Kyiv National University of Trade and Economics
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FINAL QUALIFYING PAPER
on the topic:
"Organization of transport operations of an enterprise in a foreign economic activity"

(based on the data of «GEFCO UKRAINE» LLC)

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INTRODUCTION

Relevance of research at the present stage of transition to market relations, there is a need for accelerated development of production infrastructure, in particular transport, which ensures reliable transportation of material resources. In conditions of competition, the level of demand for transport services is determined by the quality of the service, since its increase allows to increase the efficiency of production and, accordingly, the revenues of the collectives of the enterprises using such services.

International transportation is an important type of foreign economic activity. The goods can not be delivered from one country to another without the use of vehicles; thus, naturally, the cost of the goods increases. Currently, the volume of international traffic is so large, and transport operations are so complex that there is a need to establish common rules and regulations for international transport. The urgency of bringing national norms into a single system of standards is also emphasized by the fact that in the world, in essence, is created a single transport system, covering at least the territory of the developed countries of Europe, North America and many other regions.

In the process of foreign economic activity of the enterprise there is a need to carry out a complex and specific complex of transport operations, associated with the movement of huge masses of various goods over considerable distances from the sphere of production to the sphere of consumption.

The main task of the system of management of international transport operations of the enterprise is to increase the efficiency of its functioning by further optimization of its structure, widespread use of modern organizational forms and technologies, improvement of legal norms and enhancement of the role of governing bodies of the system, which will more fully meet the requirements of the market of services

The problems of development and improvement of international freight transportation were considered in their direct by the following scientists: Bondarev

S.I., Marunich V.S., Shmorgun L.G., Miroshnichenko L.V., Velmozhin O.V., Gudkov V.A., Perebinis V.I., Boldyreva L.M., Perebinis O.V., Yanovitskaya A.V., Kasporuk O.S., Pasichnyk O.M., Okhota V.A., Panchuk V.A., Kozina K.G. etc.

From the analyzed works it follows that the basis of modern logistics is the management of material flows throughout the supply chain in the direction and in the interests of the end user in order to achieve maximum efficiency of processes.

Many concepts and principles of the implementation of foreign economic activity, which were quite acceptable and arranged management of enterprises in the recent past, begin to significantly inhibit the dynamics of business development and require detailed analysis and revision to improve them.

Therefore, in order to preserve its position in the world market, it is necessary to develop certain mechanisms for improving the technological and process efficiency. There is an urgent need to find additional opportunities for further reducing the level costs, improving the quality of service, improving the processes of regulation and coordination of flow management, which requires a logistic approach. It deals with various (economic, social, technical, technological, organizational, legal, scientific, psychological, environmental) aspects of people's activities.

The purpose of the work is to study theoretical and practical aspects, substantiation of practical recommendations for improving international freight transportation at the enterprise.

The aim of the study led to the need to solve the following problems:

1) Analysis of a financial and economic activity of the «GEFCO Ukraine» LLC
2) General characteristics of an organizational and economic mechanism of a transport activity of the «GEFCO Ukraine» LLC
3) Assessment of a transport activity efficiency of the «GEFCO Ukraine» LLC
4) Necessity of improvement of the enterprise's organization mechanism of transport operations

5) Development of improvement measures set of transport operations of the «GEFCO Ukraine» LLC
6) Forecasted changes in the foreign economic activity of the «GEFCO Ukraine» LLC on the basis of proposed measures

The object of the study is the processes of international freight transportation at the enterprise.

The subject of the research is theoretical, scientific and methodical, practical aspects of analysis, evaluation and improvement of international cargo transportation.

SECTION 1. RESEARCH OF AN ORGANIZATIONAL MECHANISM OF TRANSPORT OPERATIONS OF THE «GEFCO UKRAINE» LLC

1.1. Analysis of a financial and economic activity of the «GEFCO Ukraine» LLC

International transport is an important foreign economic activity. Goods cannot be shipped from one country to another without the use of vehicles; of course, the cost of goods is increasing. International is considered to be a carriage between two or more countries.

Today, the volume of international transportation is so large, and transportation operations are so complex that it leads to a more in-depth study of this topic, namely by the example of «GEFCO Ukraine» LLC.

The subject of activity of «GEFCO Ukraine» LLC:

1) Organization and implementation of domestic, international air transportation, rail transportation, sea transportation, road transportation;

2) Organization of wholesale and retail trade;

3) Conducting mediation transactions in which ownership does not pass to the mediator (commission trading, contracts, warrants, etc.);

4) Customs clearance and tax representation in EU countries, warehousing services, logistics of finished cars, distribution of finished goods to warehouses and points of sale, distribution of spare parts, supply of production facilities,

5) Expert in the field of 4PL, optimizes the customer's supply chain (financial, operational and information flows):

- Engineering, re-engineering (network development),
- Procurement management based on cost transparency,
- Account Control
- Dispatching and transportation planning,

6) Exhibition logistics:

- International exhibitions and fairs
- Product launch, press conferences
- Sports events and rallies
- Film festivals, advertising campaigns, photography, concerts, marathons

7) GEFCO Logistics expertise covering the following sectors:

- Energy (oil and gas sector, nuclear energy, renewable energy sector): generators, transformers, wind turbines, windmills, pipes, etc.
- Logistics for the aerospace industry: military transport, satellites, aircraft parts
- Heavy equipment: agriculture / construction / self-propelled installations for the mining industry, rolling stock, buses, large-size spare parts, etc.
- Construction: iron pipes, fittings, plates, equipment for factories
- Automotive sector: stamping presses, transportation to / from production sites carriage of ready-to-sell cars, components to cars.
- Agro products

The assets of the enterprise consist of fixed assets and current assets, as well as those whose value is reflected in the balance sheet of the enterprise. The company has an independent balance sheet, settlement, currency and other accounts in banks, printing with its name, brand and trademark. The profit of the enterprise is formed from the income from the economic activity after covering the material and related costs and expenses for wages. Taxes and other payments to the budget are made from the company 's balance sheet profit.

The sources of formation of property of «GEFCO Ukraine» LLC also include:

1) cash and material contributions of the founders;

2) income derived from the sale of products, as well as from other types of economic activity;

3) loans from banks and other creditors;

4) capital investments and subsidies from the budgets;

5) proceeds from the privatization and privatization of property;

6) acquisition of property of another enterprise, organization.

The relations of the enterprise with other market entities are based on contracts. The enterprise uses a linear type of organizational structure. The linear type of organizational structure of management is characterized by linear forms of communication between management units. Advantages of such management structure at the enterprise are: establishment of clear and simple relations between divisions, unity and clarity of orders, consistency of actions of executors, prompt decision-making, personal responsibility of the head for the final results of the activity of his department.

Any company, including «GEFCO Ukraine» LLC as an open system, depends on the environment. Environmental factors can be seen as opportunities and threats to the enterprise, their positive or negative impact on the organization will depend on the effectiveness of management and adaptability of the enterprise. Therefore, the main task of the management of «GEFCO Ukraine» LLC is a careful study of the behavioral influence of external factors on the activity of the enterprise, timely identification of the most significant external influences and optimization of their impact on the enterprise.

The volume of activity of the enterprise is quite significant today, with an annual increase in the demand for services offered by the company, which is connected, first of all, with the active development of the commercial department.

The results of the analysis of the financial documents of the enterprise show that in recent years there has been an increase in the volume of activity of the enterprise. In particular, net income tended to increase, in 2018 its volume amounted to 161955 thousand UAH, which is by 15129 thousand UAH, since in 2014 the company worked on contracts that were concluded in 2013.

With the growth of net profit during the study period, there was a proportional increase in cost, which did not allow to receive more profit from the work performed.

During 2014-2018, there was an increase in the administrative expenses of the company, which was primarily due to the expansion of the company's staff. At the same time, there was a slight increase in sales costs (by 8%), as well as a significant decrease (by almost 30%) in other operating expenses. Positively the dynamics of the financial results of the company was influenced by the increase in other operating income in 2018, amounting to 11 438 thousand UAH, which is 29% more than in 2017. In general, the operating activity of the enterprise has been profitable only in the last 5 years, and there is a tendency to increase the volume of financial results from operating activities, which is positive (Table 1.1).

Table 1.1

Dynamics of Financial Results on «GEFCO Ukraine» LLC in 2014 -2018 in ths. UAH

№	Indicators	Years					Absolute deviation				Relative deviation,%			
		2014	2015	2016	2017	2018	2015 / 2014	2016 / 2015	2017 / 2016	2018 / 2017	2015 / 2014	2016 / 2015	2017 / 2016	2018 / 2017
1	Net income	90092	109463	136381	146826	161955,0	19371	26918	10445	15129	1,22	1,25	1,08	1,10
2	Cost of sales	83835	99513	116929	130240	150666	15678	17416	13311	20426	1,19	1,18	1,11	1,16
3	Gross: profit	6257	9950	19452	16586	11289	3693	9502	-2866	-5297	1,59	1,95	0,85	0,68
4	Other operating income	4160	6720	9100	11438	14775	2560	2380	2338	3337	1,62	1,35	1,26	1,29
5	Administrative expenses	6394	6154	7777	8904	10453	-240	1623	1127	1549	0,96	1,26	1,14	1,17
6	Selling expenses	293	392	405	390	423	99	13	-15	33	1,34	1,03	0,96	1,08
7	Other operating expenses	5221	8213	11120	10655	7548	2992	2907	-465	-3107	1,57	1,35	0,96	0,71
8	Financial results from operating activities	1491	1911	9250	8075	7640	420	7339	-1175	-435	1,28	4,84	0,87	0,95
9	Other financial income	0	4	4	1	47	4	0	-3	46	0,00	1,00	0,25	47,00
10	Other income	3208	4615	141	777	1955	1407	-4474	636	1178	1,44	0,03	5,51	2,52
11	Financial expenses	1406	4972	9134	7948	6947,	3566	4162	-1186	-1001	3,54	1,84	0,87	0,87
12	Other expenses	18	1059	70	462	80	1041	-989	392	-382	58,83	0,07	6,60	0,17
13	Financial results before tax	293	499	191	443	2615	206	-308	252	2172	1,70	0,38	2,32	5,90
14	Loss (Income) from tax on profit	177	278	34	266	686	101	-244	232	420	1,57	0,12	7,82	2,58
15	Net profit	116	221	157	177	1929,	105	-6	20	1752	1,91	0,71	1,13	10,90

Source: Calculated by author based on LLC “GEFCO Ukraine `s” data

Despite the considerable financial expenses and not significant growth of financial and other income, the financial results from the ordinary activities of the enterprise had a positive balance during the whole study period.

According to Table 1.2, we see in 2016 a significant decrease in the value of the assets of the company of the year, it amounted to 44342 thousand UAH, which is by 1778 thousand UAH. However, in 2018 it increased to 50728 thousand UAH, which is by 8164 thousand UAH more than in 2017. There was also a decrease in intangible assets and original cost in 2014-2017, but already in 2018 there was a rapid increase.

The problems of the enterprise arising from the structure of the balance sheet asset can be attributed to the fluctuations in the amount of cash in the accounts of the enterprise, but at the moment it tends to grow, which is positive. At the same time, there is an increase in accounts receivable, which indicates that the system of payments to the enterprise with customers is not optimized.

The calculations show that in recent years there have been significant changes in the structure of property of the enterprise: the share of non-current assets has fluctuated from 69.40% (in 2014) to 53.64% (in 2018). At present, fixed assets account for 47.81% of the property, while their share in the structure is actively fluctuating.

In the structure of sources of financing of the enterprise, equity capital prevailed during the period under study, although its volume fluctuated and decreased by 3% from 25 180 thousand UAH up to 24700 thousand UAH. The decrease in the cost of the enterprise's own funds was due to fluctuations in retained earnings that occurred throughout the period under review. (Table 1.2).

Long-term liabilities fluctuated within the capital structure of the enterprise, in particular, long-term liabilities, which in 2014 amounted to 14808 thousand UAH, while at the moment of 2017 they decreased to 5336 thousand UAH, but in 2018 the liabilities increased again to 12089 thousand UAH.

Table 1.2

Dynamics of Assets on «GEFCO Ukraine» LLC 2014-2018, in ths. UAH

№	Assets	As of 31.12					Absolute deviation				Relative deviation,%			
		2014	2015	2016	2017	2018	2014/2015	2015/2016	2016/2017	2017/2018	2014/ 2015	2015/ 2016	2016/ 2017	2017/ 2018
	I. Non-current assets:													
1	Intangible assets	20	2	0	0	60	-18	-2	0	60	0,11	0,00	0,00	0,00
1.1	Original value	142	142	142	142	133	0	0	0	-9	0,00	0,00	0,00	0,00
1.2	Amortization	-122	-140	-142	-142	-73	-18	-2	0	69	0,11	0,00	0,00	0,00
2	Incomplete capital investment	0	0	0	0	2896	0	0	0	2896	0,00	0,00	0,00	0,00
3	Fixed assets:	33674	32428	24140	17083	24255	-1246	-8288	-7057	7172	6,65	0,85	-1,02	0,00
3.1	Original value	88045	85409	86063	82010	92918	-2636	654	-4053	10908	-0,25	-6,20	-2,69	0,00
3.2	Depreciation of fixed assets	-54371	-52981	-61923	-64927	-68663	1390	-8942	-3004	-3736	-6,43	0,34	1,24	0,00
4	Deferred tax assets	0	2090	2246	2246	0	2090	156	0	-2246	0,07	0,00	0,00	0,00
5	Total non-current assets:	33694	34520	26386	19329	27211	826	-8134	-7057	7882	-9,85	0,87	-1,12	0,00
	II. Current assets:													
6	Stocks:	1114	1389	2310	2764	2118	275	921	454	-646	3,35	0,49	-1,42	-0,01
6.1	Inventories	838	1151	1861	2217	1715	313	710	356	-502	2,27	0,50	-1,41	0,00
6.2	Unfinished production	59	16	65	70	158	-43	49	5	88	-1,14	0,10	17,60	-0,01
6.3	Goods	218	222	384	477	245	4	162	93	-232	40,50	0,57	-2,49	-0,17
7	Accounts receivable for goods and services	6795	9864	9420	11602	13060	3069	-444	2182	1458	-0,14	-4,91	0,67	0,00
8	Accounts receivable by budget	3403	2976	2434	2325	3450	-427	-542	-109	1125	1,27	0,20	-10,32	0,00
9	Income tax	915	207	524	428	0	-708	317	-96	-428	-0,45	-0,30	4,46	0,00
10	Other Current Accounts Receivables	1160	769	830	1719	2005	-391	61	889	286	-0,16	14,57	0,32	0,00
11	Cash and cash equivalents	677	1172	1907	987	1242	495	735	-920	255	1,48	-1,25	-0,28	0,01
12	Future spending costs	1556	1385	867	3688	1482	-171	-518	2821	-2206	3,03	-5,45	-0,78	0,00
13	Other current assets	150	90	188	150	160	-60	98	-38	10	-1,63	-0,39	-0,26	-0,16
14	Total current assets	14855	17645	17956	23235	23517	2790	311	5279	282	0,11	16,97	0,05	0,00
15	Total assets	48549	52165	44342	42564	50728	3616	-7823	-1778	8164	-2,16	0,23	-4,59	0,00

Source: Calculated by author based on LLC “GEFCO Ukraine `s” data

Table 1.3

Dynamics of Liabilities on «GEFCO Ukraine» LLC in 2014 -2018in ths. UAH.

№	Liabilities	As of 31.12					Absolute deviation				Relative deviation,%			
		2014	2015	2016	2017	2018	2014/ 2015	2015/ 2016	2016/ 2017	2017/ 2018	2014/ 2015	2015/ 2016	2016/ 2017	2017/ 2018
1	Net Equity: Share capital	1000	1000	1000	1000	1000	0	0	0	0	1,00	1,00	1,00	1,00
2	Additional capital	866	866	866	866	866	0	0	0	0	1,00	1,00	1,00	1,00
4	Reserve capital	250	250	250	250	250	0	0	0	0	1,00	1,00	1,00	1,00
5	Retained earnings (uncovered loss) Long-term liabilities	23108	23229	23286	23363	22628	121	57	77	-735	1,01	1,00	1,00	0,97
6	Total Net Equity	25180	25301	25358	25435	24700	121	57	77	-735	1,00	1,00	1,00	0,97
7	Other long-term liabilities	14804	17730	11818	5336	12089	2926	-5912	-6482	6753	1,20	0,67	0,45	2,27
8	Total long-term liabilities	14804	17730	11818	5336	12089	2926	-5912	-6482	6753	1,20	0,67	0,45	2,27
9	Current accounts payable:													
9.1	Long-term liabilities	0	0	0	0	1067	0	0	0	1067	0,00	0,00	0,00	0,00
9.2	For goods, work, services	5396	5646	3825	7362	4977	250	-1821	3537	-2385	1,05	0,68	1,92	0,68
9.3	According to calculations with the budget	190	350	340	605	880	160	-10	265	275	1,84	0,97	1,78	1,45
9.4	Including tax	0	0	0	0	258	0	0	0	258	0,00	0,00	0,00	0,00
9.5	From insurance	515	811	569	612	613	296	-242	43	1	1,57	0,70	1,08	1,00
9.6	From wages	1082	927	1116	1297	1868	-155	189	181	571	0,86	1,20	1,16	1,44
9.7	According to the calculations with participants	40	42	47	53	53	2	5	6	0	1,05	1,12	1,13	1,00
10	Current security	0	0	0	109	3030	0	0	109	2921	0,00	0,00	0,00	27,80
11	Other current commitments	1342	1358	1269	1755	1451	16	-89	486	-304	1,01	0,93	1,38	0,83
12	Total Current Liabilities	8565	9134	7166	11793	13939	569	-1968	4627	2146	1,07	0,78	1,65	1,18
13	Balance	48549	52165	44342	42564	50728	3616	-7823	-1778	8164	1,07	0,85	0,96	1,19

Source: Calculated by author based on LLC “GEFCO Ukraine `s”

On the basis of the financial statements, the liquidity, solvency indicators were calculated. The obtained figures indicate a significant financial soundness in the enterprise. In particular, fluctuations in the coverage ratio were observed, but they remained within acceptable limits, the coverage ratio within 1.68 - 2.5, and the quick liquidity ratio - 1.53-2.28. However, the absolute liquidity ratio at the moment of 2017 decreased from 0.26 to 0.83, this decrease is negative for the enterprise. Also, fluctuations in net working capital should stimulate the development of new strategies and plans, as at the moment of 2014 this figure amounted to 25129 thousand UAH, and in 2015 it decreased to 8511 thousand UAH and continued to fluctuate in this range (Table 1.4)

Table 1.4

Dynamics of liquidity indicators of GEFCO Ukraine LLC for 2014 –2018

System of indicators of liquidity						Absolute deviation			
Indicators	31.12. 2014	31.12. 2015	31.12. 2016	31.12. 2017	31.12. 2018	2015/ 2014	2016/ 2015	2017/ 2016	2018/ 2017
Coefficient of coverage	1,73	1,93	2,50	1,9	1,68	0,2	0,57	-0,60	-0,22
Quick liquidity ratio	1,60	1,77	2,18	1,73	1,53	0,17	0,41	-0,45	-0,20
Absolute liquidity ratio	0,07	0,12	0,26	0,08	0,09	0,05	0,14	-0,18	0,01
Net working capital	25129	8511	10790	11442	9578	-16618	2279	652	-1864

Source: Calculated by author based on LLC “GEFCO Ukraine `s” data

Table 1.5

Dynamics of solvency indicators of GEFCO Ukraine LLC for 2014 – 2018

System of indicators of solvency						Absolute deviation			
Indicators	31.12 2014	31.12 2015	31.12 2016	31.12 2017	31.12. 2018	2015/ 2014	2016/ 2015	2017/ 2016	2018/ 2017
Solvency ratio	0,51	0,48	0,57	0,59	0,48	-0,03	0,09	0,02	-0,11
Financing rate	0,92	1,06	0,74	0,67	1,05	0,14	-0,32	-0,07	0,38
The coefficient of security of own working capital	0,42	0,48	0,6	0,49	0,4	0,06	0,12	-0,11	-0,09
Equity maneuverability factor	0,24	0,33	0,42	0,44	0,38	0,09	0,09	0,02	-0,06

Source: Calculated by author based on LLC “GEFCO Ukraine `s” data

The dynamics of solvency indicators «GEFCO Ukraine» LLC were downward. In particular, during the period under review, there was a rapid decline in the ratio of the security of own working capital, which still shows the security of the enterprise with its own working capital. Equity maneuverability ratio is constantly changing during the period under review, indicating a lack of liquid assets and increasing dependence on external sources of financing. At the same time, the ratio of autonomy and financing are now within the normal range, since equity still outweighs debt, but this advantage is not significant enough and has significant fluctuations (Table 1.5).

So, on the whole, we can say that the company is profitable.

1.2. General characteristics of an organizational and economic mechanism of a transport activity of the «GEFCO Ukraine» LLC

Consider the specifics of «GEFCO Ukraine» LLC international activity as an enterprise specializing in international freight. International freight transportation requires coordination along the entire route of traffic with the appropriate foreign road services, the route is selected taking into account all road conditions, in some countries, depending on the dimensions of the goods being transported, the necessary support of motor trains by support vehicles (police, road services, etc.). Such as prepared accompanying documents, which allow you to prepare very quickly, following all international directions, offer careful control in the customs area. Carrying out cargo inspections for the conformity of these units in the customs declaration and the correctness of all documents submitted, and in case of errors the enterprise will have big problems. That is why GEFCO Ukraine LLC employs employees with extensive experience who know all the moments and no have mistakes.

The clients of GEFCO Ukraine LLC are domestic metallurgical, chemical, energy and other enterprises, as well as international companies. The international activity of the company consists in transportation of domestic all necessary goods, despite the gravity of the task, the volume and size serves transport services of export, delivery of ordered equipment abroad to Ukraine, transportation of equipment for production abroad and transportation of goods between divisions of companies of different countries.

Therefore, to better understand a specific understanding of the total volume of transportation, we analyze the dynamics of export and import of transport services of the enterprise in the table 1.7.

Table 1.7

Dynamics of International Transport Services of «GEFCO Ukraine» LLC, 2014-2018

Indicators	Years					Absolute Deviation, ths. UAH			
	2014	2015	2016	2017	2018	2015/ 2014	2016/ 2015	2017/ 2016	2018/ 2017
Transportation of exported commodities									
1.1 In thousand UAH	38134,4	46023,8	46933,60	49163,90	75743,90	7889,39	909,77	2230,30	26580,00
1.2 Specific weight	65,45	70,12	70,73	71,98	74,96	4,67	0,61	1,25	2,98
Transportation of imported commodities									
1.1 In thousand UAH	20130,56	19609,17	19418,4	19136,50	25300,60	-521,39	-190,77	-281,90	6164,10
1.2 Specific weight	34,55	29,88	29,27	28,02	25,04	-4,67	-0,61	-1,25	-2,98
Total	58265,00	65633,00	66352,00	68300,40	101044,50				

Source: Calculated by author based on LLC "GEFCO Ukraine `s" data

From the data of the table 1.7 it is possible to determine that at the enterprise during the analyzed period there is an increase in the foreign trade balance, that is, an increase of the excess transportation of exported commodities over the imported commodities. Transportation of exported commodities increased steadily over the analyzed period. Thus, in 2018 transportation of exported commodities increased by 26 580 thousand UAH compared to 2017. Transportation of imported commodities also increased by 6 164 thousand UAH in 2018 compared to last year.

«GEFCO Ukraine» LLC provides international transportation services in the following main areas: China, Germany, USA, Belgium, France, Poland, Finland, Belarus, but these countries do not complete the list, as «GEFCO Ukraine» LLC operates throughout Europe, Northern America, Latin America, Africa and Asia. So let's look at this in the table 1.8

Table 1.9

Geographical structure of International Transport Services of «GEFCO Ukraine» LLC for 2014- 2018 ths. UAH

Region	2014	%	2015	%	2016	%	2017	%	2018	%
Belarus	1747,95	3	3281,65	5	2654,08	4	3415,02	5	3031,335	3
Germany	4661,20	8	3281,65	5	5308,16	8	4781,03	7	9094,01	9
France	13400,95	23	14439,26	22	14597,44	22	13660,08	20	21219,35	21
Poland	12235,65	21	16408,25	25	15260,96	23	12977,08	19	20208,90	20
China	5826,50	10	7219,63	11	9289,28	14	6147,04	9	12125,34	12
USA	4661,20	8	5906,97	9	4644,64	7	8196,05	12	10104,45	10
Belgium	4078,55	7	3281,65	5	3981,12	6	2732,02	4	7073,12	7
Finland	3495,90	6	1968,99	3	3317,60	5	6147,04	9	5052,23	5
Others	8157,10	14	9844,95	15	7298,72	11	10245,06	15	13135,79	13
Total	58265	100	65633	100	66352	100	68300,4	100	101044,5	100

Region	Absolute Deviation, ths. UAH				Relative Deviation, %			
	2015/ 2014	2016/ 2015	2017/ 2016	2018/ 2017	2015/ 2014	2016/ 2015	2017/ 2016	2018/ 2017
Belarus	1533,70	-627,57	760,94	-383,69	87,74	-19,12	28,67	-11,24
Germany	-1379,55	2026,51	-527,13	4312,98	-29,60	61,75	-9,93	90,21
France	1038,31	158,18	-937,36	7559,27	7,75	1,10	-6,42	55,34
Poland	4172,60	-1147,29	-2283,88	7231,82	34,10	-6,99	-14,97	55,73
China	1393,13	2069,65	-3142,24	5978,30	23,91	28,67	-33,83	97,26
USA	1245,77	-1262,33	3551,41	1908,40	26,73	-21,37	76,46	23,28
Belgium	-796,90	699,47	-1249,10	4341,10	-19,54	21,31	-31,38	158,90
Finland	-1526,91	1348,61	2829,44	-1094,81	-43,68	68,49	85,29	-17,81
Others	1687,85	-2546,23	2946,34	2890,73	20,69	-25,86	40,37	28,22
Total	7368,00	719,00	1948,40	32744,10	12,65	1,10	2,94	47,94

Source: Calculated by author based on LLC “GEFCO Ukraine `s” data

As can be seen from the table, the most active destinations for international transport are France, USA, China and Germany.

The commodity structure of export and import of international transport operations of «GEFCO Ukraine» LLC can be seen in table 2.3.

Table 1.10

The Commodity structure of International Transport Services of «GEFCO Ukraine» LLC for 2014-2018 ths. UAH depending on the manufacturing industry)

Branch	2014	%	2015	%	2016	%	2017	%	2018	%
Construction equipment	4078,55	7	5906,97	9	1327,04	2	1366,01	2	6062,67	6
Agricultural machinery	5826,50	10	5250,64	8	5971,68	9	8196,05	12	11114,90	11
Automotive industry	10487,70	18	10501,28	16	12606,88	19	15026,09	22	14146,23	14
Agro products	11070,35	19	13782,93	21	13270,40	20	15709,09	23	22229,79	22
Heavy and oversized equipment	8739,75	15	11813,94	18	11943,36	18	14343,08	21	26271,57	26
Aerospace equipment	5243,85	9	3281,65	5	3981,12	6	1366,01	2	1010,45	1
Healthcare industry	4661,20	8	6563,30	10	5971,68	9	2732,02	4	3031,34	3
Cosmetic industry	3495,90	6	1968,99	3	2654,08	4	1366,01	2	4041,78	4
Other	4661,20	8	6563,30	10	8625,76	13	8196,05	12	13135,79	13
Total	58265	100	65633	100	66352	100	68300,4	100	101044,5	100

Branch	Absolute Deviation, ths. UAH				Relative Deviation, %			
	2015/ 2014	2016/ 2015	2017/ 2016	2018/ 2017	2015/ 2014	2016/ 2015	2017/ 2016	2018/ 2017
Construction equipment	1828,42	-4539,61	38,99	4656,32	44,83	-76,85	2,85	331,09
Agricultural machinery	-575,86	902,48	2284,97	2676,81	-9,88	17,19	37,14	31,72
Automotive industry	13,58	2488,64	2479,91	-1323,60	0,13	23,70	19,09	-8,56
Agro products	2712,58	-109,33	2499,40	6056,79	24,50	-0,79	18,28	37,45
Heavy and oversized equipment	3074,19	492,30	2460,41	11504,92	35,17	4,17	19,99	77,91
Aerospace equipment	-1962,20	820,43	-2695,73	-395,90	-37,42	25,00	-65,72	-28,15
Healthcare industry	1902,10	-410,18	-3340,42	218,64	40,81	-6,25	-54,29	7,77
Cosmetic industry	-1526,91	765,73	-1328,37	2635,43	-43,68	38,89	-48,57	187,40
Other	1902,10	2324,54	-449,75	4697,70	40,81	35,42	-5,06	55,67
Total	7368	2735	1949,4	30727,1	12,65	4,17	2,85	43,70

Source: Calculated by author based on LLC “GEFCO Ukraine `s” data

From Table 1.10 we can see that during the studied period the largest volume of deliveries is occupied by ready-to-sell cars and components, which are starting to tend to increase transportation, but we see that in 2018 the volume decreased compared to 2017 at 1323,60 thousand UAH, which is quite significant.

Heavy and oversized cargoes also take a significant amount of freight, which during the period under review has been growing rapidly and we can see that in 2018 there was an increase of 11 504, 92 thousand UAH compared to 2017, which is 77.91% growth.

As we can see in Table 1.10, «GEFCO Ukraine» LLC performs transportation of agro products quite successfully, and every year it increases the volume of deliveries and for 2018 occupies 22% of the total volume of transportation. We can also see that compared to 2017, the volume increased by 6056, 79 thousand UAH, which is 37.45%.

According to Table 1.9, France is the most mobile and developed transportation destination . It is in France that the head office of the large GEFCO company is located. During the period under review, it increased its total share of exports and imports among the total, and at the time of 2018 was 21%. But there was a significant increase in volume in 2018 by 50,88%, which is 7155, 87 thousand UAH. Major transports from France are completely ready for sale Reno and Citroen cars, as well as components, because «GEFCO Ukraine» LLC is the main carrier for these brands in Ukraine. Also in the direction of France are transported from Ukraine agricultural products and agricultural machinery. Another example of cooperation is the supply of pipes from the "Nikopol South Pipe Plant" and the service of export of pipes "Dnipropetrovsk Pipe Plant." International shipments of construction machinery from POTAIN from France were also carried out. In December 2018, two wagons were dispatched for the PSA Group plant in Kenitra to Morocco, and it is planned to supply 45 additional wagons during 2019.

After France, Poland is the most active destination for international transportation, accounting for 20% of total shipments between countries in 2018. Examples of international transportation of outsized cargo are deliveries of

compressor equipment to Belarussian companies «REMESA» and «Remcomp», Italian companies «Omi» and «Piano», the German company «Condor». Orders for transportation of imported agricultural machinery from the Polish plants «JAR-MET», «AGROMET», PPHU «BOMET», «Agromech», «AKPIL» are also frequently received.

Transportation from China is less frequent, accounting for 12% of total volume. In general, oversized cargo lines are transported from China.

«GEFCO Ukraine» LLC also provides international transportation in the Asian area. Thus, in 2017, the company serviced the supply of construction equipment to Kazakhstan, in particular, tanks, tanker trailers, components for food packaging equipment.

The company also executed orders from domestic construction companies to deliver road construction and construction equipment from the Chinese concern «XCMG» and «Hawtai».

In addition to various industrial and construction equipment, international transportation of private "overall things" is carried out. Transportation of non-industrial and non-construction cargo is the transportation of large museum exhibits, monuments, memorials and the like.

1.3. Assessment of a transport activity efficiency of the «GEFCO Ukraine» LLC

International freight is the main activity of «GEFCO Ukraine» LLC. With a long and meaningful experience, the company has a wide customer base and well-established relationships that, together with its technical and professional base, create quality transport services for clients' foreign economic activity. «GEFCO Ukraine» LLC is a freight forwarding company that has already formed its own logistics service specifics and has set its own standards for transport and logistics services.

Consider the dynamics of transport activity, depending on the transport used in the table 1.11

Table 1.11

Dynamics of transport activity depending on the type of transport of «GEFCO Ukraine» LLC ths. UAH

Type of transport	2014	2015	2016	2017	2018	Absolute deviation, ths. UAH			
						2015/ 2014	2016/ 2015	2017/ 2016	2018/ 2017
Railway	15935,48	15174,35	19971,95	19527,08	34122,73	-761,13	4797,60	-444,87	14595,64
Truck	18749,68	19414,24	16787,06	17143,40	28545,07	664,56	-2627,19	356,34	11401,67
Shipping	10965,47	16605,15	10019,15	16316,97	21653,84	5639,68	-6586,00	6297,81	5336,87
Air	10604,23	12667,17	16455,30	13625,93	14984,90	2062,94	3788,13	-2829,37	1358,97
River transport	2010,14	1772,09	3118,54	1687,02	1737,97	-238,05	1346,45	-1431,52	50,95
Total	58265	65633	66352	68300,4	101044,5	7368,00	719,00	1948,40	32744,10

Source: Calculated by author based on LLC “GEFCO Ukraine `s” data

According to Table 1.11 and Appendix 1.3, we see that rail and car transportation is used more and then transported by ship, but over the study period we see that all the parts change and are not stable.

«GEFCO Ukraine» LLC uses its own cars and trailers (semi-trailers) to transport cargo of all kinds of products, which comply with the provisions of the International Convention on Road Traffic and the European Agreement concerning the work of crews of vehicles servicing international road transport, safety

requirements movement. They also make extensive use of the capabilities of other carriers to provide the customer with the necessary cargo, in which case «GEFCO Ukraine» LLC acts as an intermediary.

«GEFCO Ukraine» LLC has a specialized rolling stock: 21 tractor units with semi-trailers, of which: 18 standard awnings 86 m3, with a capacity of 20 tons; 5 refrigerators with a capacity of 20 tons. For complex and oversized transportation, except for trawls, special machinery is used: pipelines, timber trucks, truck cranes, car towers, forklifts (forks and fronts), dump trucks, excavators, hydraulic hammers and other equipment. As a rule, most of the trucks are designed to carry goods up to 13.6 m long, up to 2.45 m wide, up to 3.1 m high, and weighing up to 24 tons. Cargoes in excess of these dimensions are oversized.

Oversized cargoes are large oversized, long-hauled, heavy cargoes whose dimensions together with the vehicle exceed the parameters: 1) 4 meters high; 2) 22 meters in length; 3) 2.6 meters wide; 4) by weight of cargo with the vehicle - more than 38 tons.

This type of transportation is a significant logistical service. In addition, it should be noted that large-size cargo is a cargo that, when married to a vehicle, exceeds at least one of the parameters for the size limits specified in the regulatory documents.

Consider the cost of transportation as a function of distance in the Appendix 1.4.

A separate direction of oversized cargo transportation is the transportation of heavy loads, special equipment. Heavy duty cargo is a cargo which, when married to a vehicle, exceeds at least one of the parameters for the permitted maximum mass of rolling stock specified in the regulatory documents. For such cargo are used low-frame trailerscargos carrying several tens of tons. Semi-trailers (low frame trawls) with sliding platform are used for transportation of oversized cargo. Modern modular vehicles with a carrying capacity of hundreds of tons are used for transportation of multi-ton cargoes and cargoes with non-standard sizes (height, length, width).

In order to carry out privileged calculations regarding the cost of transportation, it is necessary to understand the structure of the cost of transportation of each mode of transport. Analysis of the cost of transportation is especially important in commercial calculations, as it provides the ability to search for specific ways to make a profit and increase the efficiency of transport enterprises by reducing costs for individual cost elements or types of work and services

The differences in the cost structure of transportation of different types of transport (Table 1.12) are associated with some differences in the cost structure. As can be seen from the Table 1.12, the main costs of transport (about 40%) are related to wages, fuel and electricity, repairs and depreciation, but the share of each of these cost elements varies by mode of transport. This is a feature of the cost of transport compared to the same indicator in industry, where the share of transport costs is about 20%.

Table 1.12

Cost structure of transport by modes of transport «GEFCO Ukraine» LLC, %

Cost element	The structure of the cost of transportation,%, by mode of transport				
	Railway	Truck	Shipping	River transport	Air
Salary	34,9	37,9	25,2	32,3	39
Including social social needs	10,7	10,2	5	7,8	10,7
Fuel and electricity	14,2	23,2	37,5	18,1	42
Amortization	16,4	1,5	10,5	5,2	2,2
Repair Fund	17,9	3,5	10,1	12,9	9,4
Materials	7,5	5,7	1,7	5,4	1,7
Other	9,1	28,2	15	26,1	5,7

Source: Calculated by author based on LLC “GEFCO Ukraine `s” data

Thus, the most significant part of the costs of air transport falls on wages and fuel (81%), while in rail transport these costs are less than 50%, and the cost of repairs and especially depreciation is higher than in air. The deductions for the social support of their employees (from 5 to 10% or more) are different by type of transport.

The efficiency of transportation systems is determined by the quality of basic and related services, timely execution of all operations, ensuring the requirements for customer service.

The ever-increasing demand for quality transportation requires the development of methods, methods and conditions for their effective implementation. Therefore, the current stage of economic development requires further improvement of the quality of transportation and container services, infrastructure modernization, use of a systematic approach, objective economic laws and more. In recent years, the working conditions and development of transport have been changing due to market reforms and the transition to new methods of modern management of the transport process. However, the problems of improving the efficiency and competitiveness of transportation in market conditions are not well understood.

The main condition for carrying out the transport activity of the enterprise is its efficiency, according to which it is possible to learn how flexible the enterprise is. Businesses often suffer significant losses due to a lack of feasibility study on the effectiveness of export activities, the lack of valuation in the currency of the price, the currency of payment and other monetary and financial terms of the transaction. Determining the efficiency of transport activity determines the degree of interest of the enterprise in entering the world market, allows to justify separate positions on the sale of certain goods.

To analyze the efficiency of transport operations, we use the data in table 1.13, which shows the total costs.

Table 1.13

Dynamics of total costs of International Transport Services «GEFCO Ukraine LLC» 2014-2018

Indicators	Years					Relative Deviation, %			
	2014	2015	2016	2017	2018	2015/ 2014	2016/ 2015	2017/ 2016	2018/ 2017
1. Aggregate income (revenue) transportation, thousand UAH	58265,00	65633,00	66352,00	68300,40	101044,50	112,65	101,10	102,94	147,94
2. Cost of transportation,UAH	54492,75	60924,05	58294,95	58610,47	94904,51	111,80	95,68	100,54	161,92
3. Transportation of exported commodities, thousand, UAH	44281,40	51193,74	52418,08	54640,31	79820,71	115,61	102,39	104,24	146,08
4. Cost transportation of imported commodities, thousand UAH	41959,42	48738,63	46668,37	46888,91	75923,52	116,16	95,75	100,47	161,92
5. Transportation of imported commodities, thousand UAH	13983,60	14439,26	13933,92	13660,09	21223,79	103,26	96,50	98,03	155,37
6. Cost of transportation of imported commodities thousand UAH	12533,33	12185,42	11626,58	11721,57	18981,00	97,22	95,41	100,82	161,93

Source: Calculated by author based on LLC “GEFCO Ukraine `s” data

Analyzing the data in Table 1.13, it should be noted, first of all, that during the last 5 years an active foreign trade balance has been observed at the enterprise, transportation of exported commodities exceeds the transportation of imported commodities. However, with total revenue growth, we are seeing a corresponding increase in costs. But, we can see that at the time of growth of total profit and expenses from 2017 to 2018, the growth transportation of imported commodities expenses increased 61,93 % while the total profit grew by 55,37 %. With transportation of exported commodities a completely similar situation occurred, the cost transportation of exported commodities increased by as much as 61,92 % while the volume transportation of exported commodities s increased by 46,08 %.

Based on the data in Table 1.14, we analyze the dynamics of transport activity efficiency.

Table 1.14

Dynamics of indicators of efficiency and effect of transport activity of «GEFCO Ukraine» LLC 2014-2018

Indicators	Years								
	2014	2015		2016		2017		2018	
	Actually	Actually	Absolute deviation	Actually	Absolute deviation	Actually	Absolute deviation	Actually	Absolute deviation
Effect of transport activity:									
The overall effect of transport activity	3772,25	4708,95	936,70	8057,05	3348,09	9689,93	1632,88	6139,99	-3549,94
Effect from transportation of exported commodities	2321,98	2455,11	133,13	5749,71	3294,59	7751,41	2001,70	3897,19	-3854,21
Effect from transportation of imported commodities	1450,27	2253,84	803,57	2307,34	53,50	1938,52	-368,82	2242,79	304,27
Efficiency of transport activity:									
The overall efficiency of transport activities	6,47	7,17	0,70	12,14	4,97	14,19	2,04	6,08	-8,11
Efficiency transportation of exported commodities	5,24	4,80	-0,45	10,97	6,17	14,19	3,22	4,88	-9,30
Efficiency transportation of imported commodities	10,37	15,61	5,24	16,56	0,95	14,19	-2,37	10,57	-3,62

Source: Calculated by author based on LLC “GEFCO Ukraine `s” data

As can be seen from the calculations, the efficiency transportation of exported commodities during the studied period was more than 1, which indicates that the realization of services is profitable and has a positive value.

We can also see that the effect of transport activity is always positive, but there is a rather large fluctuation in the effect transportation of imported commodities, which is not good enough, but such fluctuation tends to increase.

The increase in these indicators indicates a tendency to increase the volume of sales of transport services abroad in comparison with the volume of sales of

transport services in Ukraine, which in turn signals a greater attractiveness of foreign markets and efforts of the company to attract more foreign exchange resources.

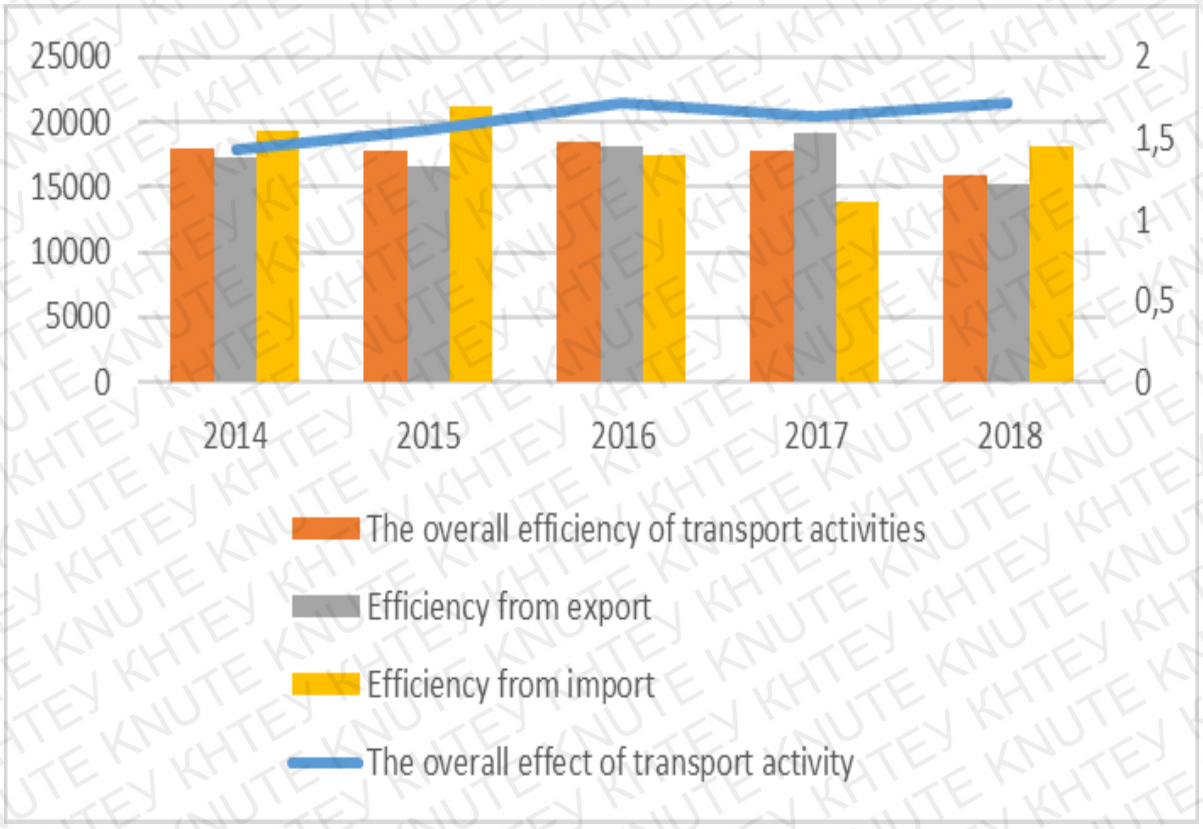


Fig. 1.1. Dynamics efficiency of transport activity of «GEFCO Ukraine» LLC

«GEFCO Ukraine» LLC is an experienced company with its own approach to international freight forwarding services. At the moment, transport service to enterprises has become a whole complex of full freight forwarding and provision of related services. These include:

1. international transportation of consolidated and groupage cargoes;
2. international transportation of complex objects;
3. customs clearance of cargoes abroad;
4. warehouse services
5. accompanied by cargo

6. transportation of cargo

So, as we can see, «GEFCO Ukraine» LLC makes a lot of efforts to meet the needs of its customers every year, increasing its reputation as a successful carrier and thus increasing the volume of transportation.

Conclusions to section 1

«GEFCO Ukraine» LLC is a large international transport company in Ukraine. The advantage of «GEFCO Ukraine» LLC in its extensive experience in international transportation, the availability of state-of-the-art rolling stock, complete with cars and semi-trailers from leading foreign manufacturers and highly qualified personnel.

International transport is an important foreign economic activity. Goods cannot be shipped from one country to another without the use of vehicles; of course, the cost of goods is increasing. International is considered to be a carriage between two or more countries.

Any company, including «GEFCO Ukraine» LLC as an open system, depends on the environment. Environmental factors can be seen as opportunities and threats to the enterprise, their positive or negative impact on the organization will depend on the effectiveness of management and adaptability of the enterprise.

The main risks of «GEFCO Ukraine» LLC are economic (inflation, in particular, rising dollar), political (increasing uncertainty in business). Factors that positively influence the activity of «GEFCO Ukraine» LLC are mainly the attraction of new technologies, the expansion of the range of services, the motivation of work in the company.

«GEFCO Ukraine» LLC generated a positive net financial result in 2018, which amounted to 1919 thousand UAH, which is 10 times more than in the previous years, due to reduced expenses and increased revenues. This is a positive phenomenon that indicates that the company is operating efficiently and can generate profit.

At the enterprise during the analyzed period there is an active foreign trade balance, every year it is actively growing. Transportation of exported commodities increased steadily over the period under review. Thus, in 2018 (preliminary data) transportation of exported commodities will increase by 26,580 thousand UAH

compared to 2017, transportation of imported commodities is also growing by 6164,1 thousand UAH in 2018 (preliminary data) compared to last year.

«GEFCO Ukraine» LLC provides international transportation services in the following main areas: China, Germany, the USA, Belgium, France, Poland, Finland, Belarus, but these countries do not complete the list, as «GEFCO Ukraine» LLC operates throughout Europe, Northern America, Latin America, Africa and Asia. For 2018 France - 21%, Poland - 20%, China - 12%.

In 2018, «GEFCO Ukraine» LLC provides the largest export of transportation services for transportation of heavy and oversized cargo - 26%, agricultural products - 22% and ready-to-eat cars and their components - 14%.

The efficiency transportation of exported and imported commodities of the enterprise fluctuates over the study period, but indicators are much higher than 1, which indicates that the realization of services in the market is profitable.

The share transportation of exported commodities in the amount of income (revenue) from the sale of services is an average of 70,65 % over 5 years. Moreover, it is increasing, albeit at a slow pace. This indicates a tendency to increase the volume of sales of transport services abroad compared to the volume of sales of transport services in Ukraine, which in turn signals the greater attractiveness of foreign markets and the efforts of the company to attract more foreign exchange resources.

«GEFCO Ukraine» LLC is an experienced company with its own approach to international freight forwarding services. At the moment, transport service to enterprises has become a whole complex of full freight forwarding and provision of related services. These include: international transportation of consolidated and groupage cargoes, international transportation of complex objects, customs clearance of goods abroad; warehousing services, cargo support, transportation of cargo.

So, as we can see, «GEFCO Ukraine» LLC makes a lot of efforts to meet the needs of its customers every year, increasing its reputation as a successful carrier and thus increasing the volume of transportation.

SECTION 2 IMPROVEMENT OF TRANSPORT OPERATIONS ORGANISATION OF THE «GEFCO UKRAINE» LLC

2.1 Necessity of improvement of the enterprise's organization mechanism of transport operations.

In order to determine directions for improving the organizational mechanism for organizing transport operations, diagnostics of «GEFCO Ukraine» LLC is required to identify important problems that directly affect its final financial result. The most important problems of «GEFCO Ukraine» LLC are:

- interaction with company's foreign departments;
- non-efficient routing, lack of priority in arranging the route;
- the size of vehicle fleet is not large enough;
- prompt response to force majeure circumstances;
- delivery time;
- efficient distribution of goods between cars;
- analysis of transportation costs.

An important element in the study of existing problems at the transport company is the development of recommendations for their elimination. Therefore, the use of modern specialized tools such as TMS, which will solve existing problems, is offered (table 2.1).

Table 2.1

Problem solving mechanism at «GEFCO Ukraine» LLC based on improving the organizational mechanism for the implementation of transport operations

Problem	Solving tool	Result
1. Interaction with other company's departments	Implementation of a CRM system or description of responsible parties' business processes and deadlines	The software package integrates with any specialized programs (accounting, storage)

Continuation of Table 2.1

2. Non-efficient routing, lack of priority in building routes	Based on an ERP system, automatic planning of optimal trips and automatic development of routes, preparation of supporting documents	The choice of the route by which the "nearest car" drives into the "another's" area; exclusion of extra trips; replacement of the appropriate car in terms of capacity and loading capacity.
	GPS/GPS devices	Providing control of the movement of the vehicle on the route; fulfilment of the schedule and conditions of transportation
3. Vehicle fleet	Installation of the TMS software package	The ability to provide several route models under various optimization conditions (number of cars, time, transportation profitability), an alternative to the choice - selling excess cars or increasing the volume of transportation.
	Expansion of the vehicle fleet	Increased quantity and quality of freight
4. Prompt response to force majeure circumstances;	Adding new adjustments to the program	Receive of new trip sheets
5.Delivery time;	Program's usage of mathematical modelling algorithms	The desirable result, taking into account the traffic capacity of roads, the permissible speed of movement, the time for loading and unloading, waiting at points of delivery
6. Efficient distribution of goods between cars	Usage of the software package	Indicates permissible transportation limits so that a vehicle with minimal overload fulfils the necessary delivery schedule without using an additional car
7. Analysis of transportation costs	Software system TMS	Assessment of profitability of product transportation, implementation of alternative delivery options

Source: compiled by the author

The following is a characterization of these directions in more detail.

To improve the quality and efficiency of transport services at «GEFCO Ukraine» LLC, the implementation of a number of measures is relevant:

- improvement of dispatch service control of the rolling stock on the line based on the implementation of computer technologies and navigation systems;

- improvement of the management structure in road transport;

- improvement of internal production systems for the automobile transport functioning.

Transport logistics is unthinkable without the active use of information technology. At present, new, modern opportunities for controlling and planning freight transportation have appeared. Online transport management provides a unique opportunity to always have accurate and reliable information about the real location and routes of transport. There is an opportunity to compare trip sheets with the real route displayed on the geographic map, with a report on which route points are listed, or with a list of addresses passed. As a result, it can be easily concluded that there is an improper use of vehicles owned by the company (deviation from routes, use of company vehicles for personal purposes), or about theft and damage to cargo and fuel.

As a result of the use of modern technologies of satellite navigation and mobile communications, the system allows real-time tracking of the exact location of objects and personnel, shows the trajectory of movement and compliance with the route, determines the traffic parameters (speed, mileage), and also records fuel consumption and analyses the technical condition of various nodes and aggregates[6].

The main opportunities for the efficient use of the vehicle fleet with the use of a vehicle monitoring system for «GEFCO Ukraine» LLC will be:

- fuel consumption control;
- the exclusion of misuse of transport and irrelevant trips;
- exclusion of mileage additions;
- monitoring of deviations from a given route;
- monitoring of compliance with speed limits;
- reduction of vehicle idle time;
- the ability to inform the driver about traffic jams and diversionary routes;
- rational routing, taking into account traffic jams.

Reducing fuel consumption and monitoring mileage when using a vehicle monitoring system saves money not only due to lower costs for fuel and lubricating

materials, but also due to the costs associated with the maintenance of vehicles. If the mileage is strictly controlled by the monitoring system, then it decreases, which leads to an increase in the period between vehicle inspections, which, accordingly, reduces the cost of operating the vehicle fleet[5].

The exclusion of the mileage additions of the travelled path and the monitoring of cases of deviations from the route considerably affect the real fuel consumption associated with the fulfilment of the assigned task. With consistent and competent administration of these parameters, the overall vehicle operating costs of the enterprise are significantly reduced.

Speed control using a vehicle monitoring system allows for achieving a reduction in fuel consumption by up to 20% only by this parameter. There are many factors that directly or indirectly affect fuel consumption. One of the significant factors is the driving style. Intensive acceleration and braking, driving at high speed lead not only to increased fuel consumption but also to increased rubber wear and extreme strain on engine, transmission and brake system of the car. In addition, by controlling the speed rate, the monitoring system allows for reducing the accident rate. For this, each recorded case of deviation from the set parameters should be recorded by the vehicle monitoring system. Subsequently, in the aggregate of cases, a decision is made to punish or reward the driver.

Factors to improve the quality of transport services and the volume of traffic of «GEFCO Ukraine» LLC during the implementation of the monitoring system will be:

– rational routes;

– monitoring the current location of vehicles online for effective decision-making;

– effective response to both work and emergency situations;

– increasing staff discipline.

The vehicle monitoring system, as a result of a graphical visual display of vehicles and traffic statistics, taking into account both traffic conditions (for

example, traffic jams) and other factors, makes it possible to effectively compose transport routes and quickly respond to emerging situations, both standard and non-standard[8].

The vehicle monitoring system will allow «GEFCO Ukraine» LLC to exchange messages between the dispatcher and the vehicle, which significantly increases the efficiency of solving tasks and increases the safety of both the driver and the cargo. Using SMS messages, the dispatcher of the monitoring system can transmit all the necessary information to the driver, from the statement of the task to the traffic situation. Messages can be sent directly to the driver's phone through the SMS gateway of the monitoring system, this does not require additional equipment costs and reduces the cost of voice and SMS traffic to the control centre.

The personnel, realizing that all its actions are controlled by the vehicle monitoring system, is forced to "self-discipline." The vehicle monitoring system implemented at «GEFCO Ukraine» LLC will lead to a significant reduction in losses associated with inappropriate use of the vehicle (unaccounted trips) and deviations from specified routes, which, in turn, will lead to a reduction in operating costs described above.

Factors to improve the safety of traffic of «GEFCO Ukraine» LLC during the implementation of the monitoring system will be:

– control of the movement and halting points of the vehicle;

– effective control of transport's deviation from given routes;

– control of the vehicle entry into the specified geo-zones and exit from them;

– monitoring the status of vehicle systems and cargo through the installation of additional sensors;

– control of working hours, including continuous driving by one driver;

– the driver can send an SOS alarm message at any time;

– the possibility of two-way communication with the driver.

The development of transport corridors allows logistics operators to dynamically select the available objects that form the transport network according to the relevant criteria, use them rationally in order to minimize transport expenses. At the same time, the following are considered to be complex tasks: searching for the most effective options for the cargo transportation through multimodal messages taking into account business restrictions (the working schedule of objects, delivery time limits, the availability of objects, the traffic capacity of objects, vehicle and rolling-stock characteristics). That is why it is advisable for «GEFCO Ukraine» LLC to introduce a monitoring system based on the TMS.

TMS (Transport management System) is quite a new phenomenon for Ukrainian enterprises. However, the requirements for speed and accuracy of delivery are constantly growing, and many enterprises come to the understanding that TMS in the enterprise is an urgent need and condition for the competitiveness of the business of the manufacturer, distributor, and postal operator.

As a result of the analysis of activities at «GEFCO Ukraine» LLC, it was identified that logistics expenses should be reduced, therefore, the most appropriate is a logistic strategy to reduce general logistic expenses. The main optimization criterion is the budget of «GEFCO Ukraine» LLC, allocated to logistics (optimization criterion is the logistics consumption rate). Since the costs of logistics processes are interrelated, the costs of logistics solutions in retail affect the whole logistics organization, the transportation expenses, storage and processing of cargos, the inventory expenses. The main factor that will affect the logistics system and other subsystems is the information support expenses. Moving from the choice of a research method to the formation of a system-technical model of transport complexes, it is necessary to develop such a system according to which transport flows are one of the interacting subsystems, and the vehicle fleet of the enterprise, whose vehicles can be rented, is another subsystem. In modern business conditions for «GEFCO Ukraine» LLC, the implementation of an automated system that allows solving the following problems is relevant:

– complex registration of applications and contracts for the provision of vehicle services and rental vehicles;

– creation of the transport's schedule of allocations on a constant basis, the formation of trip sheets, the processing of information on trip sheets (vehicles' time on the route, mileage);

– daily accounting of fuel in tanks for each vehicle item, generation of reports and information from the circulation of petroleum products and lubricants;

– daily accounting of settlements with customers and tenants, trip sheet taxation;

– complex accounting of the equipment operation, conducting routine technical inspections and overhaul maintenance;

– introduction of automated accounting of rental equipment and analysis of the terms of its return, which is very important when container units and a various rolling-stock, as well as production equipment, are used for work;

– daily accounting of the work of drivers and workers of repair services, maintaining timesheets.

The analysis of the transport directed software showed that the capabilities of the programs are not limited only to the automation of the trip sheet design, the maintenance of the trip sheet journal, as well as the simplest accounting.

Table 2.2 describes the logistics modelling software, and also shows the payback period of the implemented system and estimated savings due to optimization of processes after implementation.

Table 2.2

Logistic modelling software characteristics

Software	Field of application in logistics, developer, cost, $	Estimated payback period, months	Effect, estimated savings due to optimization of processes after implementation %
ProcessMast	Manufacture; CMS Research, 14 000	12	9.0
Ddact	Manufacture; Deneb Robotics, 13 255	12	4.55
CCTaylor	Manufacture; F&H Simulations, 13 040	20	15.0
A2	Manufacture; Gensym Corp., 13 000	20	11.4

Continuation of Table 2.2

Ethink	Business processes, inventory management; High Performance Systems, 13 000	20	14.0
TMS Logist	Supply, manufacture, retail, warehousing, transportation; Imagine That, 1200	6	24.0
AWitness	Supply, manufacture, warehousing; Lanner Group, 10 990	21	18.0
WMicro	Manufacture; Micro Analysis and Design Inc., 10 845	19	6.0
GPSS/PC	Manufacture, retail; Minuteman Software, 10 025	20	12.25
Qguar TMS	Manufacture, retail, warehousing, transportation; Wolverine Software, Inc., 460	8	32.0
LFactor	Manufacture; PritskerCorp., 8 050	18	9.45
Awcool	Manufacture, retail; PritskerCorp., 8 000	15	10.05
Project	Manufacture, business processes; ProModel Corp., 6 950	15	10.0
Rinkai TMS	Retail, warehousing, transportation; Systems, 500	5	15.95

Source: compiled by the author

Defined components of the logistics information support will allow the company management to choose one of the software, taking into account its cost, payback period and requirements for implementation: TMS Logist, Qguar TMS or Rinkai TMS and optimize its activities in general and storage and transport activities in particular

Thus, such logistic competitive advantages of the enterprise are created:

- optimal choice of counterparties for economic relations (suppliers, creditors, commercial intermediaries, as well as consumers);
- selection of appropriate partners;
- possibility of modelling logistic systems and chains;
- creation of conditions for resource-saving in all economic flows (material, informational, financial, labour);
- combination of economic interests of all participants in logistic systems.

Thus, defined components of the logistics information support will allow the company management to choose one of the software, taking into account its cost, payback period and requirements for implementation: Extend, GPSS/H or Arena

and optimize its activities in general and storage and transport systems in particular.

After studying the market of transport logistics automation programs, the 5 most common and similar in functionality TMS programs were selected for the comparative analysis.

- TMS Logist.UA;
- ABM Rinkai TMS;
- Qguar TMS;
- ITOGO.TMS;
- Ant-logistics.

Software systems were evaluated on the basis of quantitative indicators and expert evaluation using the relative advantage method for logistics enterprises:

1. The number of functions implemented. A quantitative parameter that requires detailed consideration, since it can vary depending on which functions are relevant for the end user (enterprise), i.e. the number of functions "prescribed" in the system can be supplemented or reduced. The results of a comparative analysis of the functionality are systematized and presented by the researchers in the table 2.3.

Table 2.3

Functionality of the studied TMS

Functions	**TMS**				
	ABM Rinkai	**Ant Logistics**	**Qguar TMS**	**ITOGO. TMS**	**Logist.UA**
1. Automatic routing	+	+	+	+	+
2. Consideration of delivery conditions:					
2.1. dimensions and type of the vehicle	+	+	+	+	+
2.2. type of goods, weight, dimensions	+	+	+	+	+
2.3. time windows at delivery points	+	+	+	+	+
2.4. categories of roads, speed limits	-	+	-	-	+
2.5. presence of mandatory delivery points	-	+	+	+	+

Continuation of Table 2.3

2.6. travel in a certain geozone	-	+	-	+	-
3. Determining the loading-unloading order	+	-	+	+	+
4. Delivery point arrival time messages	+	+	+	+	+
5. Online vehicle traffic control	+	+	+	+	+
6. Registration of route movement deviations	+	+	+	+	+
7. Intermodal transport service	-	-	+	-	-
8. ADR service (European Agreement concerning the International Carriage of Dangerous Goods by Road)	-	-	+	-	-
9. Plan-fact analysis	+	+	+	+	+
10. Transportation expenses estimation	+	+	+	+	+
11. POL (fuel and lubricant materials) re-fuelling control	-	-	-	+	+
12. Carbody temperature control	-	-	-	+	+
13. Mobile app	+	+	+	+	+
Total number of functions	**12**	**12**	**14**	**14**	**15**

Source: compiled by the author

According to the data presented above, in TMS of Logist.UA the largest number of functions that are of practical importance for logistics events are implemented. Among the functions of Logist.ua, which are not presented in a number of other software solutions, the possibility of monitoring fueling (POL) and temperature control in the carbody should be noted.

2. Integration with external data. Evaluation criterion on a 10-point scale, taking into account the number of programs with which TMS can exchange data.

3. The maximum number of applications (orders) per day. A quantitative indicator that directly depends on the scale of system deployment.

4. The complexity of implementation. Evaluation criterion on a 10-point scale (the lower the score, the easier the integration with the enterprise system).

5. The complexity of personnel training. Estimated indicator on a 10-point scale.

6. Customer support. Estimated indicator on a 10-point scale. It takes into account indicators of integration with social networks, mail, availability of

response templates and a knowledge base, multilingualism, appointment management, customer self-service, feedback, real-time monitoring and notification of clients.

7. Cost of purchase and implementation.

One of the main indicators of choice, indicated by monetary units. The basis was a monthly tariff for 50 cars (for ABM Rinkai, Ant Logistics, Qguar TMS and Logist.UA) and a basic delivery package (1 server unit and 1 client license) for ITOGO.TMS.

For greater clarity and evaluation of the five selected TMS, the researchers completed the analysis data in a table 2.4.

Table 2.4.

Values of the selection criterion for alternatives

Selection criterion	**ABM Rinkai**	**Ant Logistics**	**Qguar TMS**	**ITOGO.TMS**	**Logist. UA**	**Value of the criterion (max. 10)**
Number of functions	12	12	14	14	15	6
Integration with external data, points (max. 10)	8	7	8	6	8	8
The maximum number of applications per day	1100	1000	1000	1200	1200	7
The complexity of implementation, points (max. 10)	1	1	2	1	1	9
The complexity of personnel training, points (max. 10)	4	4	6	6	5	10
Customer support, points (max. 10)	3	9	8	8	9	8
The purchase price of the corporate version, USD	500	1499	460	3010	1200	10

Source: compiled by the author

The collected data was generated in table 2.5, where the maximum value corresponds to the best choice.

Table 2.5.

The combined weight matrix of alternatives

TMS	Selection criteria							Average value of weighted coefficients
	Number of functions	Integration with external data	The max. number of applications per day	The complexity of implementation	The complexity of personnel training	Customer support	Cost of purchase and implementation	
ABM Rinkai	0.179	0.216	0.185	0.222	0.242	0.081	0.197	0.188857
Ant Logistics	0.179	0.189	0.185	0.222	0.242	0.243	0.006	0.180857
Qguar TMS	0.209	0.216	0.185	0.111	0.161	0.216	0.214	0.187429
ITOGO.TMS	0.209	0.162	0.222	0.222	0.161	0.216	0.033	0.175
Logist.UA	0.214	0.216	0.222	0.222	0.194	0.243	0.491	0.257429

Thus, the TMS Logist.ua is the best TMS option for «GEFCO Ukraine» LLC. The Logist.UA transportation logistics automation program from the SystemGroup development company is favourably highlighted by:

- plenty of functions
- lowest cost of purchase and implementation
- high level of customer support
- wide range of integration possibilities with external customer data
- flexibility of settings in accordance with the company needs.

Also, a significant advantage when choosing TMS for «GEFCO Ukraine» LLC is the presence of such additional functions as POL re-fuelling control (Logist.UA allows for reduction in POL costs by 10-30%) and carbody temperature control (a significant factor during transportation of food products or goods requiring special conditions of transportation) Among the advantages, the short payback period of Logist.UA from 3 to 6 months should be noted.

2.2. Development of improvement measures set of transport operations of the «GEFCO Ukraine» LLC

To effectively develop and improve transport operations on «GEFCO Ukraine» LLC, some ways of improving this subject can be identified, namely:

– adaptation of blockchain technologies;

– use of vehicles with the lowest fuel consumption;

– increasing the accuracy of collecting and picking orders, optimizing these processes;

– development and implementation of measures to optimize travel routes, reducing "idle running";

– use of modern means of communication and navigation, which will ensure the search for the most convenient and economic routes of traffic. Of particular importance are GPS navigator systems, the installation of which will contribute to solving the problems of streamlining traffic;

– calculation of the required vehicle fleet in terms of quantity and carrying capacity, sale of unused vehicles, timely updating of the vehicle fleet;

– economically sound system of cargo rates for customers;

– flexible system of settlements with contractors;

– use of modern personnel motivation systems;

– – the formation of a positive image of the company, as such, which fulfils obligations to customers and partners, is responsible for the timing and quality of services provided, is solvent and reliable.

The problem of finding vehicles and goods for both sides remains relevant, despite the development of Internet technologies. This is what intermediaries use. Having a chain of extra people increases the cost of transportation. In addition, due to the lack of the owner's ability to control the cargo on the way, smuggling and "grey" schemes flourish.

The delivery process is complicated by the interaction between officials, logisticians and forwarders. The situation is aggravated by customs issues and paperwork associated with approval documents and the declaration of goods.

The introduction of a blockchain that can change the work process of transporting goods can solve these problems[12].

The main advantages of blockchain technology for the enterprise «GEFCO Ukraine» LLC are that it[12-16]:

- allows for reducing the cost of logistics;
- excludes the possibility of falsification of data. A document entered once, for example, a bill of lading, a receipt or a certificate of conformity, remains in the system in its original form forever;
- eliminates unnecessary intermediaries;
- prevents the mislabelling of illegal goods and other fraud attempts;
- allows for a substantial reduction of the time for document workflow, quick finding of the transportation link where a mistake was made, and reduction of business costs due to losses.

The purpose of the implementation is to develop software for the formation of a single data field based on blockchain technology. Therefore, the following stages of blockchain implementation at the enterprise «GEFCO Ukraine» LLC are highlighted[12-16]:

- assessment of the possibility of implementing blockchain in the enterprise. At this stage, the following data about the enterprise is required - number of employees, turnover, industry, length of the logistics cycle, number of customers, availability of warranty periods and service conditions. Based on this data, programmers process the received data and calculate the implementation timing of blockchain technologies in the company, its cost, economic efficiency and risks. Based on the received blockchain analysis, the enterprise decides on the need to introduce the technology;

- development of a blockchain system for the enterprise. At this stage, the company can use two options. The first, blockchain algorithms have been

developed for each industry and enterprise size, which can be used for adaptation at the specific organization level. The availability of a ready-made program kernel allows to reduce implementation costs by up to 70% and accelerate the implementation of blockchain technologies. The second is the adaptation of the algorithm by order of the enterprise. In this case, the enterprise provides all the information about the required blockchain system of the platform administration, which further adapts the existing templates for an individual enterprise. The choice of the necessary option is carried out by the enterprise management based on the interests of the management, the specifics of work and the level of information confidentiality;

- blockchain system implementation at the enterprise «GEFCO Ukraine» LLC. At this stage, the system is launched and its effectiveness is evaluated. It is being finalized within the identified deficiencies or opportunities for improvement;

- monitoring the implementation of blockchain technology. An enterprise that implements the blockchain technology can generate a report on the implementation of the blockchain system monthly. Based on this system report, recommendations are formed on improving the blockchain system and its economic feasibility;

- participation of the enterprise in the blockchain community through the generalization of implementation results and the exchange of information with partner companies within the framework of its industry or related fields of activity. The exchange of information allows for the popularisation of the transport company as a logistics leader and attraction of new customers, partners or investors.

Figure 2.1 presents the blockchain technology implementation model at the logistics company «GEFCO Ukraine» LLC

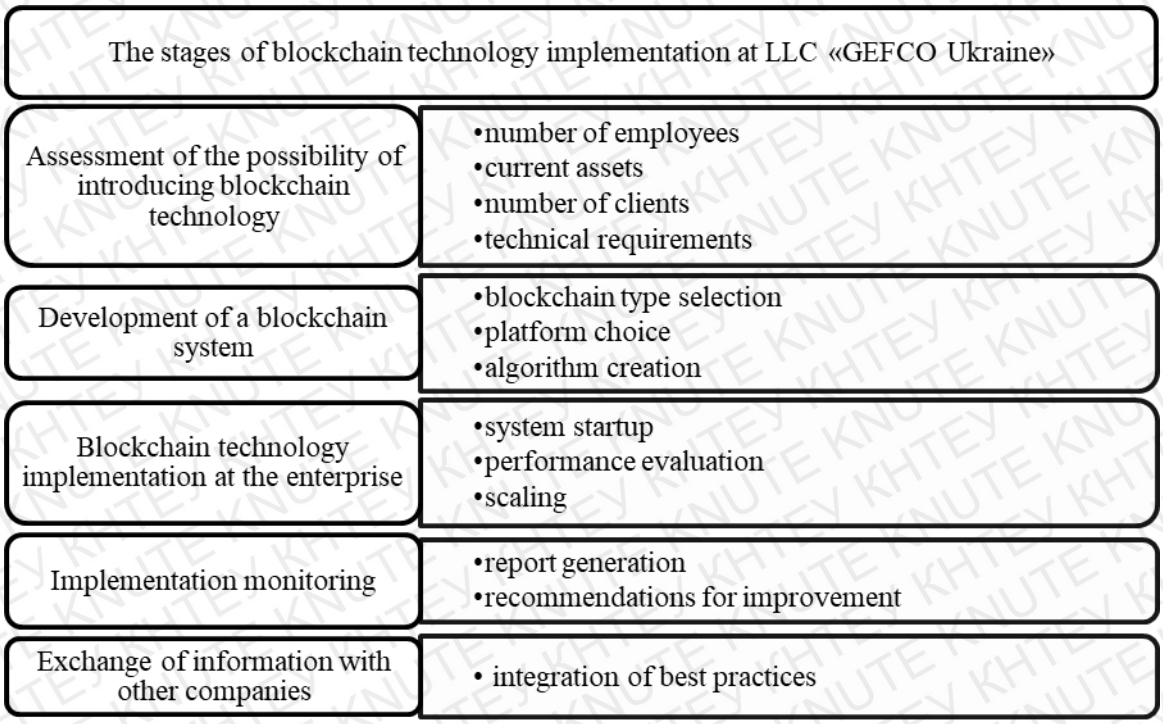


Fig. 2.1. Blockchain technology implementation model at the logistics company «GEFCO Ukraine» LLC

Source: compiled by the author

Implementation of technology in an existing business model of «GEFCO Ukraine» LLC should start with determining the type blockchain. For the benefit of the logistics enterprise, it is better not to use public or private, but a consortium blockchain. These are such blockchains that anyone can connect to view, but a participant can add information or connect his/her node only with the permission of other participants.

Such blockchains are built by organizations in order to increase customers or consumers trust in services or the enterprise as a whole. Here, reliability is also achieved by the presence of trust between participants and the same consensus algorithms. To facilitate the technology implementation, ready-made solutions should be used one of those in the field of blockchain is “Exonum” - it is a “framework” that allows you to create decentralized databases based on blockchain technology.

The "framework" allows to create blockchains in which all nodes generating blocks are known in advance. As a result, blockchain administrators can update

transaction processing rules. "Exonum" is a flexible tool that allows to create individual blockchain projects and implement turnkey solutions with minimal costs. In order to ensure the reliability of the stored data and the minimum stability of the system, at least 4 validator nodes that are integrated into a peer-to-peer network must function simultaneously. In the standard “Exonum” configuration, the number of validators is from 4 to 20. Full nodes can run on computers running “UNIX”-based operating systems. Preference should be given to "Linux", the latest stable distributions: "Ubuntu", "CentOs". Preliminary analysis suggests that complete nodes can also be deployed on «AltLinux» distributions. Minimum requirements for the computer on which the full node will work:

- processor with a frequency of more than 2GHz;
- RAM: 4 GB;
- hard drive: 50 GB;
- A permanent connection to the Internet with a speed of more than 1 Mb/s.

The client node can be launched on a computer running the operating systems Windows, Linux, Mac, and does not require significant computing resources.

Additionally, to improve the management system of international freight forwarding operations the «GEFCO Ukraine» LLC is proposed to introduce a GPS tracking and fuel control system according to consumption standards - the FMS-T system (developed by «Omnicomm Technologies» LLC), which is an effective mean of reducing the service expenses, and therefore of lowering prices for enterprise services. This equipment option is mostly used on gasoline-fuelled vehicles since it is either impractically expensive or technically impossible to install a fuel level sender assembly.

This is the best option for controlling the fuel consumption of trucks, drop-side truck tractors, tippers, and long-haul tractors. This option is mostly used on gasoline-fuelled vehicles since it is either impractically expensive or technically impossible to install a fuel level sender assembly. A GPS tracker measures the vehicle mileage with high accuracy, the GPS tracking system monitors the set rate.

If necessary, the GPS system allows for the usage of a more complex form of calculating the standard using the weight of the cargo, the presence and weight of the trailer, the markup percentage.

A GPS tracker measures the vehicle mileage with high accuracy, the GPS tracking system monitors the set rate. If necessary, the GPS system allows one to use a more complex form of calculating the standard using the weight of the cargo, the presence and weight of the trailer, the markup percentage. The characteristics of the proposed equipment are presented in table 2.6.

Table 2.6

FMS-T equipment information

Title	Description
FMS-T	Fuel control system, a computer that is installed in the vehicle and regulates the optimal engine power
Provider	LLC “”Evrozviazok"
Cost per unit	From 3800 to 6000 UAH
Cost of software for logistics expenses management	4500 UAH
General model of operation of FMS-T system [35]	

Source: compiled by the author

A GPS terminal is installed on each vehicle. The terminal calculates its coordinates, driving speed, altitude above the sea level, and driving direction using GPS satellite signals. In addition, the terminal can receive information from various car’s systems and sensors. This may be data on the state of ignition, fuel level in tanks or whether the system of various special mechanisms is active or not, etc.

The goals that can be achieved when installing the FMS-T system at «GEFCO Ukraine» LLC at [33-35]:

– control of drivers. The main functions of the GPS vehicle monitoring system and the main argument in favor of its implementation at enterprises is control of drivers. For owners of vehicles, control of drivers is the most important factor in the conduct of HR policy, which ensures the prevention of additions and similar phenomena that entail economic losses. As a result of using the control of drivers provided by the GPS vehicle monitoring system «FMS-T», the level of discipline increases because there is a tight accounting of mileage and control of fuel consumption, and any fraud with them becomes impossible;

– saving of monetary resources. Preventing driver's additions on mileage and fuel prevents exceeding the speed limit (which reduces fuel consumption and increases car resources), prevents irrelevant trips that are carried out at the expense of the enterprise;

– the ability to increase vehicle efficiency through improved logistics;

– obtaining statistics for records and effective planning;

– improving the vehicle, driver and cargo safety.

So, to improve the management system for international transport operations, the management of «GEFCO Ukraine» LLC is invited to introduce a GPS tracking and fuel control system at standard costs - the FMS-T system, which will make it possible to control drivers, save money, the ability to increase vehicle efficiency through improved logistics, and to improve the vehicle, driver and cargo safety.

At present, «GEFCO Ukraine» LLC needs improvement and optimization of the vehicle fleet structure, taking into account the types of transport services provided.

At present, the company needs to expand the vehicle base by purchasing 5 new vehicles, namely, Axor Mercedes, which possesses almost all qualities for the optimal transportation of cargos: low expenses level during the entire running time,

high payload and reliability combined with excellent manoeuvrability, high comfort of movement and safety.

The purchase of three cars is economically reasonable because today the company has a development strategy, according to which it expands the international zone for the provision of logistics services, therefore, it needs to expand the vehicle base.

Axor trucks deliver top-notch performance in areas where weight carrying capacity is critical. Purposeful reduction of own weight, economical and reliable six-cylinder in-line engine, long-term service intervals, Euro-5 compliant engines, available as an option, the Mercedes PowerShift transfer gearbox, and the integrated Stop and Go system offered as an option for Axor trucks further increase trucks' cost-efficiency. For example, the low fuel consumption provided by reliable and efficient engines with the BlueTec® system complying with the Euro 5 toxicity standard. Alternatively, through the system of automatic start and shutdown of the engine, further reducing fuel consumption and reducing the emission of carbon dioxide gases. In addition, optimally selected gearbox and axles provide a transmission configuration that is suitable for almost all tasks in the transportation field.

Adaptive cruise control, which provides a constant speed, is delivered to order, which not only reduces the load but also allows to save fuel. Weight reduction improves cost-effectiveness: high payload economical and reliable BlueTec® engines with long service intervals provide the new Axor with first-class performance.

The optional Telligent ® automatic gearshift system and Mercedes PowerShift automated gearbox, as well as the economic package options, further enhance Axor's cost-effectiveness. As for comfort and safety, the new Axor also meets the highest requirements, equipped in accordance with the performed tasks, excellent ease of control, as well as numerous components that take into account the driver's needs from the new multifunction steering wheel in basic configuration to comfortable berths and optional driving dynamics control systems, as well as

auxiliary control systems that increase the level of comfort and safety during the ride. Less curb weight means more carrying capacity which means the increase in profitability. Long-haul trucks and Axor trucks with a float body combine a small curb weight with high power, good adaptability to a specific task and a high level of repair ability. Axor works on the principle: weigh less, carry more.

Thus, the expansion of the vehicle fleet of «GEFCO Ukraine» LLC will allow the company, in accordance with the chosen development strategy, to increase the volume of export of transportation services.

Also, an increase in the vehicle fleet leads not only to a change in the value of fixed assets but also to an increase in the profit from transportation, which will lead to an increase in the net profit of the enterprise.

2.3. Projected changes in the foreign economic activity of «GEFCO Ukraine» LLC on the basis of the proposed measures

Assessing the impact of the implementation of the proposed measures on the change in the foreign economic activity of the enterprise is carried out on the basis of:

– cost estimates for the implementation of these measures;

– determination of the projected indicators transportation activity of the enterprise;

– analysis of the performance indicators transportation of exported commodities and their impact on the growth of enterprise income.

In the previous paragraphs of the work, the following measures of the organization improvement of transport operations were identified:

1. Implementation of TMS Logist.UA. The cost of implementing this system at «GEFCO Ukraine» LLC will amount to 1,200 USD, or 30 thousand UAH.

2. Introduction of blockchain technology based on the implementation of an information system by the T-Mining blockchain-startup, worth 10 thousand USD, or 250 thousand UAH.

3. The introduction of a GPS tracking system based on FMS-T, with the number of 55 units, will amount to 275.0 thousand UAH (55*5000);

4. Buying 5 Axor Mercedes cars on lease, the company will need to spend 50 thousand USD for one car (i.e. 250 thousand USD for 5). Cars will be purchased from an official site representative - http://www.mercedes-benz.ua/trucks/models/axor.html on lease for 7 years, therefore leasing expenses are analyzed for the period from 2020 to 2026.

Table 2.7

Calculation of costs and return on the implementation of the proposed activities at «GEFCO Ukraine» LLC for 2020-2024, ths. UAH

	2020	2021	2022	2023	2024	Total
Net income	3149.87	3464.86	3811.34	4192.48	4611.73	19230.28
Total costs of implementation of the proposed measures	962.83	1010.97	1061.52	1114.60	1170.33	5320.24
Costs of logistics activities	1368.53	1332.79	1344.70	1453.92	1470.60	6970.53
Financial result before tax	818.51	1121.10	1405.12	1623.97	1970.80	6939.51
Profit tax	147.33	201.80	252.92	292.31	354.74	1249.11
Net profit	671.18	919.30	1152.20	1331.65	1616.06	5690.40
The first lease contribution (10% of the cost of cars)	625.00	0.00	0.00	0.00	0.00	625.00
Discount coefficient (20% pa)	1.00	0.83	0.69	0.58	0.48	
Discounted investments	625.00	0.00	0.00	0.00	0.00	625.00
Project cash flow	671.18	919.30	1152.20	1331.65	1616.06	5690.40
DCF (discounted cash flow), thousand UAH	671.18	766.09	800.14	770.63	779.35	3787.39
NPV (net present value)(at a discount of 20% pa), thousand UAH						3162.39
IR (income ratio) , %						36.06
IRR (internal rate of return), %						35.56
Project payback period, years						4.40

Source: calculated by the author

Thus, the implementation of the proposed measures is economically feasible, because the payback period will be 4.4 years, and NPV (net present value) will amount to 3162.39 million UAH.

The next step is to determinate of the projected indicators of transportation activity of the enterprise when implementing the proposed activities.

Prediction will be carried out for 2020-2022 by the least quadra method using a polynomial of 2 degree.

$$y = 3334x^2 - 14180x + 55376$$

$$R^2 = 0{,}9893$$

The obtained data is reflected in figure 2.2.

Based on the data obtained, it can be concluded that during 2020-2022 the export of the enterprise will have a dynamics of growth of 32.1% in 2020, by

34.2% according to the results of 2021 and by 34.5% according to the results of 2022.

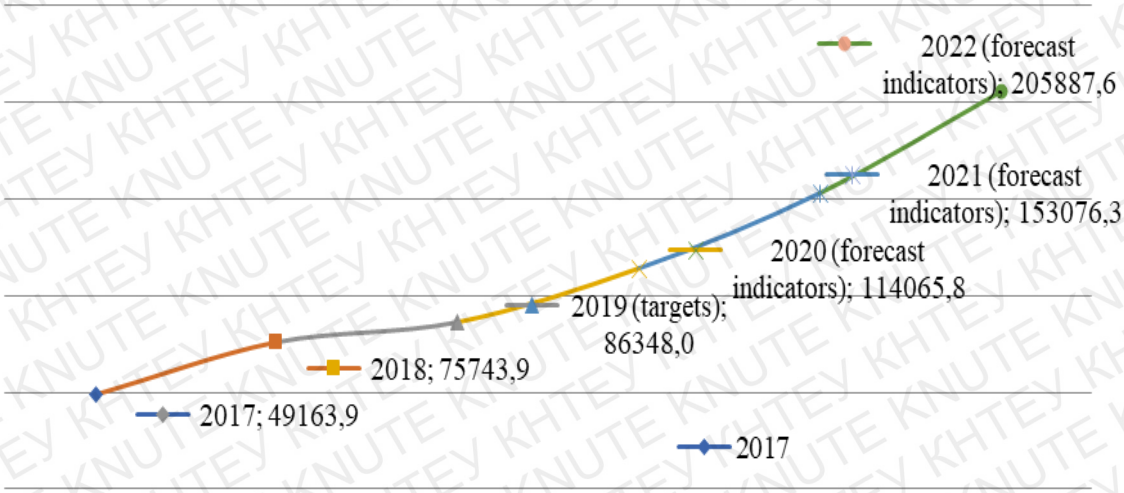


Fig. 2.2. The projected volume transportation of exported commodities «GEFCO Ukraine» LLC in 2020-2022

Source: calculated by the author

The next step determines the projected indicators of the transportation of exported commodities of the enterprise (fig. 2.3).

$$y = 827{,}52x^2 - 4039x + 23681$$

$$R^2 = 0{,}9957$$

Thus, the introduction of the proposed measures will allow the company to increase the volume transportation of imported commodities services by 26.5% in 2020, by 24% in 2021 tons by 20.36% in 2022.

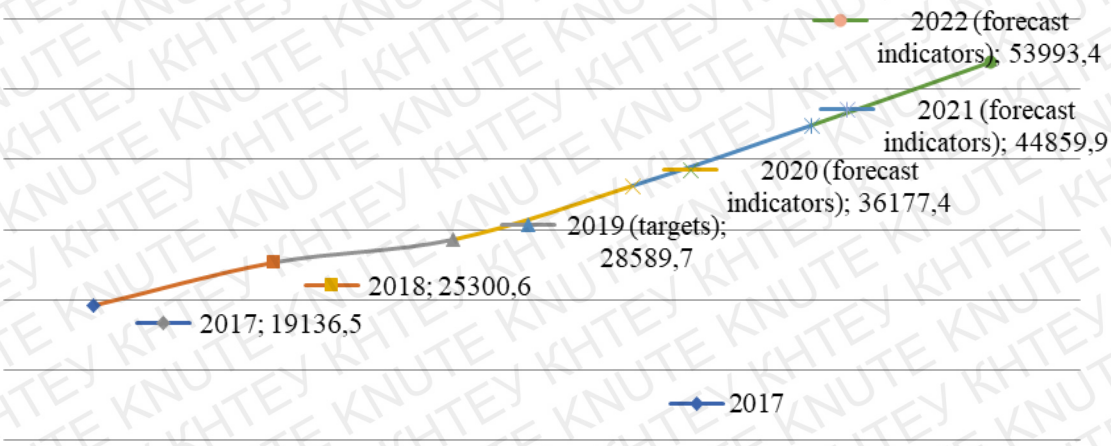


Fig. 2.3. The projected volume transportation of imported commodities of «GEFCO Ukraine» LLC in 2020-2022

Source: calculated by the author

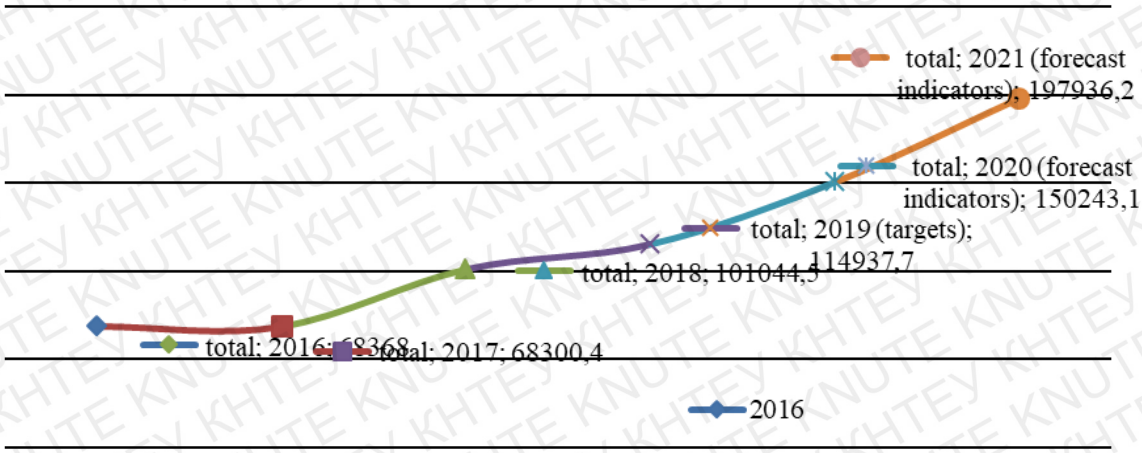
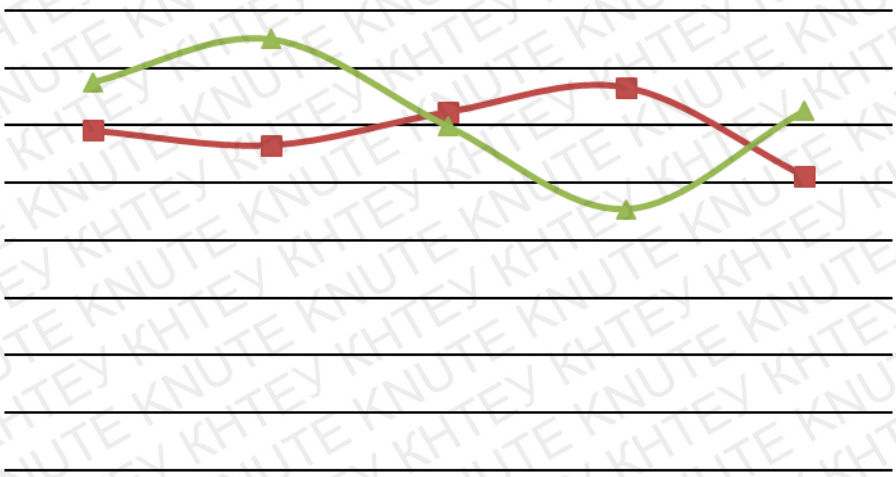


Fig. 2.4. The total projected volume of international transport services «GEFCO Ukraine» LLC in 2020-2022

Source: calculated by the author

The total volume international transport services in 2020 will increase by 30.7% to a level of 150.243 million UAH, in 2021 by 31.7% to 197.936 million UAH, and in 2022 - by 31.3% to a level of 259.881 million UAH



	2018	2019 (targets)	2020 (forecast indicators)	2021 (forecast indicators)	2022 (forecast indicators)
Efficiency of exports	1,38	1,33	1,45	1,53	1,22
Efficiency of import	1,55	1,70	1,40	1,11	1,45

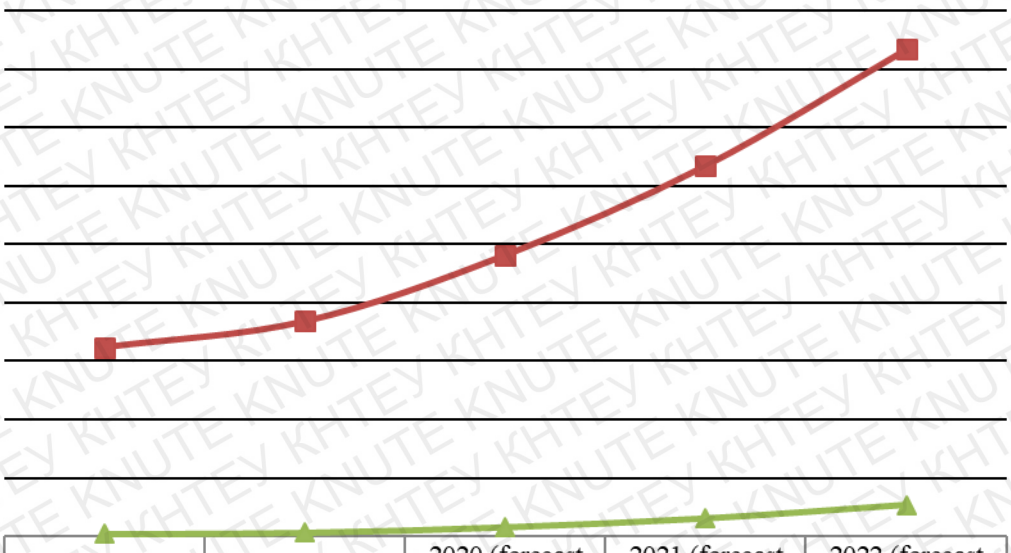
Fig. 2.5. The projected indicators of efficiency of international transport services «GEFCO Ukraine» LLC in 2020-2022

Source: calculated by the author

The growth international transport services , as well as the optimization of their costs, will lead to an increase in their efficiency (fig. 2.5).

Thus, efficiency from transportation of exported commodities will increase to 1.59 in 2020, 1.63 in 2021 and 1.74 in 2022. Import efficiency will be slightly lower and will be 1.27 in 2020, 1.31 in 2021 and 1.36 in 2022.

Improving the organizational mechanism for managing transport operations will reduce the cost of transport operations, as well as better control the terms and conditions of contracts. All this will significantly reduce the cost of carrying out transport operations of the enterprise, which, in turn, will lead to an increase in net profit of the enterprise.



	2018	2019 (targets)	2020 (forecast indicators)	2021 (forecast indicators)	2022 (forecast indicators)
Net income	161955	184223	240811	317254	416540
Net profit	1929	3097	7851	15472	27001

Fig. 2.6. The projected volume of net income and net profit of «GEFCO Ukraine» LLC in 2020-2022, thousand UAH

Source: calculated by the author

Thus, due to the implementation of the proposed measures, the company's net income in 2020 will increase by 30.72% to 240.811 million UAH. In 2021, net income growth will be 31.74% and the figure will amount to 317.254 million UAH. As a result of 2020, net income will increase to 416.540 million UAH.

Table 2.8

The projected volume of financial results of «GEFCO Ukraine» LLC in 2020-2022, thousand UAH

	2018	targets	forecast indicators			Growth rate, %			
		2019	2020	2021	2022	2019/ 2018	2020/ 2019	2021/ 2020	2022/ 2021
Net income	161955	184223	240811	317254	416540	13,75	30,72	31,74	31,30
Cost of sales	150666	164527	217305	283334	364255	9,20	32,08	30,39	28,56
Gross: profit	11289	19696	23506	33920	52285	74,47	19,34	44,30	54,14
Other operating income	14775	16807	20431	26627	32528	13,75	21,57	30,33	22,16
Administrative expenses	10453	13360	15543	19453	24465	27,81	16,34	25,16	25,77
Selling expenses	423	462	610	795	1023	9,20	32,08	30,39	28,56

Continuation of Table 2.8

Other operating expenses	7548	11001	8911	9598	11853	45,74	-18,99	7,71	23,49
Financial results from operating activities	7640	11681	18874	30701	47473	52,89	61,58	62,66	54,63
Other financial income	47	56	75	81	93	19,15	33,93	8,00	14,81
Other income	1955	1781	2524	3067	4077	-8,88	41,70	21,52	32,93
Financial expenses	6947	9238	10714	13147	15986	32,98	15,98	22,71	21,59
Other expenses	80	85	115	128	134	6,03	35,26	11,39	4,85
Financial results before tax:	2615	4195	10644	20574	35523	60,41	153,73	93,30	72,66
Loss (Income) from tax on profit	686	1097	2792	5101	8522	59,96	154,44	82,70	67,06
Net profit	1929	3097	7851	15472	27001	60,57	153,48	97,06	74,51

Source: calculated by the author

Net profit in 2020 will amount to 7,851 million UAH, and in 2021 it will increase by 97.06% and amount to 15,472 million UAH. As a result of 2022, net income will increase to 27.001 million UAH.

Thus, the introduction of these measures will allow «GEFCO Ukraine» LLC to increase the volume of export and import of transport services annually, which will lead to an increase in the net income of the enterprise, and a decrease in the expenses for their implementation will lead to a significant increase in the net profit of the enterprise during 2020-2022.

Conclusions to section 2

Based on the study, following conclusions can be drawn:

– to improve the quality and efficiency of international transport services at «GEFCO Ukraine» LLC, the implementation of a number of measures is relevant: improvement of dispatch service control of the rolling stock on the line based on the implementation of computer technologies and navigation systems; improvement of the management structure in road transport; improvement of internal production systems for the automobile transport functioning. The main opportunities for the efficient use of the vehicle fleet with the use of a vehicle monitoring system for «GEFCO Ukraine» LLC will be: fuel consumption control; the exclusion of misuse of transport and irrelevant trips; exclusion of mileage additions; monitoring of deviations from a given route; monitoring of compliance with speed limits; reduction of vehicle idle time; the ability to inform the driver about traffic jams and diversionary routes; rational routing, taking into account traffic jams. Reducing fuel consumption and monitoring mileage when using a vehicle monitoring system saves money not only due to lower costs for fuel and lubricating materials, but also due to the costs associated with the maintenance of vehicles. If the mileage is strictly controlled by the monitoring system, then it decreases, which leads to an increase in the period between vehicle inspections, which, accordingly, reduces the cost of operating the vehicle fleet;

– to effectively develop and improve transport operations on «GEFCO Ukraine» LLC, some ways of improving this subject can be identified, namely: adaptation of blockchain technologies; use of vehicles with the lowest fuel consumption; increasing the accuracy of collecting and picking orders, optimizing these processes; development and implementation of measures to optimize travel routes, reducing “idle running”; use of modern means of communication and navigation, which will ensure the search for the most convenient and economic routes of traffic. Of particular importance are GPS navigator systems, the

installation of which will contribute to solving the problems of streamlining traffic; calculation of the required vehicle fleet in terms of quantity and carrying capacity, sale of unused vehicles, timely updating of the vehicle fleet; economically sound system of cargo rates for customers; flexible system of settlements with contractors; use of modern personnel motivation systems; the formation of a positive image of the company, as such, which fulfils obligations to customers and partners, is responsible for the timing and quality of services provided, is solvent and reliable. Additionally, to improve the management system of international freight forwarding operations the «GEFCO Ukraine» LLC is proposed to introduce a GPS tracking and fuel control system according to consumption standards - the FMS-T system (developed by «Omnicomm Technologies» LLC), which is an effective means of reducing the service expenses, and therefore of lowering prices for enterprise services. This equipment option is mostly used on gasoline-fuelled vehicles since it is either impractically expensive or technically impossible to install a fuel level sender assembly. The expansion of the vehicle fleet of «GEFCO Ukraine» LLC will allow the company, in accordance with the chosen development strategy, to increase the volume of export of transportation services. Also, an increase in the vehicle fleet leads not only to a change in the value of fixed assets but also to an increase in the profit from transportation, which will lead to an increase in the net profit of the Enterprise;

– the implementation of the proposed measures is economically feasible, because the payback period will be 4.4 years, and NPV (net present value) will amount to 3162.39 million UAH. Based on the data obtained, it can be concluded that during 2020-2022 the export of the enterprise will have a dynamics of growth of 32.1% in 2020, by 34.2% according to the results of 2021 and by 34.5% according to the results of 2022. The introduction of the proposed measures will allow the company to increase the volume of imports of transport services by 26.5% in 2020, by 24% in 2021 tons by 20.36% in 2022. The total volume of exports and imports of transport services in 2020 will increase by 30.7% to a level of 150.243 million UAH, in 2021 by 31.7% to 197.936 million UAH, and in 2022 -

by 31.3% to a level of 259.881 million UAH. Due to the implementation of the proposed measures, the company's net income in 2020 will increase by 30.72% to 240.811 million UAH. In 2021, net income growth will be 31.74% and the figure will amount to 317.254 million UAH. As a result of 2020, net income will increase to 416.540 million UAH. Net profit in 2020 will amount to 7,851 million UAH, and in 2021 it will increase by 97.06% and amount to 15,472 million UAH. As a result of 2022, net income will increase to 27.001 million UAH.

CONCLUSION

Based on the study, following conclusions can be drawn.

It is established, that the results of the analysis of the financial documents of the enterprise show that in recent years there has been an increase in the volume of activity of the enterprise. In particular, net income tended to increase, in 2018 its volume amounted to 161955 thousand UAH, which is by 15129 thousand UAH. since in 2014 the company worked on contracts that were concluded in 2013. With the growth of net profit during the study period, there was a proportional increase in cost, which did not allow to receive more profit from the work performed. The liquidity, solvency indicators figures indicate a significant financial soundness in the enterprise. In particular, fluctuations in the coverage ratio were observed, but they remained within acceptable limits, the coverage ratio within 1.68 - 2.5, and the quick liquidity ratio - 1.53-2.28. However, the absolute liquidity ratio at the moment of 2017 decreased from 0.26 to 0.83, this decrease is negative for the enterprise. Also, fluctuations in net working capital should stimulate the development of new strategies and plans, as at the moment of 2014 this figure amounted to 25129 thousand UAH, and in 2015 it decreased to 8511 thousand UAH and continued to fluctuate in this range. The dynamics of solvency indicators of «GEFCO Ukraine» LLC was also downward. In particular, during the period under review, there was a sharp decrease in the ratio of working capital stock and the coefficient on the maneuverability of own capital, indicating a lack of liquid assets and increasing dependence on external sources of financing. At the same time, the ratio of autonomy and financing are now within the normal range, as equity still outweighs debt.

It is defined, that Exports of transport services increased steadily over the analyzed period. Thus, in 2018 the transportation of exported commodities increased by 26 580 thousand UAH Compared to 2017. Transportation of imported commodities also increased by 6 164 thousand UAH in 2018 compared to last year. «GEFCO Ukraine» LLC provides international transportation services in the

following main areas: China, Germany, USA, Belgium, France, Poland, Finland, Belarus, but these countries do not complete the list, as «GEFCO Ukraine» LLC operates throughout Europe, Northern America, Latin America, Africa and Asia. During the studied period the largest volume of deliveries is occupied by ready-to-sell cars and components, which are starting to tend to increase transportation, but we see that in 2018 the volume decreased compared to 2017 at 1323,60 thousand UAH, which is quite significant. Heavy and oversized cargoes also take a significant amount of freight, which during the period under review has been growing rapidly and we can see that in 2018 there was an increase of 11 504, 92 thousand UAH compared to 2017, which is 77.91% growth. As we can see in Table 2.3, «GEFCO Ukraine» LLC performs transportation of agro products quite successfully, and every year it increases the volume of deliveries and for 2018 occupies 22% of the total volume of transportation. We can also see that compared to 2017, the volume increased by 6056,79 thousand UAH, which is 37.45%.

It is established, that during the last 5 years an active foreign trade balance has been observed at the enterprise, transportation of exported commodities exceeds the transportation of imported commodities. the share o transportation of exported commodities in the amount of income (revenue) from the sale of services is an average of 70,65 % over 5 years. Moreover, it is increasing, albeit at a slow pace. This indicates a tendency to increase the volume of sales of transport services abroad compared to the volume of sales of transport services in Ukraine, which in turn signals the greater attractiveness of foreign markets and the efforts of the company to attract more foreign exchange resources. The share transportation of imported commodities in the structure of the cost of services provided averaged 30.1% over the 5 years. This indicator indicates an increasing trend in the orientation of the company to transportation of exported commodities. This policy allows the company to expand the scope of services, to improve the range of services, to reduce costs. The efficiency from transportation of exported commodities during the studied period was more than 1, which indicates that the realization of services is profitable and has a positive value.

It is defined, that «GEFCO Ukraine» LLC is an experienced company with its own approach to international freight forwarding services. At the moment, transport service to enterprises has become a whole complex of full freight forwarding and provision of related services. These include: international transportation of consolidated and groupage cargoes; international transportation of complex objects; customs clearance of cargoes abroad; warehouse services; accompanied by cargo; transportation of cargo. So, as we can see, «GEFCO Ukraine» LLC makes a lot of efforts to meet the needs of its customers every year, increasing its reputation as a successful carrier and thus increasing the volume of transportation.

It is established, that to improve the quality and efficiency of transport services at «GEFCO Ukraine» LLC, the implementation of a number of measures is relevant: improvement of dispatch service control of the rolling stock on the line based on the implementation of computer technologies and navigation systems; improvement of the management structure in road transport; improvement of internal production systems for the automobile transport functioning. The main opportunities for the efficient use of the vehicle fleet with the use of a vehicle monitoring system for «GEFCO Ukraine» LLC will be: fuel consumption control; the exclusion of misuse of transport and irrelevant trips; exclusion of mileage additions; monitoring of deviations from a given route; monitoring of compliance with speed limits; reduction of vehicle idle time; the ability to inform the driver about traffic jams and diversionary routes; rational routing, taking into account traffic jams. Reducing fuel consumption and monitoring mileage when using a vehicle monitoring system saves money not only due to lower costs for fuel and lubricating materials, but also due to the costs associated with the maintenance of vehicles. If the mileage is strictly controlled by the monitoring system, then it decreases, which leads to an increase in the period between vehicle inspections, which, accordingly, reduces the cost of operating the vehicle fleet.

It is defined, that to effectively develop and improve transport operations on «GEFCO Ukraine» LLC, some ways of improving this subject can be identified,

namely: adaptation of blockchain technologies; use of vehicles with the lowest fuel consumption; increasing the accuracy of collecting and picking orders, optimizing these processes; development and implementation of measures to optimize travel routes, reducing "idle running"; use of modern means of communication and navigation, which will ensure the search for the most convenient and economic routes of traffic. Of particular importance are GPS navigator systems, the installation of which will contribute to solving the problems of streamlining traffic; calculation of the required vehicle fleet in terms of quantity and carrying capacity, sale of unused vehicles, timely updating of the vehicle fleet; economically sound system of cargo rates for customers; flexible system of settlements with contractors; use of modern personnel motivation systems; the formation of a positive image of the company, as such, which fulfils obligations to customers and partners, is responsible for the timing and quality of services provided, is solvent and reliable. Additionally, to improve the management system of international freight forwarding operations the «GEFCO Ukraine» LLC is proposed to introduce a GPS tracking and fuel control system according to consumption standards - the FMS-T system (developed by «Omnicomm Technologies» LLC), which is an effective means of reducing the service expenses, and therefore of lowering prices for enterprise services. This equipment option is mostly used on gasoline-fuelled vehicles since it is either impractically expensive or technically impossible to install a fuel level sender assembly. The expansion of the vehicle fleet of «GEFCO Ukraine» LLC will allow the company, in accordance with the chosen development strategy, to increase the volume of export of transportation services. Also, an increase in the vehicle fleet leads not only to a change in the value of fixed assets but also to an increase in the profit from transportation, which will lead to an increase in the net profit of the enterprise.

It is defined, that the implementation of the proposed measures is economically feasible, because the payback period will be 4.4 years, and NPV (net present value) will amount to 3162.39 million UAH. Based on the data obtained, it

can be concluded that during 2020-2022 the commodity will be transported for export of the enterprise will have a dynamics of growth of 32.1% in 2020, by 34.2% according to the results of 2021 and by 34.5% according to the results of 2022. The introduction of the proposed measures will allow the company to increase the volume of the commodity will be transported for import by 26.5% in 2020, by 24% in 2021 tons by 20.36% in 2022. The total volume of international transport services in 2020 will increase by 30.7% to a level of 150.243 million UAH, in 2021 by 31.7% to 197.936 million UAH, and in 2022 - by 31.3% to a level of 259.881 million UAH. Due to the implementation of the proposed measures, the company's net income in 2020 will increase by 30.72% to 240.811 million UAH. In 2021, net income growth will be 31.74% and the figure will amount to 317.254 million UAH. As a result of 2020, net income will increase to 416.540 million UAH. Net profit in 2020 will amount to 7,851 million UAH, and in 2021 it will increase by 97.06% and amount to 15,472 million UAH. As a result of 2022, net income will increase to 27.001 million UAH.

REFERENCES

1. Apiary D.V., Grinko T.V. Factors of increasing the efficiency of the enterprise [Electronic resource]. - Access mode: http://confcontact.com/2014_04_25_ekonomika_i_menedgment/tom4/48_Paseka.htm

2. Guzhva V.M. Information systems and technologies in enterprises: textbook. allowance / V.N. Guzhva. - M.: Finance, 2014 .-- 400 p.

3. The official website of the research company TNS - https://tns-ua.com/

4. The official website of Eurosvyaz LLC - http://avtotracker.com.ua

5. Hunting V. Improving the efficiency of international transport management / V. Hunting // Galitsky Economic Bulletin. - 2014. - No. 1. - S. 35-41.

6. Panchuk A.V. Improving the quality management system of transport services / V. Panchuk // Global and national problems of the economy. - 2017. - No. 19. - S. 626-630.

7. Pasechnik A. M. Analysis of problems and directions for improving international freight transportation / A.N. Ser. : Technical science. - 2010. - No. 2. - S. 56-62.

8. Improving the management of international traffic / Vitaliy Okhota // Galitsky Economic Bulletin - Ternopil: TNTU, 2014.- Volume 44. - No. 1. - P. 35-41

9. Fedorko I. P. European guidelines for the quality of transport and logistics services [/ I. P. Fedorko // Development of management and management methods in transport. - 2015. - Issue. 1. - S. 49-62.

10. What is blockchain? We will tell in simple words [Electronic resource]. - Access mode: https://coinspot.io/beginners/ chto-takoe-blokchejn.

11. Potapchuk G. 2017 is the year of the blockchain in the world. Just in technology and its application in the school / G. Potapchuk [Electronic resource]. - Access mode: http://my-trade-group.com/index.php/mneniya/item/9251

12. Blockchain technology - what is it in simple words [Electronic resource]. - Access mode: http://real-investment.ru/finansovaja_gramotnost/blokchejn_blockchain_chto_ehto_takoe_prostymi_slovami

13. Boyuk E. Maersk implements blockchain to expedite the delivery of goods / E. Boyuk [Electronic resource]. - Access mode: http://logist.today/2017/03/14/maersk- implements- blockchain- to- speed up-to/.

14. The port of Antwerp is testing the blockchain in logistics [Electronic resource]. - Access mode: http://freebitcoins.pp.ua/portantverpen-testiruet-blokchejn-v-logistike/.

15. Saveliev I.E. Blockchain technology and its application / I.E. Saveliev // Applied Informatics / Journal of applied informatics. - 2016. - T. 11. - No. 6 (66).Antonopous, A. Mastering Bitcoin: Programming the Open Blockchain, OReilly Media, Kaliforniya, USA.

16. Vin'ya, P. and Keysi, M. (2017), Epokha kryptovalyut. Yak bitkony i blokcheyn zminyuyut' svitovyy ekonomichnyy poryadok, Pan Books Limited, N'yu-York, USA.

17. Kodi, I. (2017), Blockchain Innovative and Modern Financial Framework that will revolutionize the Next Digital Economy with Blockchain Technology, United Computer Geeks, N'yuYork, USA.

18. LeKavaliyer, D. (2017), The Rule of Logistics: Walmart and the Architecture of Fulfillment, Univ Of Minnesota Press, Minesota, USA.

19. Lourens, T. (2017), Blockchain For Dummies, For Dummies, N'yu-Dzhersi, USA.

20. Muhayar, V. (2016), The Business Blockchain: Promise, Practice, and Application of the Next Internet Technology, Wiley Online Library, Kaliforniya, USA.

21. Block Street (2015), “Bitcoin: A Peer-to-Peer Electronic Cash System“, available at: https://blockstreet.info/news/2015-08-11/ original-satoshi-nakamoto-bitcoin-white-paper-32769.

22. Popper, N. (2017), Digital Gold: Bitcoin and the Inside Story of the Misfits and Millionaires Trying to Reinvent Money, Harper Paperbacks, N’yu-York, USA

23. Sarkar, S. (2017), The Supply Chain Revolution: Innovative Sourcing and Logistics for a Fiercely Competitive World, AMACOM, N’yu-York, USA.

24. Svon, M. (2015), Blockchain: Blueprint for a New Economy, O’Reilly Media, Kaliforniya, USA.

25. Skiner, K. (2016), ValueWeb: How Fintech Firms are Using Bitcoin Blockchain and Mobile Technologies to Create the Internet of Value, Marshall Cavendish International, Sinhapur, Singapore.

26. Teypkott, A. and Tapskott, A. (2016), Blockchain Revolution, Random House LLC, N’yu-York, USA.

27. Uottenkhofer, R. (2016) The Science of the Blockchain, Inverted Forest Publishing, N’yu-York, USA.

28. FB2 Club (2014), “Bitcoin. Bil’she nizh hroshi”, available at: http://www.fb2club.ru/informatika/bitcoin/.

29. Kharris, T. (2016), Bitcoin: Mastering Bitcoin & Cyptocurrency for Beginners, Independent Publishing Platform, N’yu-York, USA.

30. GPS tracking unit [Electronic resource]. - Access mode: http: //www.gps.ru.net/monitoring1

31. GPS monitoring of public transport. [Electronic resource]. - Access mode: http://servicegps.com/84-gps-monitoring-kommunalnogo-transporta/

32. Mashood Mukhtar, "GPS based Advanced Vehicle Tracking and Vehicle Control System", I.J. Intelligent Systems and Applications, 2015, 03, 1-12 Published Online February 2015 in MECS [Electronic resource]. - Access Mode :: http://www.mecs-press.org/.

33. Teletrack - a system of satellite GPS navigation. [Electronic resource]. - Access mode: http://autovision.com.ua/teletrack-sistema-spytnikovoi-gps-navigaciimonitoringa-i-i-dispetcherizacii-transporta.htm

34. How GPS System Works? [Electronic resource]. - Access mode: https: //www.elprocus.com/how-gpssystem-works/

35. Ray, J., D. Crump, & M. Chin (2007). New Global Positioning System reference station in Brazil, GPS Solutions.

36. The Global Positioning System, Public Safety & Disaster Relief [Electronic resource]. - Access Mode: http://www.gps.gov/applications/safety

37. The Global Positioning System, Aviation [Electronic resource]. - Access Mode: http://www.gps.gov/applications/aviation

38. GPS vehicle monitoring system. [Electronic resource]. - Access mode: http://www.benishgps.com/en/products/sputnikovaya_sistema_monitoringa_transport a /

39. Daugherty, P.J., Richey, R.G., Genchev, S.E., Chen, H., (2015) “Reverse logistics: superior performance through focused resource commitments to information technology”

APPENDICES

Appendix 1.1

Structure of Assets on «GEFCO Ukraine» LLC in 2014-2018, %

№	Assets	As of 31.12					Absolute deviation				Relative deviation,%			
		2014	2015	2016	2017	2018	2014/ 2015	2015/ 2016	2016/ 2017	2017/ 2018	2014/ 2015	2015/ 2016	2016/ 2017	2017/ 2018
1	Non-current assets:													
1	Intangible assets	0,04	0,00	0,00	0,00	0,12	-0,04	0,00	0,00	0,12	0,09	0,00	0,00	0,00
1.1	Original value	0,29	0,27	0,32	0,33	0,26	-0,02	0,05	0,01	-0,07	0,93	1,18	1,04	0,00
1.2	Amortization	-0,25	-0,27	-0,32	-0,33	-0,14	-0,02	-0,05	-0,01	0,19	1,07	1,19	1,04	0,00
2	Incomplete capital investment	0,00	0,00	0,00	0,00	5,71	0,00	0,00	0,00	5,71	0,00	0,00	0,00	0,00
3	Fixed assets	69,36	62,16	54,44	40,13	47,81	-7,20	-7,72	-14,31	7,68	0,90	0,88	0,74	1,19
3.1	Original value	181,35	163,73	194,09	192,67	183,17	-17,62	30,36	-1,41	0,00	0,90	1,19	0,99	0,95
3.2	Depreciation of fixed assets	-111,99	-101,56	-139,65	-152,54	-135,36	10,43	-38,08	-12,89	0,00	0,91	1,37	1,09	0,89
4	Deferred tax assets	0,00	4,01	5,07	5,28	0,00	4,01	1,06	0,21	-5,28	0,00	1,26	1,04	0,00
5	Total non-current assets:	69,40	66,17	59,51	45,41	53,64	-3,23	-6,67	-14,09	8,23	0,95	0,90	0,76	1,18
	Current assets:													
6	Stocks	2,29	2,66	5,21	6,49	4,18	0,37	2,55	1,28	-2,32	1,16	1,96	1,25	0,64
6.1	Inventories	1,73	2,21	4,20	5,21	3,38	0,48	1,99	1,01	-1,83	1,28	1,90	1,24	0,65
6.2	Unfinished production	0,12	0,03	0,15	0,16	0,31	-0,09	0,12	0,02	0,15	0,25	4,78	1,12	1,89
6.3	Goods	0,45	0,43	0,87	1,12	0,48	-0,02	0,44	0,25	-0,64	0,95	2,03	1,29	0,43
7	Accounts receivable for goods and services	14,00	18,91	21,24	27,26	25,75	4,91	2,33	6,01	-1,51	1,35	1,12	1,28	0,94
8	Accounts receivable by budget	7,01	5,70	5,49	5,46	6,80	-1,30	-0,22	-0,03	1,34	0,81	0,96	1,00	1,25
9	Income tax	1,88	0,40	1,18	1,01	0,00	-1,49	0,78	-0,18	-1,01	0,21	2,98	0,85	0,00
10	Other Current Accounts Receivables	2,39	1,47	1,87	4,04	3,95	-0,92	0,40	2,17	-0,09	0,62	1,27	2,16	0,98
11	Cash and cash equivalents	1,39	2,25	4,30	2,32	2,45	0,85	2,05	-1,98	0,13	1,61	1,91	0,54	1,06
12	Future spending costs	3,21	2,66	1,96	8,66	2,92	-0,55	-0,70	6,71	-5,74	0,83	0,74	4,43	0,34
13	Other current assets	0,31	0,17	0,42	0,35	0,32	-0,14	0,25	-0,07	-0,04	0,56	2,46	0,83	0,90
14	Total current assets	30,60	33,83	40,49	54,59	46,36	3,23	6,67	14,09	-8,23	1,11	1,20	1,35	0,85
15	Total assets	100,00	100,00	100,00	100,00	100,00								

Appendix 1.2

Structure of Liabilities on «GEFCO Ukraine» LLC in 2014-2018, %

№	Liabilities	As of 31.12					Absolute deviation				Relative deviation,%			
		2014	2015	2016	2017	2018	2014/2015	2015/2016	2016/2017	2017/2018	2014/2015	2015/2016	2016/2017	2017/2018
1	Net Equity: Share capital	2,06	1,92	2,26	2,35	1,97	-0,14	0,34	0,09	-0,38	0,93	1,18	1,04	0,84
2	Additional capital	1,78	1,66	1,95	2,03	1,78	-0,12	0,29	0,08	-0,25	0,93	1,18	1,04	0,88
4	Reserve capital	0,51	0,48	0,56	0,59	0,51	-0,04	0,08	0,02	-0,07	0,93	1,18	1,04	0,88
5	Retained earnings (uncovered loss) Long-term liabilities	47,60	44,53	52,51	54,89	46,61	-3,07	7,98	2,37	-8,28	0,94	1,18	1,05	0,85
6	Total Net Equity	51,87	48,50	57,19	59,76	50,88	-3,36	8,69	2,57	-8,88	0,94	1,18	1,04	0,85
7	Other long-term liabilities	30,49	33,99	26,65	12,54	24,90	3,50	-7,34	-14,12	12,36	1,11	0,78	0,47	1,99
8	Total long-term liabilities	30,49	33,99	26,65	12,54	24,90	3,50	-7,34	-14,12	12,36	1,11	0,78	0,47	1,99
9	Current accounts payable:													
9.1	Long-term liabilities	0,00	0,00	0,00	0,00	2,10	0,00	0,00	0,00	2,10	0,00	0,00	0,00	0,00
9.2	For goods, work, services	11,11	10,82	8,63	17,30	9,81	-0,29	-2,20	8,67	-7,49	0,97	0,80	2,01	0,57
9.3	According to calculations with the budget	0,39	0,67	0,77	1,42	1,73	0,28	0,10	0,65	0,31	1,71	1,14	1,85	1,22
9.4	Including tax	0,00	0,00	0,00	0,00	0,51	0,00	0,00	0,00	0,51	0,00	0,00	0,00	0,00
9.5	From insurance	1,06	1,55	1,28	1,44	1,21	0,49	-0,27	0,15	-0,23	1,47	0,83	1,12	0,84
9.6	From wages	2,23	1,78	2,52	3,05	3,68	-0,45	0,74	0,53	0,64	0,80	1,42	1,21	1,21
9.7	According to the calculations with participants	0,08	0,08	0,11	0,12	0,10	0,00	0,03	0,02	-0,02	0,98	1,32	1,17	0,84
10	Current security	0,00	0,00	0,00	0,26	5,97	0,00	0,00	0,26	5,72	0,00	0,00	0,00	23,32
11	Other current commitments	2,76	2,60	2,86	4,12	2,86	-0,16	0,26	1,26	-1,26	0,94	1,10	1,44	0,69
12	Total Current Liabilities	17,64	17,51	16,16	27,71	27,48	-0,13	-1,35	11,55	-0,23	0,99	0,92	1,71	0,99
13	Balance	100,00	100,00	100,00	100,00	100,00	0,00	0,00	0,00	0,00	1,00	1,00	1,00	1,00

Appendix 1.3

The structure of the volume of transport activity, depending on the type of transport «GEFCO Ukraine» LLC , %

Type of transport	2014	2015	2016	2017	2018	Absolute Deviation, ths. UAH				Relative Deviation, %			
						2015/ 2014	2016/ 2015	2017/ 2016	2018/ 2017	2015/ 2014	2016/ 2015	2017/ 2016	2018/ 2017
Railway	27,35	23,12	30,10	28,59	33,77	-4,23	6,98	-1,51	5,18	84,53	130,19	94,98	118,12
Truck	32,18	29,58	25,30	25,10	28,25	-2,60	-4,28	-0,20	3,15	91,92	85,53	99,21	112,55
Shipping	18,82	25,30	15,10	23,89	21,43	6,48	-10,20	8,79	-2,46	134,43	59,68	158,21	89,70
Air	18,20	19,30	24,80	19,95	14,83	1,10	5,50	-4,85	-5,12	106,04	128,50	80,44	74,34
River transport	3,45	2,70	4,70	2,47	1,72	-0,75	2,00	-2,23	-0,75	78,26	174,07	52,55	69,64
Total	100	100	100	100	100								

Appendix 1.4

Cost of transportation of goods by motor transport for 1 km «Gefco Ukraine» LLC

Conditions	On the territory of Ukraine		Outside the territory of Ukraine	
	UAH per 1 km	hour delay, UAH	UAH per 1 km	hour delay, UAH
Motor transport with a loading capacity from 6 to 8 tons	12	150	-	-
Motor transport with a loading capacity of 10 tons	16	160	-	-
Motor transport with a loading capacity of 15 tons	20	180	35	220
Motor transport with a loading capacity of 25 tons	25	220	40	230

Appendix 1.5

Conditions for calculating the profitability of a transport operation,

«Gefco Ukraine» LLC

Date	outside Ukraine	in Ukraine	Total
Distance, km	1249	1065	2314
Daytime	5	5	10
Avg. the price of fuel	1,42 EUR	31,80 UAH	
Quantity of fuel, l.	486,92	387,39	874,31
Direct costs:			
Salary			5000
Premium	155EUR		4495
Fuel consumption	691,42EUR	12319,00 UAH	29 673,50
Customs costs	95,10EUR	98,5 UAH	2856,4 UAH
TIR carnet, insurance	0	357	357 UAH
Ecology, washing	15,2EUR	25,3	466,1 UAH
Leasing			1860 UAH
Insurance			3340,4 UAH
TOTAL			48048,4 UAH
PROFIT			30252 UAH

Langendreer (Germany) - Kharkiv.

Freight - 2700 EUR = 78300 UAH

According to the NBU rate on the day of the trip 1 EUR = 29 UAH.