus, the creation of an innovative system of the enterprise international economic activity formalized management effectiveness involves the use of comprehensive concept that is characterized by various intensity of the transformation, applied at the appropriate stages of the ecological cycle of enterprise development at the international market, and has a strategic and tactical direction in the international economic activity of the enterprise. Practical implementation of the concept of international economic activity efficiency formalized management is recommended to start with a logical and semantic substantiation of international economic activity effectiveness with further definition of strategic benchmarks, indicators and its interoperability.

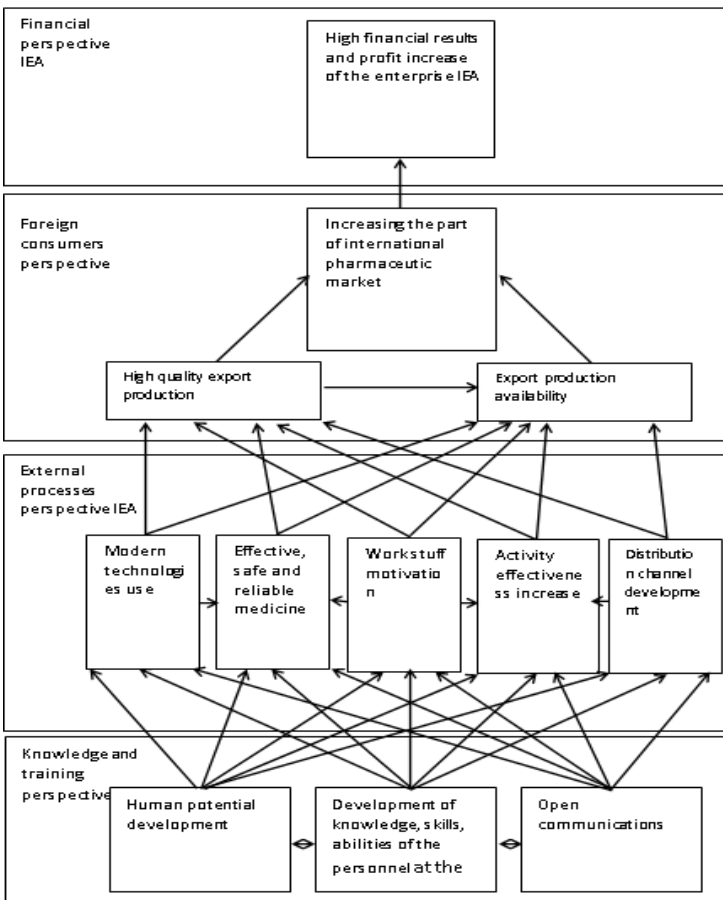
Strategic orientation of the enterprise is closely connected with the forms and types of international economic activities that are used for the position and development at the international market. In general, strategic development of the enterprise at the international market is mainly provided in four main directions: international trade activity, foreign exchange and international financial and credit operations, international investment cooperation, industrial and scientific and technical cooperation. However, the most widespread international economic strategy for many native enterprises is a direct export strategy based on the increasing production and formation of export-oriented products at international markets, using its own and other distribution networks.

Further detalization of the strategic aspects of international economic activity efficiency formalized management provides the identification of key factors in the success of an enterprise in four perspectives, based on the compilation of strategic map of its cause-and-effect relationships, using the methods of the BMP and the Event-Driven process chain. Consolidated results of the semantic-logical structure of indicators of business processes of the investigated enterprises (Scientific-technological complex "Institute of Single Crystals" of the National Academy of Sciences of Ukraine, "Institute of Scintillation Materials" of the National Academy of Sciences of Ukraine, State Enterprise " Chemical Reagents Plant ", NTC "IMK" of NASU, Research Institute NTC "IMK" NASU, joint venture "Amkris") as a result of international economic activity formalized management effectiveness strategic aspects practical detalization that is presented in Fig. 3

Description of Key Factors for the IEA Success

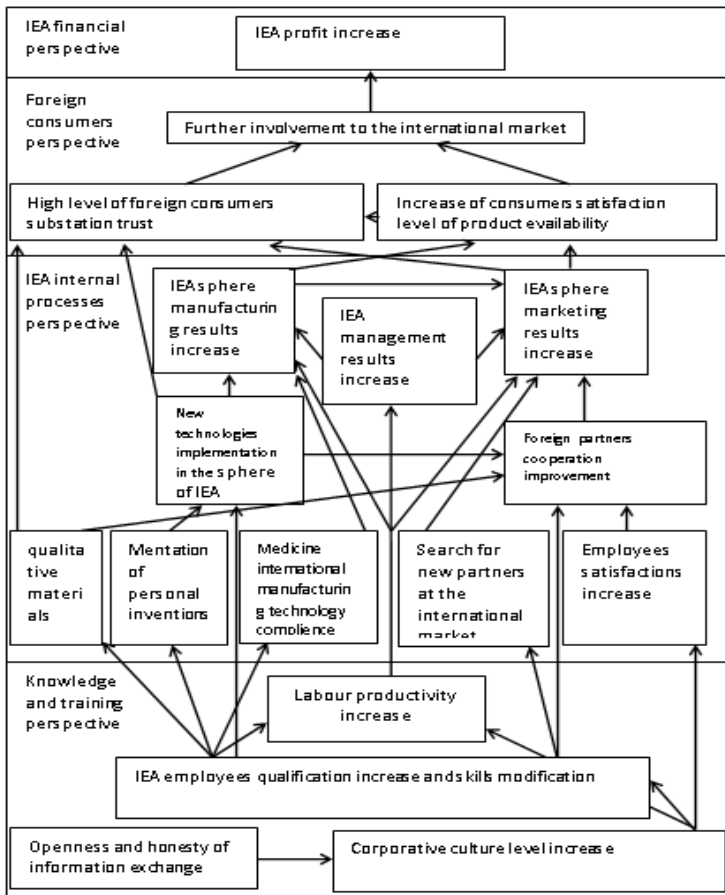
Key factors of the international economic activity success as a basic foreign economic strategy of the investigated enterprises that are based on the perspective of knowledge and training, as most of the aspects of the investigated enterprises related to the human factor, personnel skills involved into the field of foreign trade and relations with foreign partners. Formed semantic-logical structure of business processes in the sphere of international economic activity allows us to note that the activity of the enterprise depends on the personnel, and the results of business processes functioning – relations with foreign consumers and share of the external market, which in its turn influences financial results that the enterprise will receive from international economic activity. At the next stage of practical implementation, the concept of international economic activity efficiency formalized management development depends on each key factor of the concrete strategic goals success and establishment of causal relationships reflected on a semantic map (Fig. 4).

Figure 3: Interconnection of the investigated enterprises success key factors in the sphere of international economic activity



As the development of the Key success factors, the cause-and-effect chain begins with the perspective of knowledge and training of the employees of the investigated enterprises in the sphere of international economic activity. Fig. 4 shows that the openness and honesty in the exchange of information improves the level of organizational culture of the studied enterprises, which, in its turn, are supported by the professional development of workers in the sphere of international economic activity, leads to increase of labour productivity and improvement of business processes functioning. As a result, we obtain a high level of trust and satisfaction of foreign consumers, which will inevitably have a positive effect on the financial perspective of international economic activity.

Figure 4: Causal and effect relationship between strategic objectives of international economic activity of the studied enterprises



Analysis of IEA efficiency indicators

At the tactical level of formalization of IEA efficiency management are determined efficiency indicators which will help to estimate successfulness of examined enterprises in achieving the strategic targets in international economic sphere. In order to optimize the process of IEA efficiency management and determine enterprise's internal business-processes concentration area, it is necessary to choose the most important indicators that fully characterize the estimated aspect.

It was suggested to use the following indicators as an efficiency for international economic activity of examined enterprises, based on the mechanism of business processes implementation, organizational subordination and features of the business documentation formation:

net profit from IEA:

$$NP = NI - C_S - A - M - T + O = S_p \cdot O_{EI} - C_S - A - M - T + O, (1)$$

where NI – net income from IEA; C_S – cost of export goods sold; A – administrative cost; M – marketing cost at international markets; T – tax on profits; O – other incomes and costs; C_P – sell price for export goods; V_{EG} – volume of export goods;

part of new international market in overall export volume of enterprise:

$$P_{NM} = \frac{O\Pi_H}{NI} = \frac{SV_N}{S_P \cdot V_{EG}}, (2)$$

where SV_N – sum of sales volume at new international markets;
 level of foreign customer retention (New marketing. Loyalty...):

$$L_{CR} = \frac{Q_{RP}}{Q_T}, (3)$$

where Q_{RP} – foreign clients who made a certain quantity of repeat purchasing during a year; Q_T – total quantity of partners at international market;

needs satisfaction differential in export goods of enterprise (Nozdrieva, 1999):

$$D_{NS} = \frac{V_{EG}}{E_G} = \frac{V_{EG}}{Q_P \cdot O_Q}, (4)$$

where E_G – potential capacity of enterprise's export goods market; K_1 – potential quantity of export goods foreign customers; O_Q – potential quantity of export goods for one foreign client for a year;
 differential of value concordance:

$$K_{I3} = \frac{\Pi_C}{\Pi_P}, (5)$$

where P_C – price according to foreign customer;
 outgoing complaints level:

$$C_O = \frac{V_{RM}}{V_{ERM}}, (6)$$

where V_{RM} – complaint raw materials volume; V_{ERM} – overall volume of purchased raw materials for export goods production;
part of the export goods production with quality certificate:

$$P_C = \frac{V_C}{V_{EG}}, (7)$$

where V_C – volume of export goods with certificates;
output profitability (Smirnitsky, 2002):

$$P_O = \frac{NP}{C_P} = \frac{NI - C_S - A - M - T + O}{C_P} = \frac{S_p \cdot V_{EG} - C_S - A - M - T + O}{C_P}, (8)$$

where C_P – goods cost price;
differential of largest possible labour time reserve using (Grandars. Analysis of the use...):

$$DLR = \frac{H_A}{LPR} = \frac{H_A}{CR - D_W \cdot APC} = \frac{H_A}{H_{CD} \cdot APC - D_W \cdot APC}, (9)$$

where H_A – actual hours worked by employees at IEA sphere; LPR – largest possible labour time reserve; CR – calendar labour time reserve at IEA sphere; D_W – amount of weekends and holidays, duration of annual vocation; APC – average payroll count at IEA sphere; H_{CD} – amount of calendar days in this period;

profitability of advertizing and methods of sales promotion:

$$P_{AM} = \frac{NP}{C_{AM}} = \frac{NI - C_S - A - M - T + O}{C_{AM}} = \frac{S_p \cdot V_{EG} - C_S - A - M - T + O}{C_{AM}}, (10)$$

where C_{AM} – costs for advertizing and methods of sales promotion at international markets;
differential of management performance quality (Smirnitsky, 2002):

$$D_M = \frac{TE_M}{LPR} = \frac{TE_M}{CR - D_W \cdot APC} = \frac{TE_M}{H_{CD} \cdot APC - D_W \cdot APC}, (11)$$

where TE_M – sum of labour time expenditure because of delayed and low-rank management performance at IEA sphere;

differential of capital maintenance:

$$C_M = \frac{C_N}{C_E}, (12)$$

where C_N – value of new capital; C_E – value of capital at the year end;
innovative projects self-sufficiency level:

$$L_{IP} = \frac{N_{SP}}{N_T}, (13)$$

where N_{SP} – number of stuff supplied projects at IEA sphere; N_T – total number of projects at the enterprise;

differential of work productiveness growth rate and average wages ratio (Savitskaia, 2002):

$$D_{GR} = \frac{R_{WP}}{R_W}, \quad (14)$$

where R_{WP} – employees' work productiveness growth rate at the IEA sphere of the enterprise; R_W – employees' average wages growth rate at IEA sphere; incoming complaints level:

$$C_I = \frac{V_{GC}}{NI} = \frac{V_{GC}}{S_P \cdot V_{EG}}, \quad (15)$$

where V_{GC} – volume of export goods with complaints; part of new partners at international markets:

$$P_{NP} = \frac{N_{NP}}{Q_T}, \quad (16)$$

where N_{NP} – number of new partners at international markets; work productiveness at IEA sphere:

$$WP = \frac{V_{EG}}{APC}, \quad (17)$$

differential of employees' qualification at IEA sphere (Khmeleva and Khmeleva, 2009):

$$D_Q = \frac{N_Q}{APC}, \quad (18)$$

where N_{KB} – number of employees who completed extension courses, probation, participated at seminars, training by occupation during a year; differential of innovation activity:

$$D_{IA} = \frac{N_I}{APC}, \quad (19)$$

where N_I – number of new and improved working methods implementation, implementation of technologies, developments, labour-saving innovations, new selections; differential of morality:

$$D_{MO} = \frac{TE_C}{LPR} = \frac{TE_C}{CR - D_W \cdot APC} = \frac{TE_C}{H_{CD} \cdot APC - D_W \cdot APC}, \quad (20)$$

where TE_C – labour time expenditure because of conflicts; benefit from organizational culture (Tikhomirova, 2008):

$$B_{OC} = \frac{NP}{OC_V} = \frac{NI - C_S - A - M - T + O}{G + HC} = \frac{S_P \cdot V_{EG} - C_S - A - M - T + O}{CVE - NW + HC}, \quad (21)$$

where OC_V – organizational culture in value term; G – goodwill; HC – human capital value; CVE – commercial value of the enterprise; NW – net worth.

Thus, the formulation of the mission, vision and basic values of the examined enterprises in the IEA sphere allow to determine the key factors of success and strategic targets of international economic activity by tracking their causal relationships, as well as perform a selection of efficiency indicators, which creates the basis for transforming abstract strategic representations into real tactical management decisions of the enterprise at the international market.

The use of the principle of a integrated indicators limited number of the examined enterprises IEA efficiency on the one hand is a positive factor in the proposed concept, because it allows you to focus on important processes, but on the other hand, it can be a serious drawback, because when tracking a limited number of indicators one can miss significant deviations of the components that neutralize the each other influence. Therefore, in the practical testing of the concept of formalization of the IEA efficiency management, the author of this research carried out a verification of the proposed indicators values sensitivity to change the structural components and the environment, which made it possible to further distribute the basic indicators of the examined enterprises IEA to the main ones of strategic importance to the enterprise and should have continuous informational support and auxiliaries that may be subject to an interval research because they do not have a significant impact on the enterprise IEA efficiency, but their monitoring allows for in-depth study of the emerging problem. The dynamics of the change in the examined enterprises IEA efficiency indicators for 2014-2016 is presented in Table. 1

Table 1: Dynamics in the examined enterprises international economic activity efficiency indicators

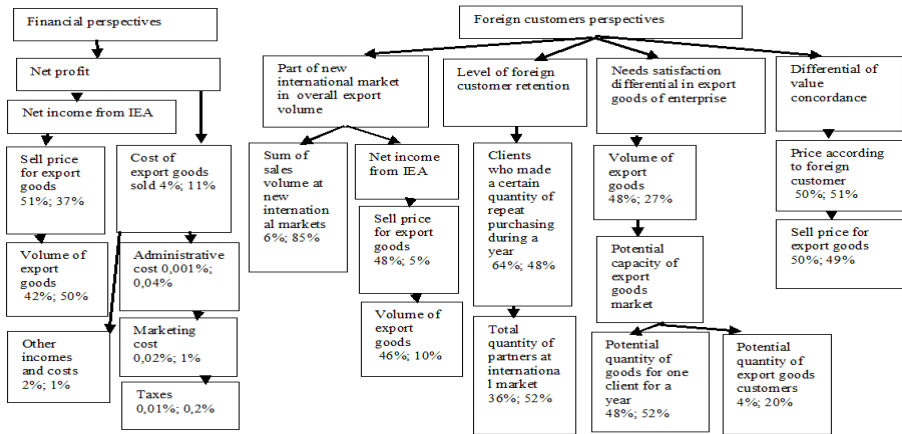
Efficiency indicator	2014	2015	2016	Absolute variation		Growth rate, %	
				2015	2016	2015	2016
Net profit from IEA, ths. hm.	488	842	1023	354	180	73	21
Part of new international market in overall export volume of enterprise	0,09	0,05	0,01	-0,04	-0,05	-44	-88
Level of foreign customer retention	0,91	0,78	0,80	-0,14	0,02	-15	3
Needs satisfaction differential in export goods of enterprise	0,85	0,90	0,71	0,05	-0,19	6	-21
Differential of value concordance	0,97	0,90	0,88	-0,08	-0,01	-8	-2
Outgoing complaints level	0,09	0,05	0,11	-0,04	0,06	-41	120
Part of the export goods production with quality certificate	0,75	0,85	0,91	0,11	0,06	14	7
Output profitability	0,19	0,29	0,26	0,10	-0,03	49	-9
Differential of largest possible labour time reserve using	0,05	0,04	0,05	-0,01	0,01	-27	26
Profitability of advertizing and methods of sales promotion	5,81	9,99	9,38	4,18	-0,61	72	-6
Efficiency indicator	2014	2015	2016	Absolute variation		Growth rate, %	
Differential of management performance quality at IEA sphere	0,004	0,002	0,002	-0,002	0,002	-51	11
Differential of capital maintenance	0,10	0,05	0,07	-0,05	0,02	-48	29

Innovative projects self-sufficiency level	0,14	0,33	0,40	0,19	0,07	133	20
Differential of work productiveness growth rate and average wages ratio	0,74	0,14	1,83	-0,60	1,69	-81	1206
Incoming complaints level	0,04	0,01	0,005	-0,03	-0,003	-78	-42
Part of new partners at international markets	0,30	0,28	0,20	-0,03	-0,08	-9	-28
Work productiveness at IEA sphere, kg/hum.	183	39	89	-143	50	-78	128
Differential of employees' qualification at IEA sphere	0,09	0,21	0,13	0,12	-0,07	128	-36
Differential of innovation activity, un./hum.	0,45	0,41	0,53	-0,04	0,12	-9	29
Differential of morality	0,0041	0,0037	0,0044	0,0003	0,001	-9	19
Benefit from organizational culture	0,06	0,11	0,02	0,05	-0,09	86	-78

Evaluation of values and dynamics in IEA efficiency indicators

As a result of the evaluation and analysis of the values and dynamics of the examined enterprises IEA efficiency indicators, certain trends and regularities of the basic indicators change were revealed. In 2015, compared with 2014, the biggest change in a positive way of innovation projects self-sufficiency level indicator. This was mainly due to the number of stuff supplied projects at IEA sphere, as a result of a significant restriction of exports in connection with the tension of political relations between Ukraine and the Russian Federation, which contributed to the need to find new international markets for the enterprises export goods. However, in 2016, compared with 2015, the growth of this indicator significantly decreased, and the structure of its components influence almost did not change. Also, in 2015 there were observed high growth rates in efficiency indicators such as: differential of employees' qualification at IEA sphere, benefit from organizational culture, net profit from IEA, profitability of advertizing and methods of sales promotion, output profitability. However, in 2016, most indicators tended to decline, and only net profit from IEA grew by 20% due to the discovery of new international market niches for production distribution and the formation of a new pricing policy for enterprises. The price of export goods and its volumes had the greatest influence on this indicator in 2014-2016 (Fig. 5). Their influence summary part on the efficiency indicator for the examined period varies from 80%. The significant increase in the value of the enterprises net worth, caused by the compensation-free transfer of enterprises non-current assets, that due to the organizational features of the examined enterprises within a single scientific and technological concern, influenced on reducing the benefit from organizational culture by 78% in 2016 after growth by 86% in 2015 (Fig. 8).

Figure 5: The share of the basic indicators influence on the change of efficiency indicators of financial and client perspectives of formalized of examined enterprises international economic activity efficiency management for 2014/15 and 2015/16



Instead, the largest decline in 2015 compared to 2014 has experienced such indicators as: differential of largest possible labour time reserve using, outgoing complaints level, part of new international market in overall export volume of enterprise, differential of capital maintenance, differential of management performance quality at IEA sphere, incoming complaints level, work productiveness at IEA sphere, differential of work productiveness growth rate and average wages ratio.

Figure 6: The share of the basic indicators influence on the change of efficiency indicators of internal processes perspectives of formalized of examined enterprises IEA efficiency management for 2014/15 and 2015/16

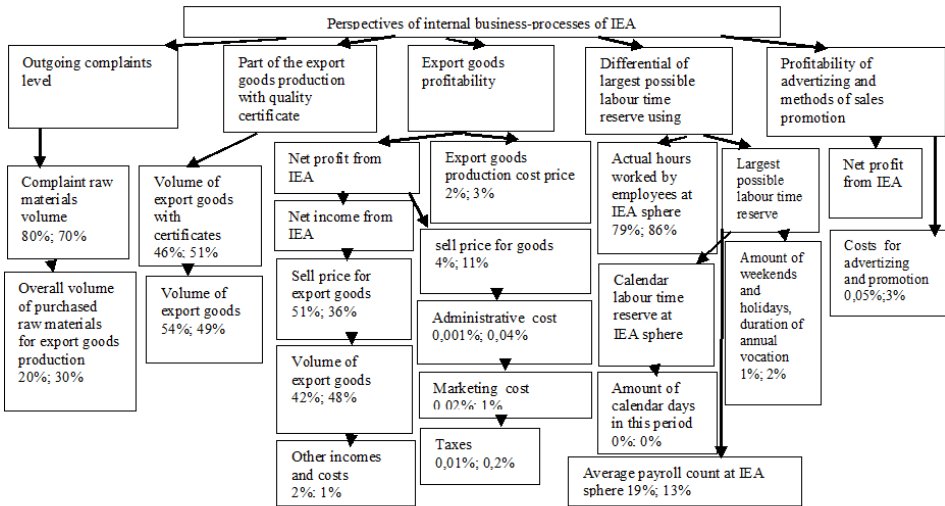
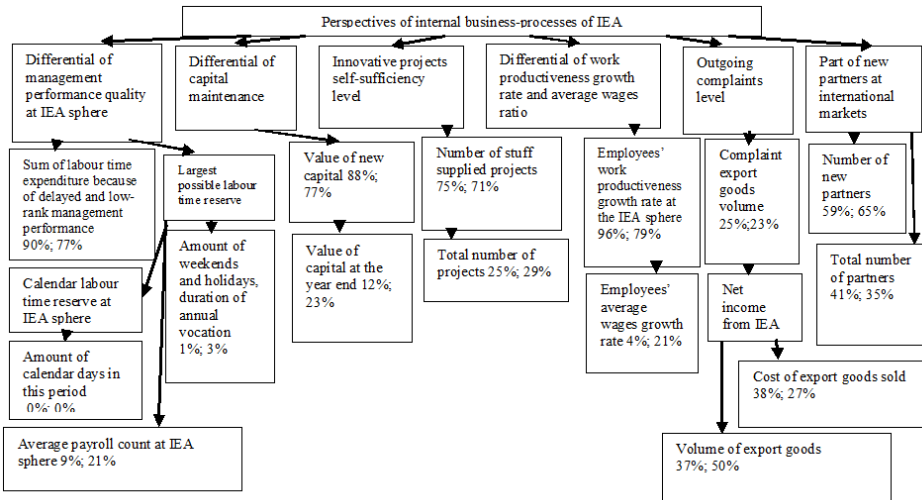


Figure 7: The share of the basic indicators influence on the change of efficiency indicators of internal processes perspectives of formalized of examined enterprises IEA efficiency management for 2014/15 and 2015/16

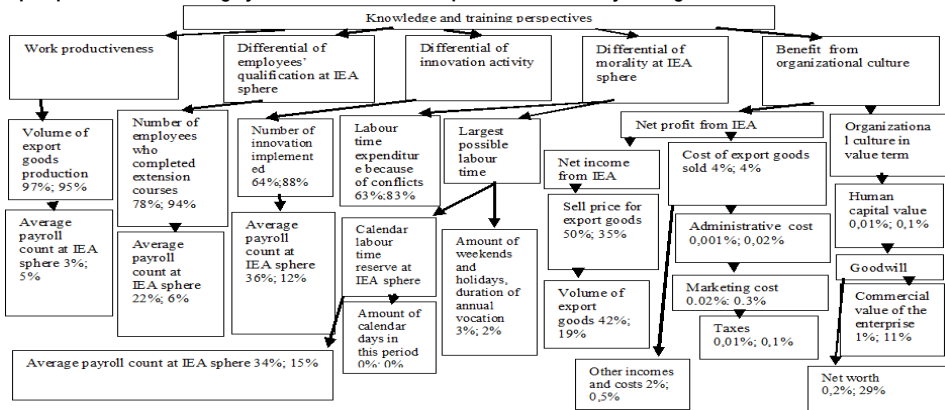


The most of these indicators decrease was temporary, it can be explained by the political tension and instability of the economic system functioning. For example, differential of largest possible labour time reserve using increased by 26% in 2016.

The largest impact on this indicator has such a basic indicator as actual hours worked by employees at IEA sphere (Fig. 6). Also, in 2016, there is a significant increase in the employees' work productiveness at IEA sphere and a decrease in outgoing complaints level, as well as slowing down of the negative growth rate of incoming complaints level. However, there is a further decrease in the part of new international market in overall export volume indicator, due to slowing development of new markets, as evidenced by a significant increase of impact on efficiency indicator of the sum of sales volume at new international markets

(Fig. 5).

Figure 8: The share of the basic indicators influence on the change of efficiency indicators of knowledge perspectives and training system of examined enterprises IEA efficiency management for 2014/15 and 2015/16



However, it is aroused interest in differential of work productiveness growth rate at IEA sphere and average wages ratio, the growth of which was -81% in 2015, and already in 2016 it has grown 12 times (Fig. 7). First of all, such results in 2015 were influenced by a significant decline in the work productiveness growth rate, which was 96% of the total impact on the efficiency indicator components, and in its turn, it was the most influenced by decrease in volume of export goods. In 2016, there was a significant increase in work productiveness due to increase in volume of export goods by 136% and wages fund by 29% while the impact of the differential components begins to equalize.

CONCLUSION

Thus, considering the general influence of the basic indicators on the examined enterprises international economic activity efficiency management, it can be noted that in 2015, the largest impact had volume of export goods (19,5%) and sell price for export goods (13,8%), and the smallest – administrative cost (0,0002%). Such results can be explained by the fact that these indicators are among the most efficiency indicators.

However, accounting of the indicators absolute influence is inaccurate and less informative, further branching of the basic indicators should be based on the calculation of the average impact on the IEA efficiency.

The study of the basic indicators ranking based on the criterion of the average impact on the examined enterprises IEA efficiency gives completely different results – employees' work productiveness growth rate at the IEA sphere has the greatest influence (4,5%) and commercial value of the enterprise (4,4%). In 2016, the largest impact again had volume of export goods (17,9%) and sell price (9,04%), and the smallest – human capital value (0,001%). According to the criterion of the average effect on the IEA efficiency, the most influential basic indicators were the volume of export goods (4,48%) and number of employees who completed extension courses, probation, participated at seminars, training by occupation during a year (4,46%).

Therefore, when choosing target values and actions for improvement in the examined enterprises international economic activity, it was taken into account the impact of all examined basic indicators.

According to the results of the ranking of the basic indicators on the criterion of the average impact on the enterprise IEA efficiency it was found that the following 10 indicators are the main basic indicators that are subject to continuous monitoring and of strategic importance for the examined enterprises, as their overall impact on the IEA efficiency is 60% – are: volume of export goods, sell price for export goods, number of employees who completed extension courses, probation, participated at seminars, training by occupation during a year, commercial value of the enterprise, number of new and improved working methods implementation, implementation of technologies, total number of partners at international markets, actual hours worked by employees at IEA sphere, labour time expenditure because of conflicts, sum of sales volume at new international markets, employees' work productiveness growth rate at the IEA sphere. Other basic indicators discussed in this study are of secondary importance, may have a certain interval of monitoring and are taken into account when making managerial decisions at the tactical level.

Thus, in this study it is proposed the concept of formalized enterprise international activity efficiency management, which combines the strategic and tactical component of the management process at different stages of the enterprise development at the international market in ecological cycle. The definition of the efficiency indicators as a structural component of this concept on the basis of the logical-semantic maps formation and the causal relationships establishment allows conducting a ranking of the basic indicators during the formalization stage. Using of the criterion of the average base indicator impact on the enterprise IEA efficiency allows conducting a ranking of the basic indicators and to determine the main and auxiliary IEA indicators, which promotes efficient organization of internal business-processes, optimal allocation of enterprise information systems available resources and contributes to increasing the IEA efficiency.

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