Kyiv National University of Trade and Economics

Department of International Management

FINAL QUALIFYING PAPER

on the topic:

Logistics strategy of the enterprise subject of foreign economic activity

on the basis of "ZAMMLER UKRAINE" LLC

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speciality 073 "Management"

specialisation "Management of foreign economic activity"

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Kyiv 2020

Kyiv National University of Trade and Economics

Faculty _____FMTP_____

Department _____ International Management_____

Specialty _____ Management _____

Specialization ___ Management of foreign economic activity __

Approved by

Head of the Department_____

_____

on _____, ____, 20___

Task

for a final qualifying paper (project)

_____Yelisieiev Vadym_____

(student's last name, first name)

1. Topic of a final qualifying paper (project)

_____Logistic strategy of enterprise subject of foreign economic activity_____

Approved by the Rector's order from _____, ___, 20___, No. _____

2. Term of submitting by a student his/her terminated paper (project)

_____

3. Initial data of the final qualifying paper (project)

Purpose of the paper (project)

Development of a set of measurs to evaluate and analyse the logistic strategy of an enterprise subject of foreigng economic activity

Object of the research

peculiarities of specific logisitc strategies implemented by enterprise subject of foreign economic activity

Subject of the research

theoretical and practical principles of functioning of the logistic strategy of an enterprise subject of foreign economic activity

4. Consultants of the research and titles of subsections which were consulted:

Section	Consultant (last name and initials)	Date and signature	
		The task given	The task fulfilled

5. Contents of a final qualifying paper (project) (list of all the sections and subsections)

INTRODUCTION

SECTION 1 ANALYSIS OF "ZAMMLER UKRAINE" LLC LOGISTICS STRATEGY

1.1 Analysis of financial and economic performance

1.2 Features of strategy of foreign economic activity

1.3 Logistical efficiency evaluation

Conclusions to Section 1

SECTION 2 WAYS TO IMPROVE LOGISTICS STRATEGY OF "ZAMMLER UKRAINE" LLC

2.1 Substantiation of problems and threats for development in the organization of logistic activities of ""ZAMMLER UKRAINE" LLC

2.2 Development of a set of measures to optimize the logistics strategy of "ZAMMLER Ukraine" LLC

2.3 Forecasting the change in the efficiency of "ZAMMLER UKRAINE" LLC as a result of the implementation of the proposed measures

Conclusions to Section 2CONCLUSIONS AND RECOMMENDATIONS

REFERENCES

APPENDICES

6. Time schedule of the paper (project)

No.	Stages of a final qualifying paper (project)	Terms of a final qualifying paper (project)	
		de jure	de facto
1	Approval of the plan of a final qualifying paper (project) with scientific adviser		

2	Submission of scientific article to scientific adviser		
3	Submission of scientific article to the responsible editor of the collection of articles		
4	Submission of the first section to the scientific adviser		
5	Submission of the second section to the scientific adviser		
6	Submission of a final qualifying paper (project) to the scientific adviser		
7	Pre-Defence		
8	Submission of a final qualifying paper (project) to the Head of Department		
9	Submission of a final qualifying paper (project) to the Dean of the faculty on International trade and law		
10	Peer review of a final qualifying paper (project)		
11	Defence of a final qualifying paper (project)		

7. Date of receiving the task _____, ____, 20___.

8. Scientific adviser of the final qualifying paper (project)

_____ A. A. Olijnyk

(last name, initials, signature)

9. Head of the project team

(Manager of the educational program)

_____

(last name, initials, signature)

10. The task received by the student

_____

(last name, initials, signature)

11. Resume of a scientific adviser of a final qualifying paper (project)

The relevance of the topic is due to the significant role of logistics strategy of the enterprise. An efficient logistics system allows to reduce costs, increase profitability and financial stability of the enterprise. The novelty of the final qualification work is in the development of recommendations for improving the organization of warehousing and transport activities of the enterprise. The content of the final qualification work shows that the author has analyzed a significant number of literature sources on the optimization of logistics activities in enterprises. The completed final qualification work fully corresponds to the chosen topic. The author sufficiently substantiated the choice of subject, object and aim of the research. The paper presents thorough conclusions and proposals for improving the logistics strategy of the enterprise. The final qualifying work is accompanied by diagrams, tables, graphs, calculations and meets the established requirements. The implementation of the proposed measures for the implementation of Lean technologies at the company LLC "Zammler Ukraine" will increase the efficiency of logistics operations, reduce costs and generally improve the condition and dynamics of financial performance of the company.

In general, the content of the work corresponds to the topic, all the information presented in the work is reliable. There are no fundamental remarks.

The final qualifying work meets the requirements and deserves a positive assessment.

Scientific adviser of a final qualifying paper (project)

_____

(last name, initials, signature)

Note about preliminary paper (project) defence

_____

(last name, initials, signature)

12. Resume about a final qualifying paper (project)

A final qualifying paper (project) of the student

_____

(last name, initials)

can be admitted to defence in the Examination Board.

Head of the project team

(Manager of the educational program)

_____

(last name, initials, signature)

Head of the Department

_____

(last name, initials, signature)

_____, _____, 20__ .

Анотація

В роботі розглянуто принципи роботи ТОВ "ЗАММЛЕР Україна", проаналізовано фінансові результати діяльності, визначено ключові тенденції, сильні та слабкі сторони організації. Було запропоновано способи підвищення ефективності діяльності та збільшення прибутковості організації, а також вирахувано приблизний ефект цих змін і доцільність їх впровадження.

In this work we have analyzed the principles of work of "ZAMMLER UKRAINE" LLC, as well as the financial results of activity, the key tendencies, strong and weak sides of the organization are defined. Ways to increase the efficiency and profitability of the organization were proposed, as well as the approximate effect of these changes and the feasibility of their implementation.

ABSTRACT

Thesis on the topic: "Optimization of warehouse logistics of the enterprise" contains 67 pages, 12 tables, 1 picture, 4 appendices. The list of links includes 22 items.

The purpose of the work is to gain a deeper understanding of theoretical principles of managing logistic strategy and to develop practical recommendations for improving overall performance of "ZAMMLER Ukraine" LLC .

The object of study is the peculiarities of realisation of logistics strategy of the enterprise in the implementation of foreign economic activity.

The subject of research is identification of problems and ways to improve the logistics strategy of the enterprise-subject of foreign economic activity.

Research base - LLC "ZAMMLER UKRAINE" 04116, Kyiv, Proviantska Street, building 3

Research methods - are method of logical generalizations, abstract-logical method, grouping methods. To obtain analytical information we used data from statistical reports, accounting data of the enterprise. To select and justify the directions of development for the enterprise we used: the method of comparison, to select the best logistic system. Statistical analysis of enterprise performance indicators provided an opportunity to identify problematic issues of organization of logistical activities of the enterprise.

Results of work. Based on the results of the study, a project for the implementation of a Lean system at the enterprise was developed. The economic effect of the implementation of the proposed measures is to save maintenance costs and reduce depreciation costs. The result for the company is to optimize interaction with customers and improve the quality of warehousing services.

Recommendations for the use of work results. The results of the study can be used by enterprise increase the efficiency of warehousing.

The results of research implementation. The proposals developed in the thesis were presented for consideration to the management of ZAMMLER

UKRAINE LLC, where the possibility of their practical application was recognized.

Key words: warehouse logistics, optimization, efficiency, warehousing, quality of service

Contents

INTRODUCTION

Relevance of the research topic. Today enterprises working with foreign markets have to deal with constant changes in market structure, increased globalisation of national economies and growing competition. With the latest pandemics the instability grows even more. In order to keep its position in such environment the company must obtain competitive advantages that will boost its overall performance. It is commonly believed that the most important capacities the company should have to stay ahead of its competitors are flexibility and minimal time of reaction to changes on the market. This can be achieved through vide network of suppliers and contractors, flexible supply chains with a quick time of response, reliable informational sources which can provide complete and certain data about our operational activity, qualitative risk-management infrastructure that insures company of financial and reputational loses in case of force majeure.

All of the above is part of logistics strategy of the enterprise. A well thought logistic strategy is a key factor in achieving dominance on the market, especially in modern world where critical events that drastically change the way of doing business happen on a daily basis. Though such field of activity as logistics is rather young a lot of researchers have already studied it and developed valuable principles which are used by the practitioners. From the most well-known scientists we can reference: J. Christian Femerling, Till Becker, Oliver Jeken, Achim Gelessus, J.S. Arlbjórn, A. Haldórsson, J. Barney, D.J. Bowersox, D.J Closs, C.W. Craighead. However logistics still remains a growing industry and faces new challenges, therefore we can conclude that the problem of forming an efficient logistics system in modern conditions is extremely relevant and requires further research.

The purpose of the research is to gain a deeper understanding of theoretical principles of managing logistic strategy and to develop practical recommendations for improving overall performance of "ZAMMLER Ukraine" LLC .

According to the aim of research we formulate a **set of tasks** we need to solve:

- characterise overall performance and economic state of "ZAMMLER UKRAINE" LLC ;
- study the efficiency of foreign economic strategy of the company
- analyze the economic essence of logistics activities of the enterprise;
- find the reserves for potential growth
- develop directions of optimization of logistics system;
- analyze potential influence of proposed changes on the enterprise.

Object of research: Peculiarities of realisation of logistics strategy of the enterprise in the implementation of foreign economic activity.

Subject of research: identification of problems and ways to improve the logistics strategy of the enterprise-subject of foreign economic activity.

Research methods used in this work are method of logical generalizations, abstract-logical method, grouping methods. To obtain analytical information we used data from statistical reports, accounting data of the enterprise. To select and justify the directions of development for the enterprise we used: the method of comparison, to select the best logistic system. Statistical analysis of enterprise performance indicators provided an opportunity to identify problematic issues of organization of logistical activities of the enterprise.

Theoretical and informational basis of the study is the statistical and financial data obtained for the company as well as the works of leading foreign and Ukrainian scientists on the field of logistics.

SECTION 1 "ANALYSIS OF "ZAMMLER UKRAINE" LLC LOGISTICS STRATEGY"

1.1 Analysis of financial and economic performance

"ZAMMLER UKRAINE" LLC is a Ukrainian 3PL operator which provides a wide range of services, including but not limited to:

- air cargo transportation;
- sea container transportation;
- road freight (regional and international);
- transportation of dangerous and oversized cargo;
- cargo consolidation;
- towing and forwarding in ports;
- certification and insurance;
- search for producers by target markets;
- organization of business tours;
- manufacturer's inspection;
- customs brokerage services;
- warehouse storage;
- export-import services

The "ZAMMLER UKRAINE" LLC group includes 4 companies, which are represented by 12 offices. Located in Europe (Ukraine, Poland) and Asia (China, Kazakhstan):

- "ZAMMLER UKRAINE LLC;
- "ZAMMLER WAREHOUSE LLC;
- Ningbo "ZAMMLER Trading Co. LTD;
- ZAMMLER POLSKA Sp. z o.o;
- ZAMMLER KAZAKHSTAN LLP.

ZAMMLER group have confirmed the high quality of delivered services and business process management, receiving certificates of compliance with international standards ISO 9001: 2015, ISO 14001: 2015, OHSAS 18001:

2007.Economic activity is carried out on the basis of the Statut. Business procedures are regulated by the Constitution of Ukraine, the Commercial Code, laws of Ukraine, regulations of the President of Ukraine and the Cabinet of Ministers of Ukraine, regulations of other public authorities and local governments and other legal requirements. The enterprise is founded in the organizational and legal form of the Limited Liability Company.

Let us take a look at organizational structure of management of the company. Normally it is considered to be one of the most important elements of the internal environment of the enterprise is its organizational structure of management. The organizational structure of management is a set of interconnected management units. It is characterized by the number of governing bodies, the order of their interaction and the functions they perform. The main purpose of the organizational structure is to ensure the effective operation of managerial staff.[6] In "ZAMMLER UKRAINE" LLC this structure is represented by 15 departments which act more or less independently and report directly to the CEO. These departments are:

- Administrative department - consists of office-managers, facility managers, security, drivers, etc. This department is in charge of arranging official events, keeping offices and territory in decent state, special features (temperature screenings in times of pandemics. etc)
- Human Resources department - consists of HR managers. This department is in charge of managing the personnel, hiring, providing trainings, creating timetables, planning leaves and business trips and so on.
- Department of customs brokerage - consists of customs broker, customs declarant, and secretary. This department is responsible for preparing custom documents, checking compliance with legal requirements, making sure that all custom duties are paid and documents are in order. In case of any problems on the border the custom brokerage department must provide all necessary documentation and ensure that the transportation will continue with minimal delay.

- Accounting department - consists of financial director and accountants. Main objective of this department is creating financial statements according to the current legislation and submitting them. Also accounting department is in charge of tracking all inflows and outflows of money in order to make sure that enterprise receives payments from its clients on time and pays its own debts the same way. One of the most important payments which are made by accountants is distributing salary among the employees according to the data received from HR.
- Legal department - it consists of a team of lawyers who are involved in legal processes. Nowadays a lot of companies choose to outsource legal services, but in logistics due to specific nature of this activity connected to high risk, high number of intermediaries and great value of goods transported, lawsuits are not a rare thing. This department also plays important role in creating contracts that exclude a possibility of fraud.
- IT department - consists of software engineers and system administrators. Their main goal is to keep the computer system up and running.
- Security service - specialists who are in charge of data-security (for example provide background checks on the newly appointed specialists)

Logistical activity is carried out by the operation department. It is the most important, therefore the most complex department. It consists of:

~ Marketing and development department - is in charge of public relations, promoting the company image, developing the PR strategy.

~ Sales department - commercial director and sales managers including representatives. These specialists work directly with clients, finding potential customers through various databases and convincing them to cooperate with "ZAMMLER UKRAINE" LLC .

~ VIP client communication department - this department is in charge of working with the most important clients of the company. If relations with a certain client are considered extremely valuable for "ZAMMLER UKRAINE" LLC than

a VIP manager is assigned to that client, as such the customer gets easier communication process, more possibilities to control his operations and higher quality of service, while company remains sure that it will not loose an important contract.

~ International freight department -is in charge of international transportations by the means of automobile transport, to simplify the work is subdivided

- Full container freight department- management team in charge of taking orders and forming routes of deliveries for cargo which occupies the whole vehicle
- Groupage freight department - management team in charge of taking orders and forming delivery routes for groupage freight (when a number of goods are delivered to different clients by a single vehicle)
- Transport department - a team of drivers and mechanics

~ Regional freight department - is in charge of automobile transportation inside the country, is subdivided the same way but due to relative simplicity of the work includes less managerial staff.

- Full container freight department - management team in charge of taking orders and forming routes of deliveries for cargo which occupies the whole vehicle
- Groupage freight department - management team in charge of taking orders and forming delivery routes for groupage freight (when a number of goods are delivered to different clients by a single vehicle)
- Transport department - a team of drivers, mechanics and other functional personnel

~ Department of air freight - consists of specialists who organise delivery by aerial vehicles, as "ZAMMLER UKRAINE" LLC does not own any airplanes this departments main aim is to search intermediaries who can perform such delivery, arrange contracts with them, provide them with necessary documentation and information and oversee the process of transportation.

~ Railway freight department - consist of managers who are in charge of organising railway transportations, their mission is holding communications with "Ukrzaliznytsia", developing routes of delivery etc. Due to the fact that all railway transportation in Ukraine is performed by a single monopoly this department mostly works only with this monopoly, and so does not require a large quantities of workers.

~ Department of sea freight - is the largest department in the company. In order to be able to control the activity and be closer to potential partners and contractors, this department is situated in Odessa and therefore has its own accountants and administrators. In total this department includes:

- Administrative department - is in charge of day-to-day operations in the office, facility management, workplace security, catering, etc.
- Accounting department - in charge of bookkeeping and performing financial operations.
- Full container freight department - management team in charge of taking orders, forming the shipment that occupies the whole container and then freighting a place on a ship
- Groupage freight department - management team in charge of taking orders, forming the shipment in a form of several cargoes of different clients stacked together in a single container and then freighting a place on a ship that will deliver it to the destination.
- Customer service department - fulfils a role of public relations, collects reviews from the clients and gives advices to other departments about how to satisfy the client's needs in the most efficient way.

As we can see "ZAMMLER UKRAINE" LLC " has a linear organizational structure. The organizational structure does not contain contradictions, the director is the general manager who delegates powers "from top to bottom". There are almost no problems with communication. The exception is that the director does not always provide information about the current state of the enterprise and goals and plans for the future. He manages the company as a whole, represents the

company in any organization, disposes of its property within the current legislation, enters into contracts, opens current accounts with banks and more. At the same time, middle level managers have enough power to perform their functions efficiently and enough freedom to act fast when the situation demands it without consulting the top management.

In order to gain a deeper understanding of economic performance of the company we shall analyze its financial data. But before that we need to understand at which stage of its life cycle company is situated currently. For this let us analyze the history of ""ZAMMLER Ukraine" LLC . The company was founded at the beginning of 2007. At that time the team consisted of 8 employees. Now the number of "ZAMMLER GROUP employees is over 450 people. A year after its founding, in 2008, the company's management had to deal with a worldwide economic crisis: the dollar appreciated more than 1.5 times, inflation rate rose up to 22%. Thanks to the proper management and timely anti-crisis actions, the company managed to maintain its position and continue its development.

- In 2009, "ZAMMLER UKRAINE" LLC expands its international agent network to 94 agents.
- In 2010 CJSC "ZAMMLER Ukraine was reorganized into "ZAMMLER UKRAINE" LLC .
- In 2011, "ZAMMLER Warehouse LLC was created and a logistics complex was opened in the Kiev region.
- During 2012, the group of companies doubled its turnover.
- In 2013, a "ZAMMLER UKRAINE" LLC representative office was opened in China.
- In 2014, the European representative office of the group of companies in Poland was founded with its own park of vehicles.
- In 2015, the first in Ukraine "ZAMMLER UKRAINE" LLC order fulfilment centre was opened, which provides integrated logistics for online stores,

as well as a "ZAMMLER UKRAINE" LLC structural unit in Odessa with a railway line.

- 2016, the number of "ZAMMLER UKRAINE" LLC agents in the world increases to 105.
- In 2017, a structural division of the company was opened in Kharkiv. In the same year, the companies of the "ZAMMLER UKRAINE" LLC group confirmed the high quality of service provision and business process management, having received certificates of compliance with international standards ISO 9001: 2015, ISO 14001: 2015, OHSAS 18001: 2007.
- In 2018, a structural unit was opened in the city of Dnipro.
- According to the CBRE Ukraine rating published in 2018, "ZAMMLER UKRAINE" LLC is in first place among operators performing logistics operations on their own and rented warehouse space.
- In 2019, the own vehicle fleet of the "ZAMMLER UKRAINE" LLC group of companies was expanded to 83 trucks.
- In 2020 office in Kazakhstan was opened, total number of trucks owned by a company increased to 90.

As we can see, up to this date the extensive growth of the company continues, "ZAMMLER UKRAINE" LLC actively finds new partners, opens offices on foreign territory, enlarges its portfolio, etc. Judging by these factors we can tell that despite being established 13 years ago company is still in phase of rapid growth. Now it is necessary to analyze financial reports in order to see the economic result of business activity. Let us start with dynamic analysis of balance (table 1.1)

Table 1.1

Dynamics of the main indicators of financial activity of the "ZAMMLER UKRAINE" LLC in thousands hrn.

					Absolute deviation			Relative deviation		
Indicator	2015	2016	2017	2018	15/16	16/17	17/18	15/16	16/17	17/18
Net income from realsation of services	15 735,9	20 654,8	23 849,2	30 548,6	4 918,9	3 194,4	6 699,4	31%	15%	28%
Other operating income	5 987,7	7 825,3	9 357,1	10 451,9	1 837,6	1 531,8	1 094,8	31%	20%	12%
Other income	41,3	26,5	50,6	68,3	-14,8	24,1	17,7	-36%	91%	35%
Total income	21 764,9	28 506,6	33 256,9	41 068,8	6 741,7	4 750,3	7 811,9	131%	17%	23%
Cost of services sold	5 792,7	9 325,2	11 835,7	14 984,6	3 532,5	2 510,5	3 148,9	61%	27%	27%
Other operating expences	14 986,6	17 683,7	18 356,4	20 478,6	2 697,1	672,7	2 122,2	18%	4%	12%
Total costs	20 785,1	27 008,9	30 192,1	35 463,2	6 223,8	3 183,2	5 271,1	30%	12%	17%
Financial result before taxation	979,8	1 497,7	3 064,8	5 605,6	517,9	1 567,1	2 540,8	53%	105%	83%
Income tax	176,1	269,6	551,7	1 009,0	93,5	282,1	457,3	53%	105%	83%
Net profit (loss)	803,1	1 228,1	2 513,1	4 596,6	425,0	1 285,0	2 083,5	53%	105%	83%

Source: compiled by the author according to the annual reports of "ZAMMLER UKRAINE" LLC

Main tendency that we can see here is constant increasing of net profit, even though the situation on the market is tough, with the overall recession in logistical activity. In some cases such fast growth may originate from risky investing policy and extensive use of banking loans to fund the growth. In this case enterprise may be putting itself into an unstable condition, where it is vulnerable in case of crisis.

In order to see if that we have conducted a financial stability analysis, you can see the results in the table 1.2

Table 1.2

Financial stability indicators of ""ZAMMLER Ukraine" LLC

Indicator	2016	2017	2018	Absolute deviation		Relative deviation	
				16/17	17/18	16/17	17/18
Liquidity							
Current liquidity	83,10%	89,20%	77,30%	6,1%	-11,9%	107,34%	86,66%
Absolute liquidity	7,90%	2,10%	5,80%	-5,8%	3,7%	26,58%	276,19%
Solvency							
Coefficient of autonomy	21,50%	15,50%	14,10%	-6,0%	-1,4%	72,09%	90,97%
Profitability							
ROA - Return on assets	5,70%	4,20%	3,90%	-1,5%	-0,3%	73,68%	92,86%
RCA - Return on current assets	8,70%	5,60%	6,10%	-3,1%	0,5%	64,37%	108,93%
NPM - Net Profit Margin	7,20%	8,40%	6,10%	1,2%	-2,3%	116,67%	72,62%
ROTA - Return on total assets	6,90%	5,10%	4,80%	-1,8%	-0,3%	73,91%	94,12%
Business activity							
Turnover of total assets	0,8	0,6	0,8	-20,0%	20,0%	75,00%	133,33%
Working capital turnover	-6,6	-5,9	-5,1	70,0%	80,0%	89,39%	86,44%
Turnover of receivables	1,5	1,1	1,5	-40,0%	40,0%	73,33%	136,36%

Source: compiled by the author according to the annual reports of "ZAMMLER UKRAINE" LLC

Main indicators are within normative and show stable positive tendency, with that we can conclude that current level of debt is dangerous in short term as it cannot be repaid by the means of cash and liquid assets, at the same time this risk will arise only in case of critical events in the industry. In situation where market volatility remains relatively stable company has enough funds to cover all planned expenditures and keep a reserve fund to protect itself from risk.

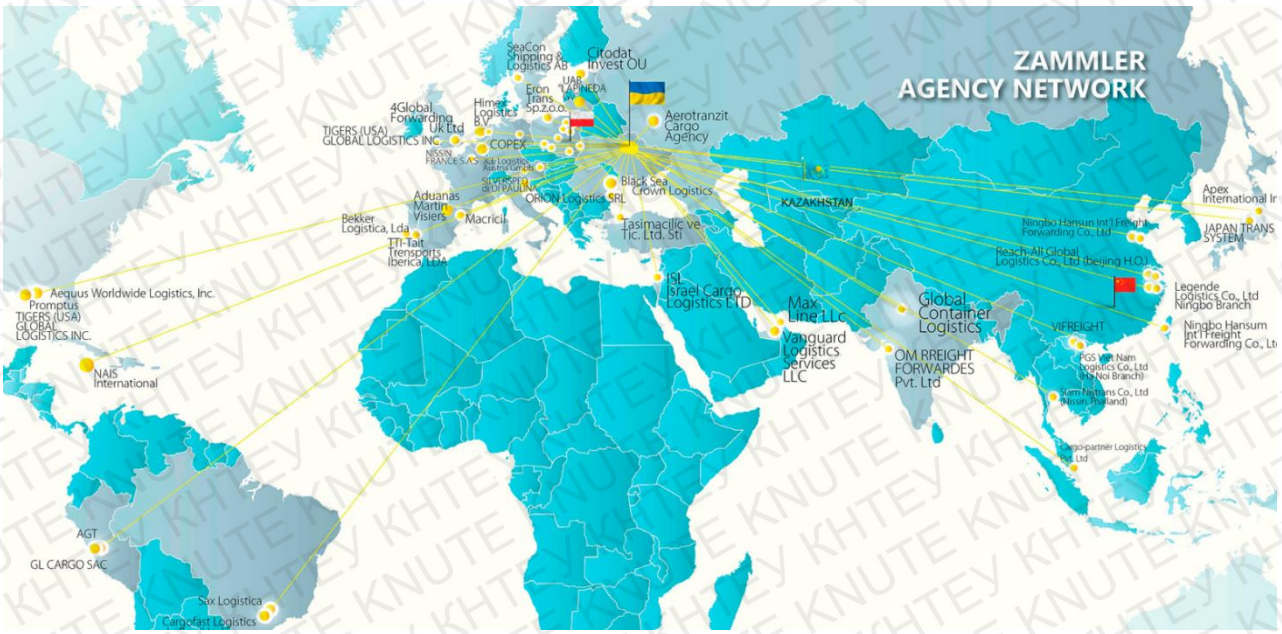
1.2. Features of strategy of foreign economic activity of ""ZAMMLER Ukraine" LLC

Despite having a large share of activity on a domestic soil, "ZAMMLER UKRAINE" LLC positions itself as an international 3PL operator which can make a delivery to practically any point in the world. It is specialising in complex end-to-end supply chain solutions, which are managed by specialised "ZAMMLER UKRAINE" LLC " units and performed in cooperation with a broad network of agents. These integrated logistics solutions not only increase transparency and efficiency in the supply chain but also optimise information flows between the participating partners and customers. This allows "ZAMMLER UKRAINE" LLC to support its customers' value chain, a decisive factor in a highly competitive and fast growing market. Currently there is a growing demand for such services in a whole world. In 2018, the world economy grew by estimated 3.0 per cent (2017: 3.1 per cent) due to continued good levels of industrial activities and a robust global trade. The United States, Japan, China, and the European Union contributed to the global growth. However, the year was characterized by a slowing down growth dynamic due to first signs of the implementation of trade barriers in the second quarter and profit warnings from companies in the automotive and high tech industry that were published in the fourth quarter. This uncertainty has also impacted the outlook for 2019 that is more cautious for the growth in trade volumes based on the fear for new trade tariffs and the uncertainty of implications from Brexit. Mature economies have shown signs of a decline in growth rates in the light of these heightened policy uncertainties resulting in a slightly reduced growth rate for 2018 at 2.2 per cent versus 2.3 per cent in 2017.Emerging markets are estimated to have grown by 4.3 per cent in 2017 and 4.2 per cent in 2018, to a large extent based on stable conditions for large commodity shippers and increased domestic consumption.[1.] In 2018, the international logistics industry experienced world trade volume growth below the level of 2017. The global world trade volume growth has slowed to 4.0 per cent in 2018 versus 5.3 per cent in 2017. Advanced economies' world trade volume grew at 4.3 per cent in 2017 and is estimated at 3.2 per cent in 2018. In emerging markets and developing economies these indicators were at 7.1 per cent in 2017 and at 5.4 per cent in 2018. [2] On the

carrier side, the market in 2018 was characterised by volatile freight rates as a result of the continued imbalance of capacity and demand of carriers and ongoing consolidation in the shipping industry. In this state producing companies tend to diversify the portfolio of their contractors, especially in logistics, that is why new companies may receive a lot of benefits if they enter the global supply chain market successfully.[8]

At the beginning of its path "ZAMMLER UKRAINE" LLC choose a strategy of developing through the network of agents. In this strategy "ZAMMLER UKRAINE" LLC signs a set of long-term contracts with transporting, warehousing, stevedoring companies around the world. Then when the client demands a delivery from one country to another, "ZAMMLER UKRAINE" LLC does not need to look for contractors, consult timetables and payment. Analysts in head office just plan the delivery and send documents to the agents with whom they have already agreed terms of cooperation, prices, other important aspects of the service. Today "ZAMMLER UKRAINE" LLC s network includes more than 105 agents, we can see their approximate locations on the picture 1.

Pic.1.1



Source: "ZAMMLER UKRAINE" LLC website

As we can see "ZAMMLER UKRAINE" LLC has partners he cooperates with on the most important transport routes: European road network, main Chinese and American ports, Indian and Arabic manufacturing centres. Most global chains of value "ZAMMLER UKRAINE" LLC has to deal with go through this points, and the network supports company activity there. That does not mean that this are the only places "ZAMMLER UKRAINE" LLC can deliver goods to. If it is necessary it is possible to find a contractor anywhere in the world and arrange delivery, but in that case operations will be more difficult to perform and much riskier which means increase of price and time spend on this operation and these two factors are usually the ones most important to the client when he makes his choice.

This form of organisation provides rather high quality services at a price lower than average on the market but also has some disadvantages. As an agent is not part of our team but merely a partner we can not fully control its activity. Of course we can perform periodical audits in order to understand is our agent capable of providing high quality service according to our standards, but this does not exclude the risk of damaging clients property due to unprofessionalism of our agents employees or use of unauthorised techniques. To get rid of this problem we can establish a company office in the country. This way we directly control all the activities that are carried out, we are in charge of personnel recruiting and buying property. This way we have far more control over the procedure which makes our logistics system much more flexible. For example if we have an order for the urgent delivery we can prepare a shipment and load it out of turn without paying fees for breaking the rules of contract, having to go through a long procedure with numerous requests and explanations and risking a lawsuit and reputational losses. This approach though has a major disadvantage, it is extremely costly and difficult. That is why "ZAMMLER UKRAINE" LLC has only 3 foreign offices. Office in China was acquired in 2013 through buying out a local company Ningbo Trading Co. In 2014 "ZAMMLER UKRAINE" LLC s management decided to expand to Eastern Europe and Poland was chosen as a suitable country for that. Here the

company management has decided to "start from scratch" by building warehouses, buying car park and acquiring client base. Compared to fast start with Chinese office "ZAMMLER Polska" took extremely long time to become a profitable organization. After analyzing both approaches and their results the management has decided to expand more only by buying out local companies.

1.3 Logistical efficiency evaluation of ""ZAMMLER Ukraine" LLC

"ZAMMLER UKRAINE" LLC takes an important place in Ukrainian logistics market. According to the research, in 2020 "ZAMMLER UKRAINE" LLC was 6th most profitable logistic company operating in Ukraine, having lost to such giants as KÜEHNE + NAGEL, DSV LOGISTICS, FM LOGISTICS, RABEN, EKOL. It is important to mention that this rating states that "ZAMMLER UKRAINE" LLC is the biggest Ukrainian logistic operator. The reason of such success partially lies in well-thought marketing strategy. "ZAMMLER UKRAINE" LLC positions itself not only as a 3PL operator, but also as a provider of fulfilment services for e-commerce. This means providing warehousing and transportation services for different internet trading platforms. This is one of the most profitable aspects of "ZAMMLER UKRAINE" LLC s operations and what makes this company special. This is possible due to the large network of warehouses and sorting centres, which are considered as one of the most valuable assets of the company. In Ukraine this network includes:

Three A-class complexes:

- Kyiv region, Boryspil district, village Martusivka, Moiseeva street 70 total area - 25 000 square meters, WMS-system (Qguar), 15 units of loading and unloading equipmen. 16 km from Kiev.
- Kyiv region, Brovarskyi district, village Victory, Bohdana Khmelnytskoho street 1 (total area - 17,000 square meters, WMS-system (Qguar), 12 units of loading and unloading equipment. 14 km from Kyiv.

- Kyiv region, Brovarskyi district, village Krasylivka, Dymersky lane 2 total area - 12,500 square meters, WMS-system (Qguar), 15 units of loading and unloading equipment. 17 km from Kiev.

One B+ class complex

- Odessa, Aeroportovska street 9 total area - 5,000 square meters WMS-system (Qguar), facility is located within the city has a railway branch which provides the possibility of transshipment for multimodal transportation, can simultaneously serve 7 railway cars.

Two B-class complexes

- Lviv, Northern street1 total area - 1,500 square meters, WMS-system (Qguar) site is located within the city, is served by 3 units of loading and unloading equipment
- Dnipro, Journalists street 9 total area -1000 square meters WMS-system (Qguar))

On these warehouses "ZAMMLER UKRAINE" LLC provides a full cycle of services, including:

- complex of cargo handling works, loading and unloading vehicles ;
- temporary, permanent, storage, customs warehousing;
- accounting, sorting, packaging, labelling;
- preparation for transportation, inventory handling, cross-docking;
- manufacturing of wooden pallets, containers for transportation;
- waste recycling;
- preparation of necessary documentation, reports.

Delivered cargo is placed on all area of a warehouse where there are free places of storage. The main function of the warehouse is to track the arrival of goods. This work is performed by an accountant who takes documents from suppliers and puts the goods in the informational system as the ones that have already arrived.

As for another aspect of logistics, transportations, "ZAMMLER UKRAINE" LLC mostly uses its own vehicle park in order to perform deliveries. To understand the amounts of cargo moved by "ZAMMLER UKRAINE" LLC s transport fleet we will analyze the transportation reports in table 3

Table 1.3

Analysis of amounts of cargo transported, by groups (thousand tons)

					Deviation (%)		
Type of cargo	2016	2017	2018	2019	16-17	17-18	18-19
Machinery	0,54	0,76	0,63	0,71	1,43	0,83	1,11
Food products	0,49	0,55	0,57	0,49	1,11	1,03	0,87
Building materials	0,54	0,63	0,45	0,47	1,17	0,72	1,04
Minerals	0,49	0,52	0,29	0,47	1,05	0,57	1,6
Furniture	0,11	0,27	0,32	0,31	2,55	1,16	0,97
Total	2,14	2,73	2,26	2,35	1,28	0,83	1,04

Source: compiled by the author according to the annual reports of "ZAMMLER UKRAINE" LLC

As we can see from the table even own vehicles of the company carry enormous amounts of cargo. And it is important to mention that around 70% of operations are performed by outsource operators. In order to control these operations company uses a set of advanced IT solutions. For example warehouses are managed with the help of WMS Qguar. This is an advanced warehouse management system which has built-in modules for managing ADR goods, calculating logistics operations, as well as for optimizing the operation of warehouse equipment and equipped with graphical indicators and a configurator of interfaces with external systems are available. The system works with RFID and Voice technologies. In order to control the transportation TMS Artlogic is used. This system has a few benefits that make it more efficient than most of the competitors. It is integrated into ERP system and data from there is automatically transferred. To maximize utilization of space in the carriers, orders are automatically grouped. At any time, it is possible to track the status of the order and easily communicate with customers. The system allows to control all the factors affecting the timeliness of shipment: orders are automatically distributed

according to free time windows of the warehouse, the warehouse receives notifications about upcoming shipments, the transporter knows in advance about all transportation parameters and receives notifications if they change. Transport order is made with one click without unnecessary correspondence through the mail or phone calls. In case when no company vehicles are available the system will analyze available outsource carriers and offer several options: the cheapest carrier, the carrier assigned to this direction, or the carrier with the best service. The selected transport company will receive a transport request automatically. Yet "ZAMMLER UKRAINE" LLC has an ambitious plan to create a new type of system. Currently like many 3PL operators "ZAMMLER UKRAINE" LLC has separate solutions for transportation, warehouse management, accounting and management accounting. But when a company crosses a certain milestone in terms of traffic volumes, their scale and complexity increases, it becomes necessary to control the process as a whole, and not each segment separately. SAP-level system products are used by global corporations and cost millions of dollars to redesign, plus monthly support costs. In our case, it is unwise to invest such funds in a software product that accompanies activities with the participation of only three countries (where the "ZAMMLER UKRAINE" LLC group of companies is represented).

Therefore, the company made a decision to create a single platform - Logistics Management System on the basis of its existing automation systems. This is a complex software product - a symbiosis of TMS, WMS, CRM, GPS and security systems. It integrates a financial accounting system, GPS navigation for its own vehicle fleet, makes it possible to form client accounts and track the movement of goods not only in the warehouse, but also on the way. As a result, the clients will be able to receive operational information about everything that happens with their cargo. And the company will have the opportunity to monitor all operational processes and costs in real time - fuel, time, human, financial and other resources - in order to provide the best service for customers and partners.

The introduction of such an integrated platform will allow to:

- track all vehicles while driving on routes and at the time of unloading / loading in order to increase the safety of these processes;
- carry out continuous analysis of current processes, as well as optimization and control of all operations;
- form "BIG DATA" of logistic processes for productive internal use;
- analyze all cases and experience with clients from different segments and industries;
- develop priority segments in order to improve the quality of services provided;
- identify possible areas for improving service, increasing profitability and optimizing costs.

Work on the creation of the Logistics Management System has just began this year. An IT company that has been supporting "ZAMMLER UKRAINE" LLC for several years was selected as the main developers. The integration takes place in stages, each department is involved in working with programmers according to the approved schedule. The test launch of the entire system is tentatively scheduled for next year, then it will be tested by the end of the year. In case of successful implementation of the Logistics Management System, "ZAMMLER UKRAINE" LLC 's experience will be useful for many companies.

CONCLUSIONS TO SECTION 1

We can conclude that "ZAMMLER UKRAINE" LLC is a Ukrainian 3PL operator and its main activity is providing logistics services. ZAMMLER GROUP cooperates with more than 200 agents around the world, has its own fleet in Europe and Ukraine. 90% of ZAMMLER GROUP's client portfolio is international companies with world names. The group of companies operates warehouses with an area of more than 60 thousand m2 , including the latest class A warehouses. Providing all types of logistics services, "ZAMMLER UKRAINE" LLC applies a single standard of quality and customer service technology. Financial analysis shows that most important indicators show stable increasing, as such during the last year company managed to increase its profit by 83%. These results are achieved due to both increase in number of services produced (we can see stable grow in quantity of goods transported) and implementing more cost-efficient techniques that permitted "ZAMMLER UKRAINE" LLC to adjust its profits while keeping costs rather low. While growing company manages to keep balance and financial stability we can see that coefficients of liquidity stay in optimal diapason of around 80%, Return on current assets and net profit margin seem to be growing steadily by approximately 2% per year. Therefore despite unpleasant situation in Ukraine and in the world in general "ZAMMLER UKRAINE" LLC manages to grow and attract new investments and customers. Main services proposed by a company are warehousing, transportation, e-commerce fulfilment. Most of the operations are performed on the territory of Ukraine, but company actively tries to acquire facilities in the foreign countries in order to expand even more. Today "ZAMMLER UKRAINE" LLC has successfully expanded its operations on the territory of China, Poland and Kazakhstan. Having studied foreign experience, it should be noted that success in the organization of warehousing logistics was achieved primarily by those companies that correctly used software products in logistics management, because it is the most important moment in the organization of logistic activity and can bring significant benefits. Here it is important to mention the wish to constantly upgrade and modernize key

IT solutions for transport management, warehousing management, enterprise recourse planning and other systems. Because it is an important tool in the work of large and small companies, especially with active modernization as in our case. Though "ZAMMLER UKRAINE" LLC does not have obvious problems with its activity or financial condition, market it operates on remains highly competitive. That is why in order to achieve further success "ZAMMLER UKRAINE" LLC must introduce new ways of development.

SECTION 2 WAYS TO IMPROVE LOGISTICS STRATEGY OF "ZAMMLER UKRAINE" LLC

2.1 Substantiation of problems and threats for development in the organization of logistic activities of "ZAMMLER UKRAINE" LLC

The estimation of efficiency of logistic activity of pure logistic operators considerably differs from an estimation of logistic activity of the manufacturing enterprises as such aspect of activity as manufacturing is completely absent. Instead of that key factor which plays significant role in the financial results of the enterprise is ability of the management to correctly position the company on a market, choose clients and suppliers and build an efficient, fast and flexible system of management. That is why to improve overall performance of logistical operator we have to choose a specific strategy, not like typical ones we use with manufacturing businesses. Some approaches though are universal for example it is no secret that successful management of logistics activities at enterprises depends on the effective use of modern information and communication technologies, software, information systems. Their implementation allows us to quickly make management decisions on the organization of logistics processes and transport operations, allows to optimize material, information and financial flows, improve customer service, reduce logistics costs, which will increase the competitiveness of enterprises.[21] Management of financial, information, service flows using logistical methods, allows to ensure the efficient movement of flows from producer to consumer. In modern conditions, effective material flow management requires the introduction of innovative technologies for monitoring the implementation of logistics operations, as well as modern software for auditing logistics activities and their efficiency, to identify factors influencing the efficiency of logistics activities and identify weaknesses in the logistics system as a whole and its individual elements. Improving the efficiency of material flows can be done through quality customer service, through forecasting the prospects of the logistics system of the enterprise, through maximum satisfaction of customer needs in terms of time, reliability, communication and convenience. Each of these elements plays an

important role. Customer service departments, which are primarily concerned with resolving their problems and complaints, should be overseen by middle and senior managers.[17]

This is especially important in case of "ZAMMLER UKRAINE" LLC because despite having a well placed network of large-scale warehouses, company lacks an adequate logistic system. Due to insufficient level of modernization and automation Zammler`s logistic system is not as efficient as it could be. One of the particular problems is the length of ordering cycle time and the volatility which often have a big effect on the costs and flexibility for the purchasers. So it is regarded as an important reference when choosing suppliers as it directly threatens the company's market competitiveness. Currently this period is less around a day which is good enough to keep clients satisfied but not enough to become a leader on the market. Bad logistics quality control may lead to much loss, such as compensating for clients loss, fees for recalling, reforming and resending the rejected shipment, time wasted and opportunity loss. Main treat here is the fact that the firm may not fully investigate and analyse the strategy of warehousing. It will lead to mistakes in decision making. The company's decision makers may not have enough cognition of improving the mechanization and automation during warehousing process. Besides, the employees couldn't be trained well about mechanical operation and repairing. Lack of professional skills, will result in incorrect and inefficient use of equipment. When planning and designing an advanced warehouse, they will not consider maintaining and developing afterwards. This will limit the use of equipment and improvement of mechanization.[12]

Another considerable weakness in "ZAMMLER UKRAINE" LLC organisation form is the fact that it is underrepresented on an international market. The company has offices in Poland, Kazakhstan and China, and a wide network of agents across Europe, but Northern and Southern America, Africa and most of Asia are not the part of "ZAMMLER UKRAINE" LLC s sphere of operations.

Meanwhile these regions play important role in global supply chains and ignoring them is unacceptable for a logistics operator.

On the national territory the situation is much better. Here "ZAMMLER UKRAINE" LLC has a lot of representatives, its network covers almost the whole territory of the country. One of the main advantages company possesses is a system of warehousing centres around the country positioned in a way so the order could be easily delivered to any point in the country. Therefore extensive growth through increasing the number of warehouses or sorting centres seems to be unnecessary. While intensive growth through increasing the quality of work on these facilities may significantly increase speed of their work, amount of cargo that goes through them and obviously profits of the company.

2.2. Development of a set of measures to optimize the logistics strategy of "ZAMMLER Ukraine" LLC

One of the most obvious changes that shouldbe introduced is modernization of the warehousing technology. Warehouses are one of the main elements of logistics systems. The objective need for specially equipped places for the maintenance of stock exists at all stages of the movement of material flow from the primary source of raw materials to the final consumer.

On the territory of complex of warehouses belonging to "ZAMMLER UKRAINE" LLC the accumulative form of the organization of movement of materials is used. Warehousing of the enterprise consists of different types of warehouses, which in each turn provide a different set of services. All buildings and premises used for storage are located on the territory of the enterprise.

In the practice of ""ZAMMLER Ukraine" LLC , the method of logistics is used, which provides for timely replenishment of stocks in warehouses and maintaining them at a level that would cover any need for a new supply of materials. Basically a system with a fixed size of order. In order to facilitate the procedures "ZAMMLER UKRAINE" LLC could implement the cross-docking technology. This means movement of goods through the warehouse directly, in fact

without its placement in storage. The cross-docking scheme minimizes the time of warehousing and storage. Recently, the operation of cross-docking is becoming increasingly popular. This is due primarily to a reduction in costs by 20-30% in the organization of warehousing operations in comparison with the "traditional" storage of goods. Cross-docking also allows us to speed up the delivery of goods to the final consumer. Imagine a simple example of cross-docking operation. The goods are prepared for shipment in the customer's warehouse in Kiev, placed on pallets and sorted by the addresses of final delivery. That they are goods are accepted by the forwarder of the company.

The goods are loaded into the company's heavy-duty vehicles and delivered to the warehouse of "ZAMMLER Ukraine" LLC the next day after loading. On the same day the goods are loaded in low-tonnagetrucks and delivered to stores or loaded into vehicles travelling to the addresses of the Western region. In addition to the cross-docking scheme, "ZAMMLER UKRAINE" LLC offers its clients the use of pick-by-line technology. It provides high speed processing of goods. The application of this technique includes the following operations: the goods arrive at the warehouse, then it is sent to the storage cells assigned to each store. After the accumulation in the cell of the volume of goods suitable for transportation, it is shipped to stores. When working on the pick-by-line scheme, the costs of maintaining the warehouse are slightly higher than with the usual cross-docking, but the time of completing the order is reduced, it is possible to reduce the cost of creating inventories compared to "traditional" storage. Delivery of goods to the enterprise can be carried out by road and rail: cars, containers, trucks. At delivery of the goods in railway cars in the territory of the enterprise there is a railway track, after all the enterprise provided supply of all necessary infrastructure directly to a warehouse.

Another obvious way to improve the quality of service lies in the IT sphere. The foundation of logistics from the standpoint of management, controlling and optimization decisions in the supply chain is information. The efficiency of logistics business processes largely depends on the availability of the right people

who have the right information at the right time and obtained from reliable sources. Information is a key element necessary for the successful operation of the supply chain, because without it, managers can not determine what consumers need, what stocks are available to meet these requirements and when to make or order products. The concept of information in logistics is multifaceted. These are information and telecommunication systems and technologies, global and local computer networks, e-business, electronic document management, etc. One of the most important purposes of information technology in logistics is to transform data into information that can help in making the best decisions in managing logistical processes in supply chain. Due to the development of the global Internet and the intensification of numerous virtual companies and operators, the life cycle of services for the delivery of goods to the final consumer begins to take very specific forms based on the standardization of logistics, information and financial transactions in supply chains. As a result, logistics is increasingly linked and increasingly associated with the development of complex information projects to support the delivery of goods and resource allocation.[20] Currently the company uses the Qguar WMS system for warehouse management. Though it does not take most of its potential. Warehouse management system Qguar WMS is a comprehensive logistics solution for warehouse facilities, regardless of their type and size. The abbreviation WMS marks the profile program for warehouse automation. With its help all operations and processes proceeding in a warehouse are realized, the system is used for optimization and improvement of all types of works on warehouse and areas adjacent to a profile of their activity. Warehouse automation using the Qguar WMS Pro system can be effectively used in any enterprise, regardless of:

- number of product items;
- complexities occur on the object of processes;
- the size of the warehouse;

One way or another, the WMS warehousing system invariably brings a positive result for the company. It is a powerful tool for the implementation of the

most complex logistics tasks. The latter include: work in warehouses with a complex topology, inventory without stopping the work of the warehouse and more. Warehouse management by supporting operations for the processing of goods flows is especially important for logistics operators, the system is also used for commercial warehouses 3PL and 4PL.The automated warehouse management system allows to bring the business to a qualitatively new level, where the management of warehouse logistics ceases to depend on the influence of the human factor. Thus, it is possible to significantly reduce financial and time costs without reducing the overall quality of the enterprise. The growing role of information flows in modern logistics is due to the following main reasons. First, for the consumer information about the status of the order, the availability of goods, delivery times, shipping documents, etc. is a necessary element of consumer logistics service. Second, from the standpoint of inventory management in the logistics chain, the availability of complete and reliable information can reduce the need for inventories and labour resources by reducing uncertainty in demand. Finally, third, information increases the flexibility of drugs in terms of how, where, and when resources can be used to achieve competitive advantage.

As for the economic benefits of informatization of warehousing processes should be researched closely:

1. Reducing the time of the process. With complete advance information, the company can pre-optimize the course of subsequent transport, warehousing and loading and unloading processes and thus reduce their time.

2. Decrease in inventories as a result of reduced risks. Timely and reliable information reduces the risks of unwanted stocks. Stocks of raw materials and finished products can be partially controlled using information about their availability in the warehouse or on the way to it.

3. Rational use of resources. Timely information on the implementation of processes at all levels of the logistics system of the enterprise allows for a more rational use of production factors such as storage capacity and personnel. And also

according to the idea of economical production, the information allows to reduce costs of their use.

4. Improving the quality of the logistics process. Information security of processes at all stages of the logistics chain is the most important indicator of the quality of its operation. It allows you to better monitor the timing of deliveries and respond more quickly to violations.

5. Reduction of errors. Due to the continuous passage of data between the components of the logistics system and the use of electronic information exchange, there is no need for multiple data registration. Which, in turn, helps to avoid additional sources of error.[26]

The system of operation of the warehouses of "ZAMMLER UKRAINE" LLC can be described as follows. "ZAMMLER UKRAINE" LLC delivers the Customer's goods from the place of its production or purchase and places them in the warehouse of "ZAMMLER Ukraine" LLC . If necessary, the company undertakes to ensure the planning of the range and volume of goods supplied. In accordance with the customer's requirements, "ZAMMLER UKRAINE" LLC engaged in the formation of orders for the customer's customer base. Selection of orders can be performed as pallets and boxes, and pieces, which is important for the delivery of goods in retail chains. The warehouse transfers the generated orders to the transport department, which in turn delivers the goods to the specified customer addresses at the specified time. Full information and documentary support is provided along the way. The company provides temporary storage of originals of accompanying documents, as well as their storage in the virtual archive of the customer in the web space. Upon receipt of the goods at the warehouse in the database, the date of manufacture and expiration date of the goods of each received article are entered. If this information is encrypted in the form of a barcode on the packaging, it is read by a scanner, which eliminates the possibility of errors in this process.

Selection of goods in the formation of orders is carried out according to an algorithm that each customer chooses:

FIFO (First In, First Out) - in this case, the product registered first, is selected in the order, too, first.

LIFO (Last In, First Out) - the product that was registered last, is removed from the register first.

FEFO (First Expire, First Out) - a product whose expiration date expires first, enters the selection first.[20]

Any other accounting algorithms are possible.

Selection of goods in the order can be carried out taking into account additional requirements. For example, restrictions on expiration dates may be made individually for each consumer (store or distributor). Thus for the distributors located at considerable distance from the warehouse, selection of the goods having expiration dates limited by delivery time is carried out.

This technology of operation allows tracking the movement of goods taking into account the SSCC code (Serial Shipping Container Code). SSCC number or data structure used to uniquely identify logistics modules (pallets). With this number it is possible to restore the history of the goods contained in the pallet, a few years after shipment. The benefits of use of goods accounting under the SSCC code can be modelled in the following example.

The warehouse receives a pallet with its unique SSCC number, encrypted in an 18-bit barcode. The code is entered into the database and uniquely identifies the pallet. The pallet, consisting of several dozen boxes, is placed in storage. After receiving a number of tasks for the formation of orders from this pallet, the boxes are shipped - at different times, to different consumers of goods to different addresses. The SSCC pallet code is assigned to each shipped box (group of boxes). This allows you to restore the shipment history of each box - when, to which consumer and to which address the box with the goods was shipped. The information is stored in the database for at least 4 years. Such information is necessary for the manufacturer, for example, to recall the product, if the production technology after some time was compromised, for example some unacceptable violations were found.[19]

In this regard, the company should consider implementing the concept of economical approach. In order to reduce costs, the company may use a Lean tool such as "Just-in-Time". However, the organization should not stop there and plan to improve warehousing operations with the help of other Lean-technologies.

Deliveries just in time allow to minimize stocks in warehouses of accessories. The essence of the Lean system is to refuse to tranship goods through terminals. Instead, a continuous flow of goods is created. From a practical point of view, the main purpose of the Lean system is to eliminate any unnecessary costs and effectively use the potential of the organization. Thus, the principle applies: to provide services when they need it, and only in such quantities that are dictated by demand. There are basic conditions that must exist in order for a company to successfully implement the system "Lean", namely:

- Providing the necessary support during the implementation of the system by senior management;
- Development of a system of successive actions of the warehousing process;
- Organization of work of the manager who forms applications for raw materials;
- Availability of reliable partners;

In addition to the Just-in-Time system, the company can implement such Lean-technology as 5S, which can also improve operations in the warehouse. The first thing an organization needs to do is restore order and identify large stocks. This requires:

Separate the necessary tools, parts and documents from the unnecessary ones in order to remove the latter.

1. Place tools in the workplace so that they are easy to work with.
2. Maintain cleanliness in the workplace.
3. Develop standards for the content of the workplace and work instructions.

4. Constantly monitor the implementation of all procedures and try to improve.

Thus, in the 5S cycle itself, five phases can be distinguished: sorting, order, cleaning, standardization and improvement. The effectiveness of using the 5s system to create a quality working environment directly depends on the completeness of the joint use of all five stages of the system.[13]

Speaking about international development strategy "ZAMMLER UKRAINE" LLC also has a lot to do in order to achieve success. Currently "ZAMMLER UKRAINE" LLC has a significant agent network in Europe which allows the company to benefit from developed trade in this region. It also has an office in China which allows to control some operations in Chinese portsand therefore "ZAMMLER UKRAINE" LLC s clients receive huge benefits. China is one of the largest exporters in the world, so a lot of company clients deal with shipments from or to there. Also Chinese manufacturers are well known for their "devil-may-care attitude" for transport documents, and often shippers have to deal with this problem themselves, gathering documents and answering lawsuits due to which the process becomes longer in time and expenses grow as well. Having some representatives in China helps to get rid of this problem, because this way "ZAMMLER UKRAINE" LLC employees control all operations and review the documentation, therefore can fix the problems in time.

At the same time "ZAMMLER UKRAINE" LLC only has a very limited number of agents in Northern and Southern America which is a very questionable decision. The North America logistics market reached a value of around US$ 947 Billion in 2019 and keeps growing, USA, Canada and Mexico are all experiencing booms in economy therefore import-export operations scales are growing each year. The North America logistics market is currently being driven by several factors. The increasing demand for the foreign goods in the emerging economies, such as Indonesia, Thailand and India specifically imported from the North American countries, acts as one of the major forces which is catalyzing the growth of the logistics market in the region. Moreover, owing to the rising environmental

concerns, the adoption of green logistics solutions has been witnessed in recent years. At present, the United States represents one of the key markets for logistics in the region with highly integrated supply chain network that links producers and consumers through multiple transportation modes, such as air and express delivery services, freight rail, maritime transport, and truck transport. More importantly E-commerce growth in the region is a major driver for the growth of contract logistics market. Among the three countries in the region, e-commerce market in Canada is the fastest growing market while the US market is the largest market growing steadily. The e-commerce user penetration is relatively low in Mexico and the Mexican e-commerce market is expected to witness healthy growth rate through the forecast period. The majority of e-commerce companies award contracts to logistics service providers to provide warehousing and distribution service. The high velocity e-commerce business models necessitates the companies to have technological solutions that increase the speed of the fulfillment processes. With the emergence of e-commerce, start-ups related to on-demand and cloud based warehousing are gaining popularity. These companies offer flexibility to the companies in terms of using the warehousing space according to the seasonal demand instead of long-term contracts for a fixed space. Few examples of such companies include Stord, Flexe, Flowspace. These companies are also being awarded long-term projects by their customers and some companies also offer fulfillment services.[21] This presents tough competition to the existing traditional contract logistics service providers. That is why branching to North America should be one of the first points in "ZAMMLER UKRAINE" LLC strategy.

2.3 Forecasting the change in the efficiency of "ZAMMLER UKRAINE" LLC as a result of the implementation of the proposed measures

According to the calculations, implementation of new techniques there will be significantly change efficiency of work in the warehouse that we can see in table 1 below.

Table 2.1.

Time spent on the warehousing procedures on "ZAMMLER UKRAINE" LLC facilities.

Process	Averag etime spent (minutes)		Deviation
	Current conditions	After implementing Lean technologies	
Unloading cargo	10	7	-3
Placement for storage	15	10	-5
Stacking goods	6	4	-2
Processingof theorder	10	6	-4
Preparing the order and its loading	20	10	-10

Source: compiled by the author according to the annual reports of "ZAMMLER UKRAINE" LLC

As we can see, successful implementation of proposed changes may cut overall time expenses in nearly 40%. Also that will free some workers and costs that will no doubt increase productivity and profits. In order to calculate estimated effect more precisely we will asses technical data about warehouse stock (table 2).

Table 2.2.

Data on stock of inventories in the warehouses of "ZAMMLER Ukraine" LLC

Date	Stock of inventories (tons)		
	2016	2017	2018
01.01.	42697,93	48487,94	54277,95
01.04.	41215,26	46481,87	51748,48
01.07.	37613,87	44856,97	62100,07
01.10.	2587,34	30371,99	56556,64
01.12.	50153,29	54277,95	88402,61

Source: compiled by the author according to the annual reports of "ZAMMLER UKRAINE" LLC

From the table we can see that quantity of goods passing through the warehouses is increasing every year. More importantly with increasingtraffic the

number of workers servicing it should increase proportionally. We can check if it is true in the (table 3).

Table 2.3.

Structure of personnel of warehouses of "ZAMMLER Ukraine" LLC

Speciality	Quantity of workers			Deviation (%)	
	2016	2017	2018	16-17	17-18
Loaders	123	167	183	35,8	9,6
Pickers	83	98	115	18,1	17,3
Storekeepers	15	20	23	33,3	15,0
Managers	3	6	6	100,0	0,0
Other	15	20	34	33,3	70,0
Total	239	311	361	1,3	1,2

Source: compiled by the author according to the annual reports of "ZAMMLER UKRAINE" LLC

As can be seen from the data calculated above, the organization needs a constant influx of labour, because despite the level of automation of its warehouses, a large percentage of operations require direct human participation. As a result, there is a steady growth in the number of staff and obviously expenses on salary. We can also see a strict correlation between traffic that goes through the warehouse and number of workers currently employed. We can suggest that there is an interdependence between these two factors. So estimated changes may affect the structure of labour as well. First let us analyze influence of proposed changes on the quality of customer service (table 4).

Table 2.4.

Indicators of material and labour resources utilization of "ZAMMLER Ukraine" LLC

Process	Current conditions	After implementing Lean technologies	Absolute deviation	Relative deviation
Capacity utilization %	96	70	-26	-27
Total number of orders, pcs.	15800	18700	2900	18
Number of untimely executed orders, pcs.	1800	700	-1100	-61

Continuation of table 2.4

Number of timely executed orders, pcs.	14000	18000	4000	29
Number of untimely executed orders, in% of the total quantity	11,4	3,7	-7,7	-68
Number of timely executed orders, in% of the total number	88,6	96,3	7,7	9

Source: compiled by the author according to the annual reports of "ZAMMLER UKRAINE" LLC

From this table we can see that, implementation of proposed measures permits us to increase the productivity of the enterprise at the same time decreasing general quality through reducing number of mistakes that led to untimely executions of the orders. Really, they help to create an efficient supply chain can deliver lower costs throughout the process, and those lower costs can then be passed on to the customer, making the company's services more affordable. This helps the company acquire a larger market share and outpace its competitors.

Though we can see obvious benefits of this decision it is yet unclear if the additional profit generated by it will be enough to cover the expenditures on its implementation. In order to find out we shall use the efficiency analysis. Having analyzed experience of other logistical companies who have implemented Lean strategy we have developed a set of steps company should take to achieve the desired result. It includes:

- Forming a project team - in order to plan and manage the project we need to gather specialists directly involved in the activity (warehouse managers, engineers) as well as top-management representatives to ensure the compliance of the project with general strategy of the company.
- Creating a detailed plan of actions -usually necessary changes include:

~ Creating new functional department or changing role of department of planning

~ Upgrading physical infrastructure (includes but not limited to: development of an address system for placement and storage of products, increasing number of loading/unloading gates, implementing RFID technology, robotisation of manual work.

~ Updating software - buying new solutions, joining different systems together to create faster and more flexible environment.

- Choosing contractors and suppliers and arranging contracts.

We have as well calculated certain average values of realisation of such project which you can see in table 5.

Table 2.5

Estimated data on the expenses and financial efficiency of implementing Lean system

Indicators	Value (thousand dollars)
1. Project cost	42,08
3. Expected increase in profits due to reduced service time	40
4 Cashflows by year	
• • 1 year	15000
• • 2 year	25 000
• • 3 year	35 000
• • 4 year	39 000
• • 5 year	48 000
5. Discount rate,%	25
6. Acceptable payback period, years.	5

Source: compiled by the author

In practice, project performance criteria are used to evaluate investment projects in order to decide on the appropriateness of financing: net present value (NPV), return on investment index (RI), discounted return on investment (DROI), internal rate of return (IRR), discounted payback period investment (DPP), cost-benefit ratio (BCR). Indicators that belong to this group of criteria take into

account the factor of loss of value by money over the time and are determined based on the reduction of cash flows (or costs and profits).

First we shall calculate an NPV index:

$$NPV = \frac{15\,000}{(1+0.25)^1} + \frac{25\,000}{(1+0.25)^2} + \frac{35\,000}{(1+0.25)^3} + \frac{39\,000}{(1+0.25)^4} + \frac{48\,000}{(1+0.25)^5} -$$

42080=79536-42080=37456

We see that since as a result of NPV calculations for this project is > 0, this project is effective and appropriate for adoption.

Now lets calculate return on investment index

$$PI = \frac{79536}{42080} = 1.88$$

We see that PI> 1, which indicates that the project is profitable in a long term, therefore it should be accepted.

Lets calculate discounted return on investment

$$DROI = 1.88 - 1 = 0.88$$

The obtained value of this indicator (DROI = 0.88> 0) once again proves the feasibility of accepting the submitted project.

In order to calculate the IRR, we have to findfind the value of NPV at a discount rate of i = 50% which we will do in the table 6.

Table 2.6.

Calculation of the NPV of the project at a discount rate of 50%

Periods	Future value	Discounted multiplier at a rate of 50%	Real value
0 year	42080	1	42080
1 year	15000	0,8	12000
2 year	25000	0,391	9775
3 year	35000	0,244	8540
4 year	39000	0,153	5967
5 year	48000	0,095	4560
NPV			-1238

Source: compiled by the author

$$IRR = \frac{25 + 37456(50 - 25)}{37456 - (-1238)} = 49.2\%$$

The internal rate of return is 49.2%, which exceeds the effective barrier rate of 25%, respectively, the project is accepted.

To calculate the DPP, we made an auxiliary table 7, which determines the accumulated discounted cash flow, which will be used to calculate the value of the discounted payback period.

Table 2.7.

Calculation of accumulated discounted cash flow

Period	Future value	Discounted multiplier at a rate of 25%	Real value	Accumulated discounted cashflow
0 year	-42080	1	-42080	-42080
1 year	15000	0,8	12000	-30080
2 year	25000	0,64	16000	-14080
3 year	35000	0,512	17920	3840
4 year	39000	0,4096	15974,4	19814
5 year	48000	0,32768	15728,64	35543.04

Source: compiled by the author

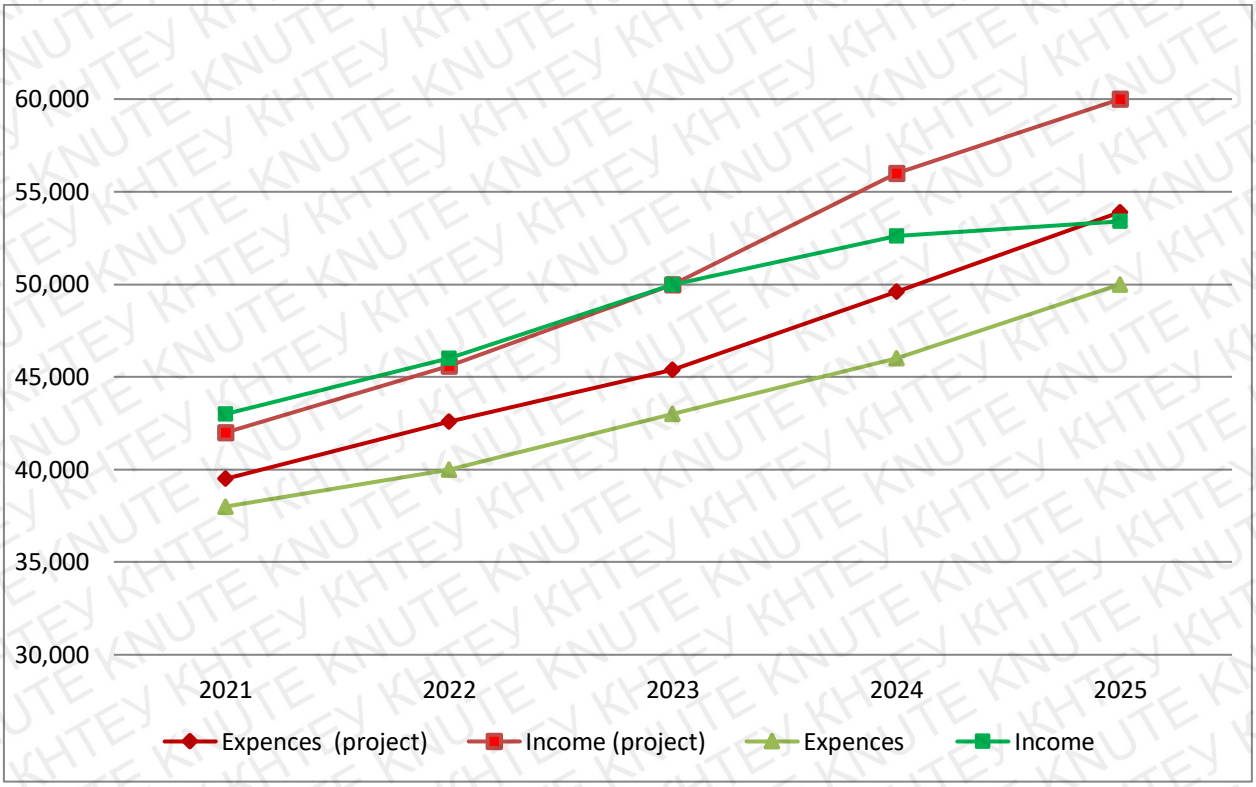
$$DPP = 3 + 14080/15974.4 = 3.88\ y.$$

Thus, the project will pay off in 3.88 years. Since the payback period does not exceed the limit set in the organization (5 years), the project is accepted and is profitable

Having conducted such analysis we can visualise potential effect of proposed changes on the financial result of the company which are shown in tables 8 and 9.

Table 2.8

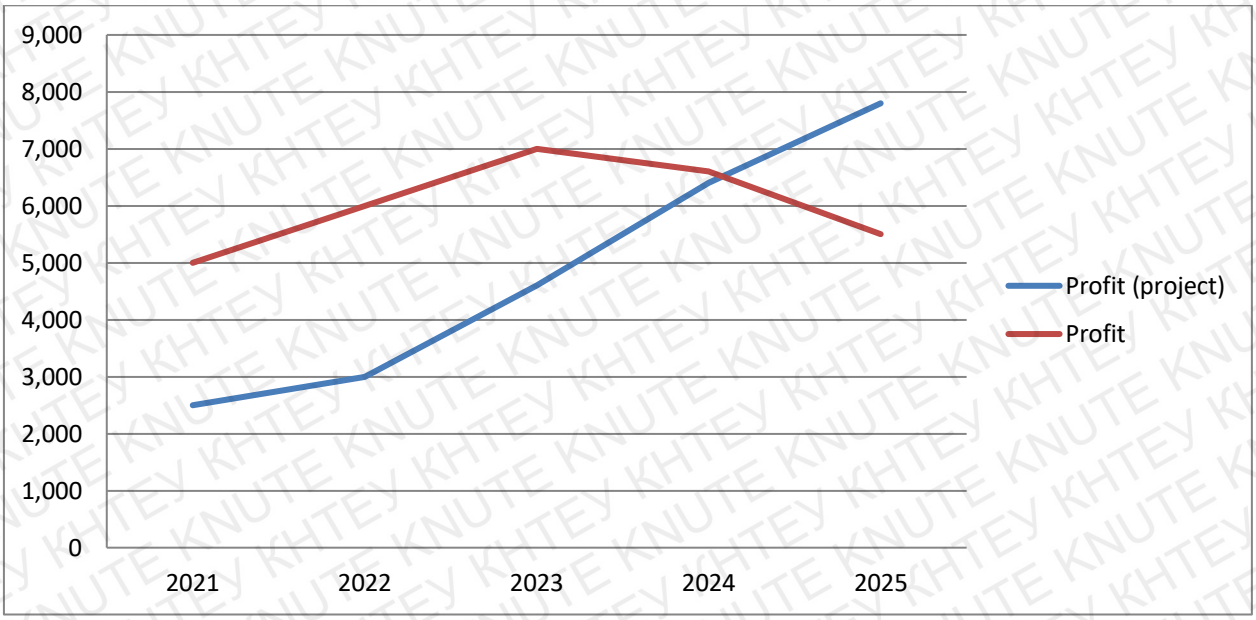
Forecast of influence of proposed innovations on income and expenses of the company



Source: compiled by the author according to the calculations

Table 2.9

Forecast of influence of proposed innovations on profits of the company.



Source: compiled by the author according to the calculations

As we can see on the graphs shown, at the period of first three years after beginning of implementation the project will require serious expenses which will have a negative impact on the profit therefore deteriorating financial stability of "ZAMMLER UKRAINE" LLC. Though starting from the fourth year first results will appear in form of increased efficiency, which will permit the income to grow, increasing profit. In a long-term we can predict that costs will decrease due to the fact that there is no more need to actively spend funds on buying equipment and programming solutions which will lead to more increase in profit. At the same time in case if company will refuse to innovate in a long term it will be beaten by the new enterprises which will be more productive due to the active use of new technologies. Upon the fact of rising competition "ZAMMLER UKRAINE" LLC will start losing its clients and as a result profits.

Based on the results obtained, we can conclude that the implementation of the proposed project is necessary.

CONCLUSIONS TO SECTION 2

Ways to increase the efficiency of the main processes in the warehouse were identified, the types of work that are part of the process of direct improvement were characterized, the technology of warehousing processes was improved through the implementation of the proposed project. Specifically we have concluded that due to insufficient level of modernization and automation Zammler`s logistic system is not as efficient as it could be. One of the particular problems is the length of ordering cycle time and the volatility which often have a big effect on the costs and flexibility for the purchasers. So it is regarded as an important reference when choosing suppliers as it directly threatens the company's market competitiveness. Currently this period is less around a day which is good enough to keep clients satisfied but not enough to become a leader on the market. In order to change that and eliminate the threat of losing its position on a market we have developed a set of measures. Practice has shown that for the effective operation of the warehouse one of the most important points is the correct and high-quality placement of goods, with maximum use of the warehouse space. By increasing the level of automation of the warehouse, labour costs are reduced, increases the speed and quality of unloading and loading work. Creation of a new department of planning will permit the management to control operations on a tactical level and plan the activity better, installation of a new address system increasing number of loading/unloading gates, implementing RFID technology, robotisation of manual work will make the workers more efficient therefore increasing capacity of the warehouses and speed of transaction. Updating software will help creating a united system of control of operations making them faster and easier to manage.

This changes will allow the warehouse to increase the productivity of the warehouse and reduce the time to perform all warehousing operations at a rational time and material costs. Designing warehouse logistics constructively allows to take into account all the features of the details and parameters of the external infrastructure of the warehouse, the requirements of business strategy, resulting in

building a warehouse building option, where the stages of implementation will bring considerable additional income. Continuous optimization and analysis of drains of monthly measures contribute to an average of fifteen percent optimization of space. In general, the introduction of a Lean system is a very promising and easy to implement idea, because it does not require large-scale reorganization of the premises and the purchase of large amounts of additional equipment.

At introduction of address storage in a warehouse the following tendencies are observed:

• approximately 30% of the warehouse volume is freed;

• there is a reduction in staff by an average of 20% and an increase in work efficiency by 50%;

•less dependence on the "human factor", easy and quick adaptation of a new employees;

• reduction of the cost of warehousing operations by an average of 30%, which will allow the company to obtain additional price advantages over competitors;

• increase the speed of order collection by 3 times;

Thus, this storage system will reduce time and increase the speed of order collection, reduce the cost of warehousing operations, which will allow the company to gain additional advantages over competitors, increase efficiency, because finding the right product will be much easier.

In a long term the project will have a positive impact on financial situation of "ZAMMLER UKRAINE" LLC as it will lead to increasing in profits, higher level of client satisfaction which will lead to rising number of clients and developing a positive image of the company. Otherwise, in case if the company will choose to refuse the innovations it will soon lose its current position on a market due to appearance of a new competitors who will use these advanced techniques therefore providing higher quality services for the clients.

So based on the results obtained, we can conclude that the implementation of the proposed project is necessary.

CONCLUSIONS AND RECOMMENDATIONS

In this work we have analysed the activity of LLC "ZAMMLER UKRAINE" LLC UKRAINE". We have found out that this organisation is a Ukrainian 3PL operator which along with typical logistic services provides fulfilment for e-commerce organisations. Its main assets are a wide network of warehouses in Ukraine and Poland and an auto park of approximately 100 vehicles. "ZAMMLER UKRAINE" LLC group is represented in China and Kazakhstan. Company can form a stable supply chain from this points and distribute necessary goods anywhere in the world. If the order cannot be executed by "ZAMMLER UKRAINE" LLC s own means it uses its network of contractors (more than 200 agents around the world) to fulfil clients needs.90% of "ZAMMLER UKRAINE" LLC 's client portfolio is international companies with world names. The group of companies operates warehouses with an area of more than 60 thousand m2 , including the latest class A warehouses. Providing all types of logistics services, "ZAMMLER UKRAINE" LLC applies a single standard of quality and customer service technology. Financial analysis shows that most important indicators show stable increasing, therefore despite unpleasant situation in Ukraine and in the world in general "ZAMMLER UKRAINE" LLC manages to grow and attract new investments and customers. Main services proposed by a company are warehousing, transportation, e-commerce fulfilment. Most of the operations are performed on the territory of Ukraine, but company actively tries to acquire facilities in the foreign countries in order to expand even more. Today "ZAMMLER UKRAINE" LLC has successfully expanded its operations on the territory of China, Poland and Kazakhstan. Having studied foreign experience, it should be noted that success in the organization of warehousing logistics was achieved primarily by those companies that correctly used software products in logistics management, because it is the most important moment in the organization of logistic activity and can bring significant benefits. Here it is important to mention the wish to constantly upgrade and modernize key IT solutions for transport management, warehousing management, enterprise recourse planning and

other systems. Financial analysis shows that most important indicators show stable increasing, as such during the last year company managed to increase its profit by 83%. These results are achieved due to both increase in number of services produced (we can see stable grow in quantity of goods transported) and implementing more cost-efficient techniques that permitted "ZAMMLER UKRAINE" LLC to adjust its profits while keeping costs rather low. While growing company manages to keep balance and financial stability we can see that coefficients of liquidity stay in optimal diapason of around 80%, Return on current assets and net profit margin seem to be growing steadily by approximately 2% per year. Therefore despite unpleasant situation in Ukraine and in the world in general "ZAMMLER UKRAINE" LLC manages to grow and attract new investments and customers.

During the comparative analysis we found out that the warehousing system was the one with the biggest potential for optimization. If we will introduce JIT methods to the company's warehousing logistics it will help to better coordinate, automate and significantly reduce delivery processes, shipment and movement of goods in the warehouse, thereby reducing unjustified material and physical costs, as well as save costs on depreciation of equipment due to lower coefficient of use of equipment. Designing warehouse logistics this way allows to take into account all the features of the details and parameters of the external infrastructure of the warehouse, the requirements of business strategy, resulting in building a warehouse management option, where the stages of implementation will bring considerable additional income.

In general, the introduction of a lean storage system is a very promising and easy to implement idea, because it does not require large-scale reorganization of the premises and the purchase of large amounts of additional equipment.

At introduction of address storage in a warehouse the following tendencies are observed:

- approximately 30% of the warehouse volume is freed;

- there is a reduction in staff by an average of 20% and an increase in work efficiency by 50%;
- no dependence on the "human factor", easy and quick adaptation for a new employees;
- reduction of the cost of warehousing operations by an average of 30%, which will allow the company to obtain additional price advantages over competitors;
- increase the speed of order collection by 3 times;

Thus, this storage system will reduce time and decrease the time of order collection, reduce the cost of warehousing operations, which will allow the company to gain additional advantages over competitors, increase efficiency, because finding the right product will be much easier.

After the introduction of the new address system, logistics costs will be reduced for all elements of logistics activities. This is possible due to the introduction of a new cargo warehousing scheme and the introduction of a new order processing and ordering system. After the introduction of the new system, the company ""ZAMMLER Ukraine" LLC will receive a positive financial effect of $ 37,456. net present value. These changes will as well allow: to reduce the term of working capital turnover; reduce the level of illiquid stocks in the warehouse on; reduce the cost of spare parts - an average of 5%; improve the quality of service by an average of 35-40%;

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APPENDICES

Appendice A

Financial report of ZAMMLER UKRAINE" LLC 2015 in thousands hrn.

Balance sheet on 31.12.2015

Assets	Code	On the begining of the period	On the end of the period
Current assets			
Unfinished capital investements	1005	4,2	14,1
Property plant and equipment	1010	129,2	410,8
Initial value	1011	982,8	1 414,9
Depreciation	1012	-853,6	-1 004,1
Biological assets	1020	-	-
Long-term financial investements	1030	6 008,6	6 998,6
Goodwill and intangible assets	1090	-	-
Total current assets	1095	6 142,0	7 423,5
Non current assets			
Inventories	1100	1 028,6	3 346,9
final products	1103	1 026,9	3 240,2
Trade accounts receivable	1125	12 932,4	12 570,4
Budget accounts receivable	1135	129,9	98,6
Other accounts receivable	1155	2 657,0	1 792,3
Current financial investements	1160	-	-
Cash and cash equivalents	1165	1 781,0	2 161,0
Other non-current assets	1190	0,2	16,8
Total non-current assets	1195	18 529,1	19 986,0
Balance	1300	24 671,1	27 409,5

Liabilities	Code	On the begining of the period	On the end of the period
Equity			
Capital and reserves attributable the Company's equity holders	1400	7 716,6	7 716,6
Retained earnings	1420	-4 104,7	-3 301,6
Total equity	1495	3 611,9	4 415,0
Non-current liabilities			

Continuation of appendice A

Borrowings	1595	-	-
Current liabilities			
Short-term bank credits	1600	195,0	-
Trade and other payables	1615	15 341,0	16 753,0
Current income tax liabilities	1620	20,0	11,4
Insurance liabilities	1625	3,7	3,5
Provisions for other liabilities and charges	1690	54 999,5	6 225,6
Total liabilities	1695	21 059,2	22 994,5
Balance	1900	24 671,1	27 409,5

Report on financial results			
Assets	Code	On the begining of the period	On the end of the period
Net income from realsation of services	2000	14 759,7	15 735,9
Other operating income	2120	2 082,3	5 987,7
Other income	2240	14,0	41,3
Total income	2280	16 856,0	21 764,9
Cost of services sold	2050	5 908,9	5 792,7
Other operating expences	2180	10 327,6	14 986,6
Total costs	2285	16 240,8	20 785,1
financial result before tax	2290	615,2	979,8
Income tax	2300	159,6	176,1
Net profit (loss)	2350	455,6	803,1

Appendice B

Financial report of ZAMMLER UKRAINE" LLC 2016 in thousands hrn.

Balance sheet on 31.12.2016

Assets	Code	On the begining of the period	On the end of the period
Current assets			
Unfinished capital investements	1005	14,1	15,3
Property plant and equipment	1010	410,8	446,1
Initial value	1011	1 414,9	1 536,4
Depreciation	1012	-1 004,1	-1 090,3
Biological assets	1020	-	-
Long-term financial investements	1030	6 998,6	7 599,6
Goodwill and intangible assets	1090	-	-
Total current assets	1095	7 423,5	8 507,0
Non current assets			
Inventories	1100	3 346,9	3 634,3
final products	1103	3 240,2	3 518,4
Trade accounts receivable	1125	12 570,4	13 649,8
Budget accounts receivable	1135	98,6	107,1
Other accounts receivable	1155	1 792,3	1 946,2
Current financial investements	1160	-	-
Cash and cash equivalents	1165	2 161,0	2 346,6
Other non-current assets	1190	16,8	18,2
Total non-current assets	1195	19 986,0	25 220,7
Balance	1300	27 409,5	29 763,2

Liabilities	Code	On the begining of the period	On the end of the period
Equity			
Capital and reserves attributable the Company's equity holders	1400	7 716,6	7 716,6
Retained earnings	1420	-3 301,6	-28 731,0
Total equity	1495	4 415,0	-21 014,4
Non-current liabilities			
Borrowings	1595	-	-
Current liabilities			
Short-term bank credits	1600	-	

Continuation of appendice B

Trade and other payables	1615	16 753,0	15 436,0
Current income tax liabilities	1620	11,4	12,2
Insurance liabilities	1625	3,5	3,5
Provisions for other liabilities and charges	1690	6 225,6	7 354,2
Total liabilities	1695	22 994,5	22 805,9
Balance	1900	27 409,5	29 763,2

Report on financial results			
Assets	Code	On the begining of the period	On the end of the period
Net income from realsation of services	2000	15 735,9	20 654,8
Other operating income	2120	5 987,7	7 825,3
Other income	2240	41,3	26,5
Total income	2280	21 764,9	28 506,6
Cost of services sold	2050	5 792,7	9 325,2
Other operating expences	2180	14 986,6	17 683,7
Total costs	2285	20 785,1	27 008,9
financial result before tax	2290	979,8	1 497,7
Income tax	2300	176,1	269,6
Net profit (loss)	2350	803,1	1 228,1

Appendice C

Financial report of ZAMMLER UKRAINE" LLC 2017 in thousands hrn.

Balance sheet on 31.12.2017

Assets	Code	On the begining of the period	On the end of the period
Current assets			
Unfinished capital investements	1005	15,3	14,8
Property plant and equipment	1010	446,1	430,0
Initial value	1011	1 536,4	1 481,1
Depreciation	1012	-1 090,3	-1 051,1
Biological assets	1020	-	0,0
Long-term financial investements	1030	7 599,6	7 326,0
Goodwill and intangible assets	1090	-	-
Total current assets	1095	8 507,0	8 200,8
Non current assets			
Inventories	1100	3 634,3	3 503,5
final products	1103	3 518,4	3 391,8
Trade accounts receivable	1125	13 649,8	13 158,4
Budget accounts receivable	1135	107,1	103,2
Other accounts receivable	1155	1 946,2	1 876,1
Current financial investements	1160	-	-
Cash and cash equivalents	1165	2 346,6	2 262,1
Other non-current assets	1190	18,2	17,6
Total non-current assets	1195	25 220,7	24 312,7
Balance	1300	29 763,2	28 691,7

Liabilities	Code	On the begining of the period	On the end of the period
Equity			
Capital and reserves attributable the Company's equity holders	1400	7 716,6	7 716,6
Retained earnings	1420	-28 731,0	-27 696,7
Total equity	1495	-21 014,4	-20 257,9
Non-current liabilities			

Continuation of appendice C

Borrowings	1595	-	-
Current liabilities			
Short-term bank credits	1600	-	-
Trade and other payables	1615	15 436,0	14 880,3
Current income tax liabilities	1620	12,2	11,8
Insurance liabilities	1625	3,5	3,4
Provisions for other liabilities and charges	1690	7 354,2	7 089,4
Total liabilities	1695	22 805,9	21 984,9
Balance	1900	29 763,2	28 691,7

Report on financial results			
Assets	Code	On the begining of the period	On the end of the period
Net income from realsation of services	2000	20 654,8	23 849,2
Other operating income	2120	7 825,3	9 357,1
Other income	2240	26,5	50,6
Total income	2280	28 506,6	33 256,9
Cost of services sold	2050	9 325,2	11 835,7
Other operating expences	2180	17 683,7	18 356,4
Total costs	2285	27 008,9	30 192,1
financial result before tax	2290	1 497,7	3 064,8
Income tax	2300	269,6	551,7
Net profit (loss)	2350	1 228,1	2 513,1

Appendice D

Financial report of ZAMMLER UKRAINE" LLC 2018 in thousands hrn.

Balance sheet on 31.12.2018

Assets	Code	On the begining of the period	On the end of the period
Current assets			
Unfinished capital investements	1005	14,8	15,2
Property plant and equipment	1010	430,0	441,9
Initial value	1011	1 481,1	1 522,0
Depreciation	1012	-1 051,1	-1 080,1
Biological assets	1020	0,0	0,0
Long-term financial investements	1030	7 326,0	7 528,2
Goodwill and intangible assets	1090	-	-
Total current assets	1095	8 200,8	8 427,2
Non current assets			
Inventories	1100	3 503,5	3 600,2
final products	1103	3 391,8	3 485,4
Trade accounts receivable	1125	13 158,4	13 521,7
Budget accounts receivable	1135	103,2	106,1
Other accounts receivable	1155	1 876,1	1 927,9
Current financial investements	1160	-	-
Cash and cash equivalents	1165	2 262,1	2 324,5
Other non-current assets	1190	17,6	18,1
Total non-current assets	1195	24 312,7	24 983,8
Balance	1300	28 691,7	29 483,7

Liabilities	Code	On the begining of the period	On the end of the period
Equity			
Capital and reserves attributable the Company's equity holders	1400	7 716,6	7 716,6
Retained earnings	1420	-27 696,7	-28 461,2
Total equity	1495	-20 257,9	-20 817,1
Non-current liabilities			

Continuation of appendice D

Borrowings	1595	-	-
Current liabilities			
Short-term bank credits	1600	-	-
Trade and other payables	1615	14 880,3	15 291,0
Current income tax liabilities	1620	11,8	12,1
Insurance liabilities	1625	3,4	3,5
Provisions for other liabilities and charges	1690	7 089,4	7 285,1
Total liabilities	1695	21 984,9	22 591,7
Balance	1900	28 691,7	29 483,7

Report on financial results			
Assets	Code	On the begining of the period	On the end of the period
Net income from realsation of services	2000	23 849,2	30 548,6
Other operating income	2120	9 357,1	10 451,9
Other income	2240	50,6	68,3
Total income	2280	33 256,9	41 068,8
Cost of services sold	2050	11 835,7	14 984,6
Other operating expences	2180	18 356,4	20 478,6
Total costs	2285	30 192,1	35 463,2
financial result before tax	2290	3 064,8	5 605,6
Income tax	2300	551,7	1 009,0
Net profit (loss)	2350	2 513,1	4 596,6