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STRATEGIC ORGANIZATIONAL OPTIMIZATION OF BUSINESS PROCESSES OF A LOGISTICS ENTERPRISE IN THE CONTEXT OF CRISIS CHANGES IN THE ECONOMY

СТРАТЕГІЧНА ОРГАНІЗАЦІЙНА ОПТИМІЗАЦІЯ БІЗНЕС-ПРОЦЕСІВ ЛОГІСТИЧНОГО ПІДПРИЄМСТВА В УМОВАХ КРИЗОВИХ ЗМІН В ЕКОНОМІЦІ

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Бавико О.Є., Бавико О.О. Стратегічна організаційна оптимізація бізнес-процесів логістичного підприємства в умовах кризових змін в економіці. Науково-методична стаття.

Постійне посилення кризових тенденцій у соціально-економічному розвитку обумовлює необхідність цифрової організаційної оптимізації бізнес-процесів підприємницьких структур. На основі GAP-аналізу діяльності логістичних підприємств визначено дві основні проблеми: зменшення доходів та високий рівень собівартості послуг. За сучасних умов для підприємств відповідного типу доцільно обирати стратегію обмеженого зростання. В межах зазначеної стратегії розроблено два основних напрями оптимізації бізнес-процесів. Перший напрям, спрямований на зменшення обсягів витрат, передбачає організацію дистанційної роботи офісного персоналу. Другий напрям спрямований на горизонтальне стиснення бізнес-процесів за рахунок автоматизації комунікацій між співробітниками і клієнтами.

Ключові слова: організаційна оптимізація, бізнес-процес, стратегія, логістичне підприємство, організаційні зміни, організаційний розвиток

Bavyko O.Ye., Bavyko O.O. Strategic organizational optimization of business processes of a logistics company in a crisis in the economy. Scientific and methodical article.

The constant strengthening of crisis trends in socio-economic development makes it necessary to digitally optimize the business processes of business structures. Based on the GAP-analysis of the activities of logistics companies, two main problems have been identified: reduced revenues and high levels of service costs. In modern conditions, it is advisable to choose a strategy of limited growth for enterprises of this type. Within the framework of this strategy, two main directions of business process optimization have been developed. The first direction, aimed at reducing costs, involves the organization of remote work of office staff. The second direction is aimed at horizontal compression of business processes by automating communications between employees and customers.

Keywords: organizational optimization, business process, strategy, logistics enterprise, organizational changes, organizational development

The COVID-19 pandemic has become the main socio-economic event of the last two years. It demonstrated how defenceless the world community is before possible natural and man-made disasters. The global economy responded to the COVID-19 pandemic with an unprecedented decline in business activity in recent history. The external environment of business activity has become extremely aggressive. The negative impact of its factors on the stability and efficiency of business entities in almost all types of economic activity, except IT, has repeatedly increased. The decline in social and business activity has led to the destruction of national and international supply chains, which has severely affected the volume of logistics services. Enterprises in this field are forced to develop anti-crisis optimization strategies in order to stay on the market and get an opportunity for further functioning and development.

The relevance of the chosen topic for research is due to the need to form and evaluate the effectiveness of methodological tools for organizing the process of anti-crisis transformation of the organizational and managerial structure of logistics companies to ensure their effectiveness in the COVID-19 pandemic.

Analysis of recent researches and publications

The process approach, in which modern business structures are considered as a set of actions interconnected in a chain of value-added formation, is dominant in modern research on the problems of effective management organization. Confirmation of this idea was found in the works of domestic and foreign economists

Komandrovskaya V.E., Morozenko A.Yu. [1], Hammer M., Champi J. [2], Scheer a-V. [3], Davenport T. [4], Porter M., Millar V. [5], Deming E. [6], Gorlachuk V., Yanenkova I. [7], Chernobay L.I., Duma O.I. [8] and others.

The main factors that determine the need to optimize business processes according to Melnyk I.E. [9], Esipova K. [10], Skakun V.A. [11] are constant changes in the external environment (socio-economic and political shifts and crises, technological changes, environmental disasters, etc.), as well as the aggravation of competition against the background of globalization and informatization of the economy.

The aim of the study is to determine the organizational aspects of optimizing the business processes of logistics enterprises based on a strategic assessment of trends in the development of the national economy and its logistics sector in the context of crisis changes.

The main part

As already noted, the main factor in the formation of crisis phenomena in the economy was the COVID-19 pandemic. Its negative impact in its destructive consequences in the economy is compared with the Great Depression of the late 1930s. According to the World Health Organization, as of 23.11.2021, 258.469 million cases of coronavirus infection were recorded. The number of registered deaths was 5.175 million people. The global mortality rate from the total number of cases of the virus is 2%. Ukraine ranks 17th place in this sad statistic. At the time of the study, the number of infected people was 3.4 million, and the number of deaths was 82.3 thousand people. The mortality rate in Ukraine is 2.3% [12].

Restrictions on socio-economic activity within the framework of quarantine measures introduced led to a reduction in global GDP by 4% in 2020, and Ukraine's GDP by 4.3% [13]. The resumption of business activity in 2021, according to the IMF forecasts, will provide global GDP growth of 5.9%. Possible GDP growth in Ukraine is estimated by the IMF at 3.5% [14].

The globalization of the world economy determines the synchronization of indicators of economic activity in Ukraine with global trends. The shock of uncertainty in the first months of 2020 was replaced by the adaptation and recovery of economic activity in 2021, fig. 1.

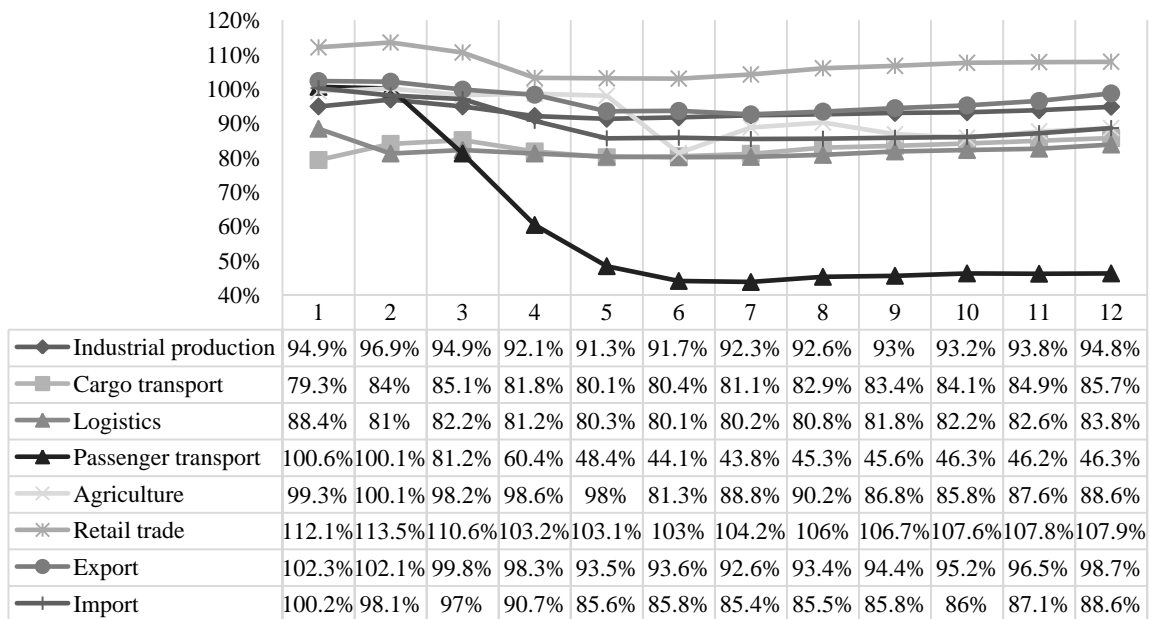


Figure 1. Growth (decline) rates of economic activity for the months of 2020 compared to the corresponding period of 2019

Source: compiled by authors on materials [15].

The most critical period for the sectors of the national economy was from February to June 2020. In the conditions of the national lockdown, industrial production decreased the most in May by 8.3%, cargo flow by 19.9%, agricultural output in June by 18.7%, passenger flow by 55.9%. The volume of retail trade turnover during 2020 exceeded the figures of 2019. It was the smallest in June. The high degree inertia of export-import operations caused a shift in critical points for July 2020, when the volume of exports decreased by 7.4%, and the volume of imports decreased by 14.6%. The reduction of uncertainty led to the stabilization of economic dynamics and its partial recovery. In November 2020, the physical volume of retail trade exceeded last year's figure by 7.8%, industrial production resumed to 93.8%, agricultural production to 87.6%, and cargo traffic increased to 84.9%

The logistics sector of the national economy depends on the transport industry. Therefore, the dynamics of the volume of logistics services provided generally repeats the corresponding indicators of cargo transportation volumes. During 2020, the volume of logistics services decreased the most, 19.7% in May. The summer months of 2020 were characterized by maintaining minimal volumes. At the end of 2020, there was a slight increase in the volume of logistics services provided, fig. 2.

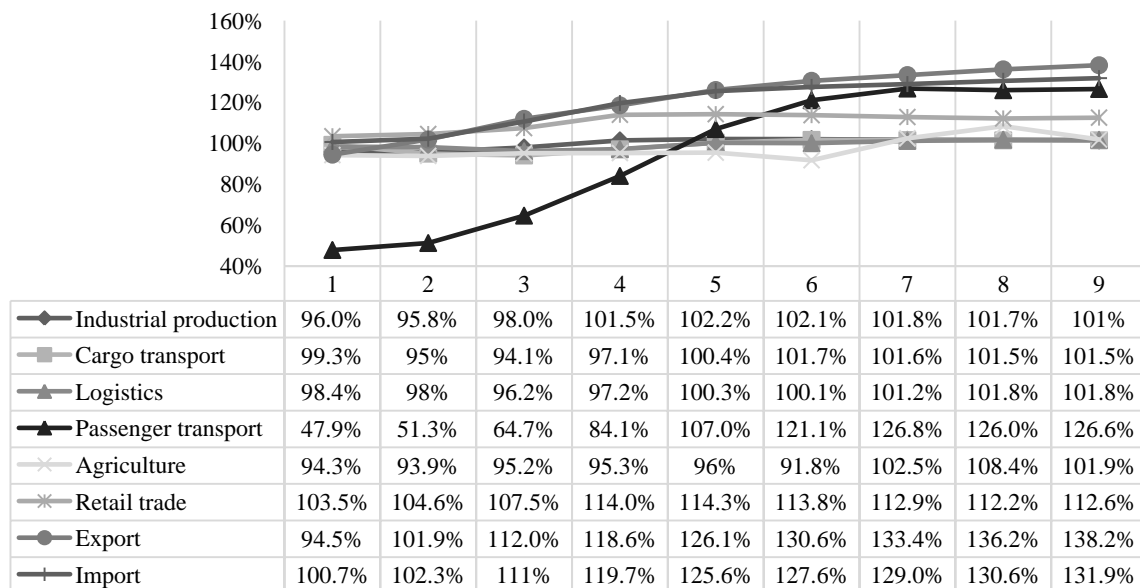


Figure 2. Growth (decline) rates of economic activity for the months of 2021 compared to the corresponding period of 2020

Source: compiled by authors on materials [15].

Analysis of economic activity indices for the main sectors of the economy suggests that only trade remains steadily growing, which increased by 12.6% compared to 2020, as well as exports (+38.2%) and imports of goods (31.9%). Industry (+1%), cargo (+1.5%), passenger (+26.6%) transport, agriculture (+1.9%), taking into account a slight increase, did not reach the pre-crisis indicators of 2019.

The logistics sector, due to its infrastructure nature, is completely dependent on the macroeconomic environment. In 2021, there is a slight recovery in the logistics sector (+1.8%), but this figure is very far from the volumes of 2019, since the decline in 2020 was -16.2%. Thus, we can state that the situation for business activities in the field of logistics in the domestic market remains negative.

The situation is different in the field of export-import operations. In 2021, the volume of exports exceeded the figures of 2019 by about 36%, and the volume of imports – by 20%. The increase in export-import operations increases the capabilities of logistics enterprises. At the same time, it should be noted that the corresponding segment of business activity is characterized by a well-established number of players and fairly high barriers to entry, which makes it difficult to start new businesses and protects enterprises that have been operating in this area for a long time from competition.

The presented study is based on an analysis of the organizational and managerial activities of the logistics Enterprise Logistics+ LLC, which occupies an average position in its market segment in most indicators of financial and economic activity. Analysis of the commercial activities of logistics enterprises that occupy average positions in the logistics services market is due to the fact that they account for 65% of total income, and their share in the total number is approximately 40%. This choice is also due to the possibility of extrapolating the results obtained to the economic activities of most logistics enterprises operating in the field of sea container transportation.

In the context of the economic crisis triggered by the COVID-19 pandemic, a decrease in demand for non-food products led to a decrease in cargo flows on all types of transport. The company's revenue in 2020 decreased by 8.2% compared to 2019 prices. Taking into account the fact that the main items of operating expenses are fixed in nature, the cost of services provided decreased by only 1.8%, which, against the background of maintaining the volume of administrative and other expenses, led to a decrease in operating profit by 15.3%. Accordingly, operating margin decreased from 6.8% to 5.9%. The company managed to avoid staff cuts, but the employee efficiency indicator decreased by 3.1%. In the context of a decrease in the customer base, due to the premium part, there was a slight decrease in the average salary by 3.7%.

In general, the company managed to maintain minimal economic efficiency, but in the context of a global decline in business activity in the logistics sector, the company's business processes need to be optimized in the direction of reducing costs and maintaining an acceptable level of operational profitability.

The tasks of developing business structures are determined on the basis of management strategies, the content of which is formed based on the results of analyzing changes and trends in the external environment and the existing potential of the enterprise. Uncertainty in the prospects for socio-economic development, together with the digital transformation of society, determine the choice of strategy for an enterprise that occupies an average position in the market. In our opinion, it is advisable for enterprises of the appropriate type to choose a strategy of limited growth and ensuring stability by optimizing and digitalizing business processes [16]. The main strategic goal should be defined as ensuring the stability and economic efficiency of the enterprise.

To achieve the strategic goal of an enterprise, it is necessary to identify problems in its organizational structure that do not allow this to be done. The process model of organizing the functioning of business structures used by a logistics enterprise provides for the formation of a horizontal management model. Within this model, all functional divisions are combined into a single value-added chain. The outputs or results of some processes are the inputs of subsequent ones. Thus, combining the operational activity of internal elements of the system, the business model of the enterprise is built. At the same time, each business process has its own structure, which consists of a specific sequence of sub-processes, employees who perform operations, resources and equipment used in a specific business process.

The functional efficiency of business processes has a direct impact on the anti-crisis stability of the enterprise and is reflected in specific quantitative and qualitative indicators. As a methodological basis for assessing the functional efficiency of business processes, the GAP analysis methodology was chosen, which allows us to identify problem areas in the organization of business processes and form possible ways to solve problems of reducing efficiency.

This methodology is based on the concept of "Gap" the gap between the planned and actual results of the enterprise's functioning. Ways to determine the desired or planned indicators of enterprise development are most often based on development goals that were determined by the owners of the enterprise, or on industry reference indicators.

Based on the results of the general assessment of the results of financial and economic activities of the logistics enterprise, two main problems were identified that need to be analyzed:

- reduction of sales of logistics services;
- insufficient level of reduction in the cost of logistics services.

In accordance with the economic activity plan of the enterprise, the volume of services planned for 2020 corresponded to the stabilization strategy, that is, it was determined by extrapolating the indicator of the previous period with correlation to the inflation index and amounted to 264132 thousand UAH. according to the financial statements of LLC "Logistics+", the volume of income from the sale of logistics services in 2020 amounted to 220324 thousand UAH, fig. 3.

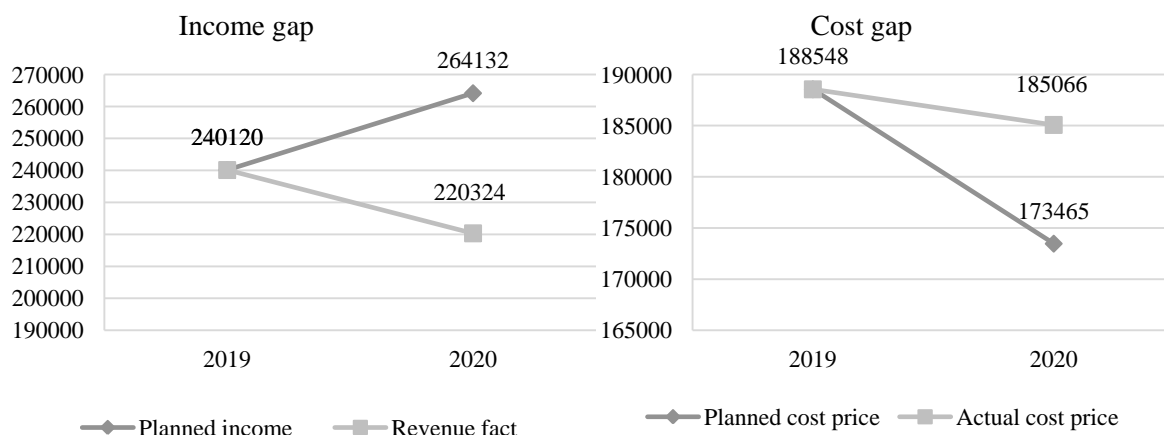


Figure 3. Visualization of strategic gaps between problem indicators of GAP analysis of logistics enterprise activity

Source: authors' own development

The gap between the planned and actual indicators of sales revenue is 43,808 thousand UAH. The stabilization strategy provided for a decrease or increase in the cost of production proportional to the dynamics of sales volumes. That is, with an actual decrease in sales volumes by 8.2%. The volume of prime cost was also supposed to decrease to 173465 thousand UAH. the actual indicator of the volume of prime cost was 185066 thousand UAH, which exceeds the planned figure by 11601 thousand UAH.

Determining the causes of gaps involves conducting a functional analysis of the effectiveness of business processes of the analyzed enterprise. Based on the analysis of business processes of Logistics+ LLC, a list of functional efficiency indicators that need to be analyzed is determined.

- Within the business process "Marketing" (A):
- A1. Number of informational posts for the official website;
 - A2. Number of posts for an Instagram account;
 - A3. The number of requests (leads) to customer relations specialists.
- Within the framework of the business process "Organizational support for the purchase of goods in foreign countries" (B):
- B1. Number of product purchase offers;
 - B2. Number of concluded contracts;
 - B3. Number of purchased product lots;
 - B4. Number of paid transactions.
- Within the business process "Transport Logistics" (C):
- C1. Average duration of transportation to the port;
 - C2. Consolidation period;
 - C3. Time limit for booking a seat on the ship.
- As part of the business process "Operational support of transport logistics" (D):
- D1. Timely invoice generation, informing the client, monitoring the payment of the invoice;
 - D2. Timely provision of information to the client.
- As part of the business process "Forwarding and customs clearance" (E):
- E1. Timely and controlled unloading;
 - E2. Timely execution of the customs declaration;
 - E3. Timely submission of documents to the client.
- The service cost indicator is affected by resource indicators related to all business processes:
- F1. Average number of operations within business processes;
 - F2. Average number of employees involved in business processes;
 - F3. The cost of resources required to organize business processes.
- Functional efficiency is evaluated on a 10 – point scale, where 10 is full compliance with the planned indicators, table. 1.

Table 1. Evaluation of indicators of functional efficiency of business processes of a logistics enterprise

Indicator	Quarters of 2020 y.								Result		Rating
	I		II		III		IV				
	Plan	Fact	Plan	Fact	Plan	Fact	Plan	Fact	Plan	Fact	
Volume of logistics services sold											
A1	45	30	45	35	45	39	45	41	180	145	8.1
A2	90	65	90	60	90	65	90	64	360	254	7.1
A3	450	310	450	302	450	325	450	367	1800	1400	7.8
B1	180	123	180	85	180	90	180	150	720	448	6.2
B2	150	97	150	63	150	95	150	108	600	363	6.1
B3	148	94	148	61	148	92	148	104	592	351	5.9
B4	145	92	145	58	145	90	145	101	580	342	5.8
C1	3	3.5	3	3.0	3	3.5	3	4.0	3	3.5	8.6
C2	2	3.5	2	3.0	2	3.0	2	3.0	2	3.1	9.7
C3	2	3.0	2	2.0	2	3.0	2	3.0	2	2.8	7.2
D1	1	1.0	1	1.0	1	1.0	1	2.0	1	1.3	7.7
D2	1	1.0	1	1.0	1	1.0	1	2.0	1	1.3	7.7
E1	1	1.0	1	1.0	1	1.0	1	1.5	1	1.1	8.9
E2	2	2.0	2	2.0	2	3.0	2	3.5	2	2.6	7.7
E3	1	1.0	1	1.0	1	1.0	1	1.5	1	1.1	8.9
Cost of logistics services											
F1	25	34	15	39	25	35	25	32	25	35	7.1
F2	90	87	90	89	90	88	90	89	90	88	9.8
F3	43.4	46.3	43.4	46.3	43.4	46.3	43.4	46.3	173.5	185.2	9.4

Source: authors' own development

Based on the results of the GAP analysis, the degree of compliance of indicators of functional efficiency of business processes with the planned values was established. The lowest is the level of compliance of indicators within the business process "organizational support for the purchase of goods in foreign countries". GAP analysis of the functional efficiency of business processes allowed us to determine the hierarchy of problems that form the strategic gap between the desired and actual state. The main reasons for the formation of strategic gaps were.

- For the problem of reducing the volume of sales of products:
- insufficient number of paid transactions;

- insufficient number of concluded contracts;
- insufficient number of leads;
- late formation of invoices, processing of customs declarations;
- delay in providing information to customers.
- insufficient information activity of the site and Instagram account.

For the problem of a disproportionate level of cost:

- too many operations within business processes;
- high cost of resources for organizing business processes.

Based on the results of evaluating the functional efficiency of business processes, a tree of tasks was constructed to achieve the strategic goal of developing a logistics enterprise in the context of crisis changes in the economy, fig. 4.

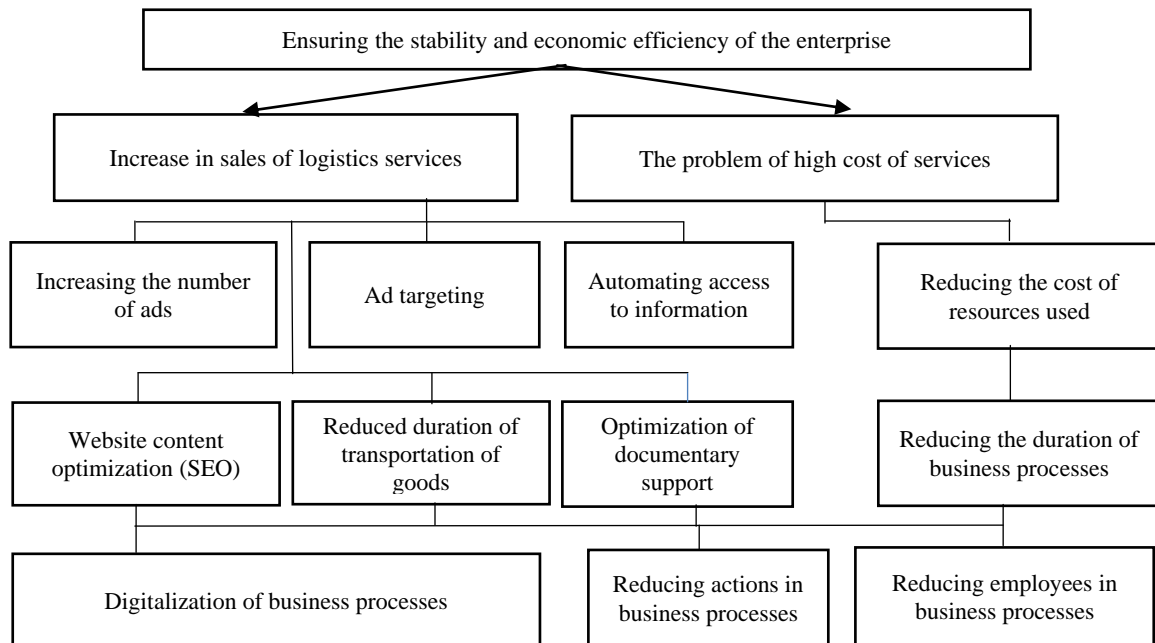


Figure 4. Tasks of anti-crisis optimization of business processes of a logistics enterprise

Source: authors' own development

Within the limits shown in Fig. 4 tasks, based on the mechanism of business process optimization justified in our previous research, the main directions and appropriate measures for their organizational optimization were determined.

The first direction of optimizing business processes is aimed at reducing costs in the context of a pandemic. It is planned to transfer 50% of office staff to a remote form of work organization. Analysis of the content of business processes provided grounds to establish that the main direction of optimization can be to reduce the volume of fixed costs associated with the maintenance of office space and equipment by transferring 50% of employees working in the office to remote work. The company's operational activities are organized on the basis of two office premises with a total area of 480 m², which are organized on the principles of "openspace". The organization of remote work of 50% of office employees (45 people) provides an opportunity to abandon the second office space and the cost of its rent, utilities, maintenance and repair of equipment. The first office space with an area of 250 m² meets building codes, according to which there should be less than 4.5 m² per office employee. Organizational costs associated with the transfer of employees to remote work mode include modernization of information and communication support, installation of an additional server and equipment for storing large amounts of information worth 250 thousand UAH.

The second direction of optimizing business processes is aimed at their horizontal compression. This direction involves reducing the duration of the process based on its simplification and automation of communication between employees and customers. First, in order to reduce the duration of the business process "marketing", it provides for the use of artificial intelligence elements, namely a chatbot for preliminary consulting of clients and sorting and sending leads to managers by their specialization. Using the chatbot is aimed at sorting incoming calls by category and sending them to managers who specialize in certain product groups, which increases the efficiency and speed of communication and the selection of product batches necessary for the client. Along with improving efficiency, this measure reduces the number of incoming calls for managers. The measure provides for the reduction of two positions of customer service specialists.

Secondly, in order to reduce the business process "Transport Logistics", it is planned to combine the sub-process "control of the passage of a vessel by transit time" with the sub-process "information support of the passage of a vessel by sea line". Based on the analysis of the content of subprocesses, the actual duplication of the function "monitoring the passage of a vessel by transit time" was established. The corresponding measure frees up 1 hour of working time per day for a specialist working with sea lines.

Third, in order to simplify the sub-process "operational support of transport logistics", it is planned to automate customer access to information about the passage of the ship and the time of ship call, which allows you to remove one sub-process and free up 1 hour of working time of the operational manager. The event provides for providing customers with automated access to a satellite surveillance system for marine vessels.

The organizational feasibility of implementing these measures is due to the need to establish the operation of the enterprise in the conditions of restrictions associated with the COVID-19 pandemic. The economic feasibility is due to the need to reduce costs in the context of reduced business activity, table. 2.

Table 2. Calculation of the economic effect of business process optimization during a calendar year

№	Name and content of the event	Implementation costs	Economic efficiency
1	Transfer of 50% of office staff to a remote form of work organization	-additional equipment 250 thousand UAH; -professional development of employees 50 thousand UAH -setting up a corporate network 50 thousand UAH.	-save office rental costs of UAH 924 thousand; -save on utility costs 216 thousand UAH;
2	Reducing the business process of "marketing" by implementing a chatbot	-chatbot development 80 thousand UAH; -technical support of the chatbot 120 thousand UAH.	-reduction of the salary fund by 324 thousand UAH
3	Shortening the "Transport Logistics" business process by combining subprocesses C5 and D3.	-professional development of employees 50 thousand UAH.	-reduce the cost of working time by 20 hours. 5 employees 81.6 thousand UAH
4	Reducing the "Operational support" business process by removing the D3 subprocess	-setting up automated access 50 thousand UAH	-reduce the cost of working time by 20 hours. 5 employees 81.6 thousand UAH
	Total	650 thousand UAH	1627 thousand UAH

Source: authors' own development

Calculation of the direct economic effect indicates the possibility of reducing the company's expenses by 977 thousand UAH per calendar year. The cost savings achieved thanks to the developed measures to optimize business processes ensure an increase in the company's profitability by 6.4%.

Conclusions

The globalization of the world economy and the constant strengthening of crisis trends in socio-economic development make it necessary to optimize the business processes of business structures, which will ensure their sustainable and effective functioning. The nature of optimization of business processes depends on the specifics of the type of economic activity to which the business structure belongs. At the same time, given the digital nature of social transformation, it is digital technologies and their active implementation that allow logistics enterprises to reduce costs and maintain and multiply customer loyalty. Against the background of synchronization of trends in the development of the Ukrainian economy with global trends, it should be noted that its recovery in most types of economic activity and GDP in general did not ensure a return to pre-crisis positions. Logistics activities, which due to their infrastructure nature depend on the macroeconomic environment, also lost in the volume of business activity in the domestic market. At the same time, an increase in the volume of export-import operations in 2021 provided logistics enterprises with additional opportunities to generate income. Based on the analysis of indicators of financial and economic activity of logistics enterprises, it is concluded that for enterprises of the appropriate type, it is advisable to choose a strategy of limited growth and ensuring stability by optimizing and digitalizing business processes. Within the framework of this strategy, two main areas of business process optimization have been developed. The first direction of business process optimization involves transferring 50% of office staff to remote work, which reduces costs and ensures the smooth functioning of the enterprise in the face of restrictions associated with the COVID-19 pandemic. The second direction of optimizing business processes is aimed at their horizontal compression. This direction provides for reducing the duration of processes based on their simplification and automation of communication between employees and customers. Based on the results of implementing the measures proposed in the study, the company's operating profitability may increase by 6.4%.

Abstract

The globalization of the world economy and the constant strengthening of crisis trends in socio-economic development make it necessary to optimize the business processes of business structures, which will ensure their sustainable and effective functioning. The nature of optimization of business processes depends on the specifics of the type of economic activity to which the business structure belongs. At the same time, given the digital nature of social transformation, it is digital technologies and their active implementation that allow logistics enterprises to reduce costs and maintain and multiply customer loyalty. The relevance of the chosen topic for research is due to the need to form and evaluate the effectiveness of methodological tools for organizing the process of anti-crisis transformation of the organizational and managerial structure of logistics companies to ensure their effectiveness in the COVID-19 pandemic. The aim of the study is to determine the organizational aspects of optimizing the business processes of logistics enterprises based on a strategic assessment of trends in the development of the national economy and its logistics sector in the context of crisis changes.

Against the background of synchronization of trends in the development of the Ukrainian economy with global trends, it should be noted that its recovery in most types of economic activity and GDP in general did not ensure a return to pre-crisis positions. Logistics activities, which due to their infrastructure nature depend on the macroeconomic environment, also lost in the volume of business activity in the domestic market. At the same time, an increase in the volume of export-import operations in 2021 provided logistics enterprises with additional opportunities to generate income.

Based on the analysis of indicators of financial and economic activity of logistics enterprises, it is concluded that for enterprises of the appropriate type, it is advisable to choose a strategy of limited growth and ensuring stability by optimizing and digitalizing business processes. Methods and mechanism of strategic organizational optimization of business processes of a logistics enterprise are determined.

Within the framework of this strategy, two main areas of business process optimization have been developed.

The first direction of business process optimization involves transferring 50% of office staff to remote work, which reduces costs and ensures the smooth functioning of the enterprise in the face of restrictions associated with the COVID-19 pandemic.

The second direction of optimizing business processes is aimed at their horizontal compression. This direction provides for reducing the duration of processes based on their simplification and automation of communication between employees and customers. Based on the results of implementing the measures proposed in the study, the company's operating profitability may increase by 6.4%.

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