МІНІСТЕРСТВО ОСВІТИ І НАУКИ
НАЦІОНАЛЬНИЙ АВІАЦІЙНИЙ УНІВЕРСИТЕТ
ФАКУЛЬТЕТ ТРАНСПОРТУ, МЕНЕДЖМЕНТУ І ЛОГІСТИКИ

Кафедра менеджменту зовнішньоекономічної діяльності підприємств

ДОПУСТИТИ ДО ЗАХИСТУ
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_____ *Кириленко О.М.*
“__” _____2020

КВАЛІФІКАЦІЙНА РОБОТА

(ПОЯСНЮВАЛЬНА ЗАПИСКА)
ВИПУСКНИКА ОСВІТНЬОГО СТУПЕНЯ
“МАГІСТР”

Тема: Управління збутовою діяльністю ТОВ «ФПС Україна»

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NATIONAL AVIATION UNIVERSITY

Management of Foreign Economic Activity of Enterprises Department

ALLOW TO THE DEFENSE
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"___"_____2020

Q U A L I F Y I N G W O R K

(EXPLANATORY NOTE)
EDUCATIONAL DEGREE "MASTER"

Topic: Distribution management of LLC «FPS Ukraine»

Performed by: Tkachyk Yehor Andriyovich

Scientific adviser: Doctor of Economics, Associate Professor, Head of the Department of Management of Foreign Economic Activity of Enterprises Kyrylenko Oskana Mykolayivna

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Kyiv-2020

NATIONAL AVIATION UNIVERSITY

Faculty FTML Department Management of Foreign Economic Activity of Enterprises

Educational level Master

Specialty: 073 "Management"

APPROVED
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TASK
to perform Qualifying Work by student
Tkachyk Yehor Andriyovich
(surname, name, patronymic)

1. Topic of thesis: Distribution management of LLC "FPS Ukraine"
_____approved by the Rector order of ***01/10/2020***, № ***1848/CT***

2. Deadline of thesis: ***from 05/10/2020 to 31/12/2020***

3. Initial data for qualifying work: ***Accounting reports of LLC "FPS Ukraine": balance (form №1), Report on financial results (form №2), scientific works, Internet resources.***

4. The content of the explanatory note (list of issues to be developed):

Required: ***to examine and analyze the essence of distribution management and logistics of enterprise, peculiarities of performing the process of distribution of company's products, current state of distribution and logistics in industrial sector in the conditions of market economy; to perform the analysis of financial and economic activity of LLC "FPS Ukraine"; to analyze distribution management and main focuses of it in LLC "FPS Ukraine"; to make suggestions for improving distribution management and its focuses in LLC "FPS Ukraine" and justify the ways of their implementation.***

The list of mandatory graphic material:

Theoretical part: tables –1,

Analytical and research part: tables – 9, fig. – 6,

Project and advisory part: tables – 11, fig. – 6

SCHEDULE

№	Stages of Bachelor Thesis performing	Deadline of stages	Comment
1.	Collection and analysis of financial statements of LLC “FPS Ukraine”	01.09.2020 - 04.10.2020	done
2.	Identification and analysis of peculiarities of the distribution management in industrial sector at present stage	05.10.2020- 15.10.2020	done
3.	Identification of main directions and focuses of distribution management of “FPS Ukraine”	before 25.10.2020	done
4.	Formation of a list of references used in the analysis of distribution management in general, and in industrial sector in particular	before 29.10.2020	done
5.	Preparation and design of the analytical and research section of the qualifying work	before 01.11.2020	done
6.	Preparation and design of the theoretical section	before 14.11.2020	done
7.	Choice of directions for improvement of distribution management and ways of its possible reorientation, performing economic calculations in project section and their explanation	before 20.11.2020	done
8.	Formation of the project and advisory section of the qualifying work	Before 28.11.2020	done
9.	Final design of the qualifying work (content, introduction, conclusions, appendices, etc.)	Before 05.12.2020	done
10.	Preparation of the report and presentation of the qualifying work	Before 12.12.2020	done
11.	Signing of the necessary documents in accordance with the established procedure, preparation for the defense of the qualification work and preliminary defense of the qualification work at the graduating department	Before 18.12.2020	done

Student _____(***Tkachyk Y.A.***)

Scientific adviser of Qualifying Work _____(***Kyrylenko O.M.***)

АНОТАЦІЯ

Кваліфікаційна робота присвячена вивченню особливостей здійснення збутової діяльності підприємств, і пошуку методів і напрямків її поліпшення. Сюди також входить розробка пропозицій по зміні фокусу збутової діяльності, пошук нових напрямків збуту на базі товариства з обмеженою відповідальністю «ФПС України»

У вступі визначається актуальність і практична цінність обраної теми дослідження, вказуються основна мета і завдання дослідження, предмет і об'єкт дослідження, вказуються наукові методи дослідження.

Перший розділ присвячений теоретичним основам збутової діяльності підприємства, методом її здійснення і способам доставки: розкрито суть збутової діяльності, основні види транспортування з їх перевагами і недоліками, проаналізовано вплив правильно організованих збутових ланцюгів і логістичних процесів на ефективність витрачених коштів і прибутковість.

У другому розділі представлені загальні характеристики досліджуваного підприємства, проаналізовані його фінансово-господарська та зовнішньоекономічна діяльність, а також дано детальний опис діяльності підприємства і представлений фотозвіт з Добропільського заводу.

У третьому розділі описується поточна збутова діяльність підприємства, актуальні маршрути поставок, повний список поточних закупівельників і схему розподілу проданої продукції, а також надано рішення щодо виходу на ринок Туреччини з економічним обґрунтуванням.

У висновках і пропозиціях узагальнені результати дослідження.

Ключові слова: зовнішньоекономічна діяльність, експорт, імпорт, планування, організація, підрядник, збагачення вугільних відходів, збутова діяльність.

АННОТАЦИЯ

Квалификационная работа посвящена изучению особенностей осуществления сбытовой деятельности предприятий, и поиску методов и направлений ее улучшения. Сюда также входит разработка предложений по смене фокуса сбытовой деятельности, поиск новых направлений сбыта на базе общества с ограниченной ответственностью «ФПС Украина»

Во введении определяется актуальность и практическая ценность выбранной темы исследования, указываются основная цель и задачи исследования, предмет и объект исследования, указываются научные методы исследования.

Первый раздел посвящен теоретическим основам сбытовой деятельности предприятия, методом ее осуществления и способам доставки: раскрыта суть сбытовой деятельности, основные вида транспортировки с их преимуществами и недостатками, проанализировано влияние правильно организованных сбытовых цепей и логистических процессов на эффективность расходуемых средств и прибыльность.

Во втором разделе представлены общие характеристики исследуемого предприятия, проанализированы его финансово-хозяйственная и внешнеэкономическая деятельность, а также дано детальное описание деятельности предприятия и представлен фотоотчет с Добропольского завода.

В третьем разделе описывается текущая сбытовая деятельность предприятия, текущие маршруты поставок, полный список текущих закупщиков и схему распределения проданной продукции, а также предоставлено решение по выходу на рынок Турции с экономическим обоснованием.

В выводах и предложениях обобщены результаты исследования.

Ключевые слова: внешнеэкономическая деятельность, экспорт, импорт, планирование, организация, подрядчик, обогащение угольных отходов, сбытовая деятельность.

ANNOTATION

Qualifying work is devoted to the study of the features of the distribution management of enterprises, and the search for methods and directions for its improvement. This also includes the development of proposals for changing the focus of sales and distribution activities, the search for new sales areas on the basis of the limited liability company "FPS Ukraine"

In the introduction, the relevance and practical value of the selected research topic is determined, the main goal and objectives of the research, the subject and object of research are indicated, scientific research methods are indicated.

The first section is devoted to the theoretical foundations of the distribution management of the enterprise, the method of its implementation and methods of delivery: the essence of sales activities, the main types of transportation with their advantages and disadvantages are disclosed, the influence of properly organized distribution chains and logistics processes on the efficiency of spent funds and profitability is analyzed.

The second section presents the general characteristics of the investigated enterprise, analyzes its financial, economic and foreign economic activities, and also gives a detailed description of the enterprise's activities and presents a photo report from the Dobropillia plant.

The third section describes the current distribution management of the enterprise, the current supply routes, a complete list of current buyers and distribution of the products sold, and provides a solution to enter the Turkish market with economic calculations.

The conclusions and proposals summarize the research results.

Key words: foreign economic activity, export, import, planning, organization, contractor, coal waste enrichment, distribution.

A LIST OF SYMBOLS, ABBREVIATIONS AND TERMS

LLC – Limited Liability Corporation

etc. - et cetera: and other similar things.

USA – United States of America

R&D – Research and Development

VAT – Value Added Tax

UNCTAD – United Nation Conference on Trade and Development

MTS – Material-technical supply plan

CEO – Chief Executive Officer

TPP – Thermal Power Plant

TPS – Thermal Power Station

CFR - Cost and Freight

GDP – Gross Domestic Product

CONTENT

INTRODUCTION

Relevance of research. For the smooth functioning of logistics chains of various lengths and purposes, providing services for the management and maintenance of material flows, it is necessary to have appropriate support. The efficiency and rhythm of the work of service enterprises, organizations and firms largely depends on the complete and rational provision. Such support should be comprehensive - from legal to informational and technical.

Improving management methods using the old traditional methods in the context of the formation of a mixed economy can lead to a significant decrease in the efficiency of enterprises, organizations and firms. Based on market requirements, logistics must fully meet their needs in a new way. At the same time, the development of logistics should correspond to the changes taking place in the sectors of the economy served. The material flow in logistics should be formed on the basis of real solvent volumes of consumption and production of commodity resources. The length of supply chains and their organizational and management structures should adequately reflect the nature of changes in modern production and economic relations, deprived of the former state planning and control. Violation of such proportionality in development can lead to a shortage of commodity resources. The development of logistics is also influenced by other market factors that ensure the successful development of logistics technologies.

The formation in Ukraine of a mixed economy and a competitive environment in the field of commodity circulation, significant changes in the system of organizational and economic relations between participants in the transport process required the search for new approaches to ensuring the effective functioning of transport and distribution systems for servicing the economy and the population of large cities as geo-economic centers for the formation of freight flows.

The process of globalization and integration of economic entities in transport and distribution systems for servicing goods movement has especially affected large sub-urban industrial zones, for example zones in Zaporizhzhia, Dnieper, areas in Donetsk region.

In the context of the development of market relations, the organization of resource provision in large cities is characterized by a large number of intermediaries, a low level of use of transport and terminal potential, which leads to a high share of transport and logistics costs in prices of end-use goods and a decrease in the competitiveness of domestic products in the domestic and foreign markets. Currently, the total logistics costs account for about 30% of the gross domestic product (GDP) of Ukraine. For comparison, in economically developed countries of the world, these costs are 10-12%. The lack of a progressive system for servicing goods movement, based on the logistics technology accepted in world practice, complicates the process of providing the city with the necessary commodity resources, reduces the efficiency of using the rolling stock of transport, but even more affects the amount of demand for working capital to ensure the process of delivering products from production to consumer. The experience of using logistics systems in developed countries shows the following economic efficiency: reducing transport costs by 7-20%, reducing the cost of loading and unloading and storing material resources by 15-30%, total logistics costs by 12-35%, acceleration turnover of material resources by 20-40% and a decrease in stocks of finished products by 30-50%.

The transport and distribution system of the city should be considered as a logistics system with material, information and financial flows, interconnected by the decision-making process in accordance with the principle of integrated logistics.

In recent years, the results of a number of studies in the field of theory and practice of the formation and evaluation of the efficiency of transport and distribution systems have been published, among which the works of V.N. Livshits, V.S. Lukinsky, L.B. Mirotina, A.G. Nekrasov, Y.M. Nerusha, V.I. Sergeeva, S.A. Panova, M.P. Ulitsky, A.D. Khmelnitsky and other authors. It should be noted that most of the work is devoted to the formation of regional transport and distribution systems. Certain theoretical and practical issues of the formation of urban transport and distribution systems were considered in the works of N.F. Zhemaldinova, I.E. Krygina, P.A. Elyashevich, I.P. Elyashevich.

The research object are the logistics chains during the production and distribution of goods of the enterprise.

The research subject is a set of theoretical, methodical and practical approaches to the evaluation and development in the main directions of improving logistics chains during production and distribution of goods of the enterprise.

Purpose of the scientific work is the determination of possible ways to improve the process of performing logistics activities based on analysis of production process and distribution aspects of enterprise's economic activity.

To achieve the set purpose the following objectives were identified:

- to examine the theoretical basis of transport and distribution logistics;
- evaluation of delivery and handling schemes;
- to analyze the peculiarities of creating new distribution and sales chains.

The practical value of the work will be concluded in identifying areas of improvement of distribution management of the enterprise and offering new possible development paths for improvement of logistics when dealing with international distribution of company's products.

CHAPTER 1.
THEORETICAL BASES OF PERFORMING DISTRIBUTION MANAGEMENT AND EVALUATION OF DELIVERY AND HANDLING SCHEMES

1.1 The essence and importance of the delivery and handling of goods in the current economic environment

Packaging is a means or a set of means that protect products from damage and loss, protect goods from contamination during transportation, and promote storage and sale of products.

Moreover, civil law imposes on the seller the obligation to transfer the goods to the buyer in containers or in packaging, if the goods by their nature require packaging. The goods must be packed in such a way as to ensure their safety under normal conditions of storage and transportation. These requirements are indispensable conditions of the sales contract.

If the regulatory enactments provide for mandatory requirements for packaging, then the seller must transfer the goods to the buyer in the packaging that meets the established requirements.

If the seller violates the requirements established by civil law and transfers the goods to the buyer without packaging or in improper packaging, then the buyer may demand:

- pack the goods;
- replace inappropriate packaging;
- reduce the price of the product;
- replace the product;
- take the goods back and return the money to the buyer.

Many enterprises sell their products themselves. In addition to production costs, they incur sales-related costs - selling costs. They include the costs of packaging, packing, loading. Depending on the method of pricing adopted at the enterprise, the cost

of the products sold may also include the cost of delivery. If, when concluding a supply contract, a price is set on the terms of delivery of goods to the point of destination (free - to the destination station, to the buyer's warehouse) at the expense of the supplier, then the delivery costs shall also be included in the commercial expenses.

Selling expenses are the costs of marketing and selling products. Typically, they include:

- costs of containers and packaging;
- costs of delivery of products to the station of departure, loading into wagons;
- payment for the services of specialized transport organizations;
- commission fees;
- expenses for installation supervision;
- expenses associated with holding exhibitions;
- advertising costs;
- other expenses.

The costs of containers and packaging are taken into account in commercial expenses when the packaging and packaging of finished products is performed after it has been delivered to the finished product warehouse. If the packaging is made in the shops before the delivery of the finished product to the warehouse by the forces and means of the shop, then the cost of the container is included in the production cost.

Taking into account the uniqueness of the products, the cost of commercial expenses includes installation and commissioning costs at the buyer's enterprise.

Product packaging can occur:

- in the finished goods warehouse, which is typical for the mass production of products that are small in weight and dimensions. In this case, the costs of containers and packaging are accounted for independently, in addition to the price of materials;
- if the product is large, then its packaging takes place in packing areas (workshops) with further transfer to warehouses. At some enterprises packaging of products – for example combines and spare parts - takes place in the sales department with simultaneous loading onto railway platforms and motor vehicles;

- if the area nearby allows such possibility, as at LLC “FPS Ukraine”, then the preliminary packing takes place near production facilities;

- in the case of a single production of large-sized and heavy-weight products, packaging is made at the assembly areas, where there are cranes of heavy lifting capacity. Heavy goods are transported in a packed form to the place of loading for transport. Usually, all enterprises that produce large products have their own access roads, on which they are loaded onto railway transport and handed over to the administration of the railway station.

Container and packaging costs may include:

A) the cost of manufacturing containers:

- costs for calculations and production of packaging drawings and documentation;

- expenses for materials (metal, lumber, anti-corrosion lubricants, etc.);

- the cost of machine tools (cost of electricity, compressed air, etc.);

- depreciation of equipment in the manufacture of packaging;

- labor costs of workers (in carpentry workshops, welding area)

- a unified social tax charged on workers' wages;

B) the cost of packaging work:

- costs for the operation of packaging equipment, equipment and mechanisms, forklifts, cranes (cost of electricity, compressed air, etc.,);

- the cost of wages for workers during installation, stacking of products in containers and their conservation and fastening to containers;

- a unified social tax charged on workers' wages.

Transportation costs for the delivery of products to the buyer are accounted for on a separate line, because have a significant share in commercial costs. These include:

- the cost of the freight rate by rail (auto) transport;

- the cost of station costs at the railway station;

- wages to workers for loading and securing products on platforms, gondola cars (car bodies);

- unified social tax charged on workers' wages

1.2 Optimization of delivery and handling costs

Modern ideas about the transportation of goods in Ukraine began to change significantly with the development of market relations - from transport as an industry equated to industrial sectors, to the service sector - transport service. Therefore, consumers of transport services choose such types of transport and transportation methods that provide the best quality of logistics services.

Transport service in modern conditions includes not only the actual transportation of goods from the supplier to the consumer, but also a large number of forwarding, information operations, cargo handling services, insurance, security, etc. Therefore, transportation can be defined as a key logistics function associated with the movement of products by a vehicle (or vehicles) using a certain technology in the supply chain, and consisting of logistics operations and functions, including forwarding, cargo handling, packaging, transfer of ownership of goods, insurance of risks, customs procedures, etc.

At the level of the company's logistics management, transportation management consists of several main stages:

· Choice of the type of transport;

· Choice of transportation method (type of transportation);

· Choice of vehicle;

· Selection of a carrier and logistics partners for transportation;

· Optimization of the parameters of the transport process.

When organizing transportation, it is necessary to coordinate and comprehensively plan its operations together with other logistic functions, for example, warehousing, cargo handling, packaging, etc.

There are the following main types of transport: railway, sea, inland waterway (river), road, air, pipeline.

Each type of transport has specific features, advantages and disadvantages that determine the possibilities of its use in the logistics system.

Table 1.1

Comparative logistic characteristics of different modes of transport

Kind of transport	**Advantages**	**Disadvantages**
Railway	High carrying and carrying capacity. Does not depend on climatic conditions, time of year and day. High regularity of transportation. High speed of delivery of goods at a distance of over 1500 km	Limited number of carriers (natural monopoly). Large capital investments in the production and technical base. High material and energy consumption of transportation. Not available on endpoints. Insufficiently high safety of cargo
Maritime	The possibility of intercontinental transportation. Low cost of long-distance transportation.	Limited geography of transportation. Low delivery speed. Depends on geographic, navigational and weather conditions. Low frequency of sending. Strict requirements for packing and securing cargo. A complex port infrastructure needs to be created.
Inland water	High carrying capacity on deep rivers and reservoirs. Low cost of	Limited geography of transportation. Low delivery speed. Depends

	transportation. Low capital intensity.	on the uneven depths of rivers and reservoirs, navigation conditions. Seasonality. Insufficient reliability of transportation and safety of cargo.
Automobile	High availability. Possibility of cargo delivery "from door to door". High maneuverability, flexibility, dynamism. High delivery speed. The ability to use various routes and delivery schemes. The ability to send cargo in small batches. Wide choice of the most suitable carrier	Low efficiency. Dependence on weather road conditions. High cost of transportation over long distances. Impossibility of long waiting for unloading. Possibility of theft of cargo and theft of vehicles.
Air	The highest speed of cargo delivery. High reliability. Highest cargo safety. Shortest transportation routes.	High cost and tariffs. High capital intensity, material intensity and energy intensity of transportation. Dependence on weather conditions. Limited geographic availability.
Pipeline	Low cost. High	Special types of

	performance. High cargo safety. Low capital intensity.	cargo (gas, oil products, emulsions of raw materials). Transporting only large volumes.

Each mode of transport (with the exception of pipeline) has certain types of vehicles (mobile systems, mobile units) and production and technical base necessary for the operation, maintenance and repair of vehicles. For logistic management, some technical and operational parameters of rolling stock, communication lines and terminals are especially important. When choosing the appropriate mode of transport, the logistics manager must take into account the capacity and carrying capacity, technical and operational characteristics and spatial availability of transport. An important condition for choosing is to ensure the safety of the cargo in transit, compliance with the quality standards of the transportation process, international environmental requirements.

Unimodal (one-type) transportation is carried out by one type of transport, for example, by road. It is usually used when the starting and ending points of transportation of the supply chain are specified without intermediate storage and cargo handling operations. The criteria for choosing a mode of transport in such transportation are usually the type of cargo, the volume of dispatch, the time of delivery of the cargo to the consumer, and the cost of transportation.

Multimodal transportation of goods is usually carried out by two modes of transport, for example: rail - road, river - road, sea - rail, etc. In this case, the cargo is delivered by the first mode of transport to the so-called transshipment point or cargo terminal without storage or with short-term storage and subsequent transshipment to another mode of transport. A typical example of multimodal transport is the service by road transport companies of railway stations or a sea (river) port of a transport hub. The signs of multimodal transportation are the presence of several transport documents, a single tariff rate of freight, a scheme of sequential interaction of participants in the

transport process. In case of direct multimodal transport, the cargo owner enters into an agreement with the first carrier, acting both on his own behalf and on behalf of the next carrier representing another mode of transport. Thus, the cargo owner is in fact in a contractual relationship with both, and each makes settlements with the cargo owner and bears financial responsibility for the safety of the cargo only on “his” section of the route [25, 64].

Combined transport differs from mixed use of more than two modes of transport. The use of mixed (combined) modes of transportation is often due to the structure of distribution channels in the logistics system: large consignments are dispatched from the manufacturer to the wholesale base by rail (in order to minimize costs), and delivery from the wholesale base to retail outlets is carried out by road.

A.N. Rodnikov considers mixed, combined, intermodal transport and direct mixed transport to be synonymous, i.e. "Transportation of goods carried out by two or more carriers of various types of public transport under a single shipping document with the transshipment of goods at the transfer point (or points) without the participation of the cargo owner."

It should be noted that there is still no agreed terminology for the types of transportation (modes of transportation), and this applies not only to Ukraine, but also to international practice. This indicates the need to continue standardization of multimodal transport terminology and the formation of a legal framework. In particular, the RF Law “On Multimodal Transportation” is currently being developed. Here are some definitions regarding transportation methods:

According to the definitions of UNCTAD (United Nation Conference on Trade and Development), “intermodal is the carriage of goods by several modes of transport, when one of the carriers organizes all delivery from the point of departure through one or more transshipment points to the point of destination and - depending on the distribution of responsibility for transportation - issues various types of transport documents, and multimodal - if the person organizing the transportation is responsible

for it along the entire route - regardless of the number of participating modes of transport, while a single transportation document is drawn up. "

In recent years, transportation technology, especially for multi - and intermodal transport, has been associated with the use of freight terminals and terminal complexes in logistics chains. Therefore, the corresponding transportation is called terminal transportation.

One of the reasons for the widespread use of inter / multimodal transportation in logistics is a significant reduction in the cost of transportation when combining several modes of transport.

If we talk about the factors hindering the development of inter / multimodal transportation, then numerous customs formalities remain a serious barrier, leading in a number of countries to unplanned delays, delays, and additional costs.

The problems of registration of transport documents and customs formalities can be solved through the introduction of modern information systems. Today, it is urgent for Ukraine to comprehensively introduce international systems of standards that would make it possible to create transport corridors with a single information space. With the help of satellites and computers, it is possible to monitor transportation in real time.

Reducing logistics costs when introducing inter / multimodal transportations through seaports is due to the following factors:

- Closer interaction with customs, which will lead to a reduction in unproductive downtime of the fleet in Ukrainian ports, primarily due to the preliminary declaration of imported cargo;
- Coordination of the working time for the performance of work by the port and customs;
- Elimination of repeated customs inspections of ships when entering the second Ukrainian seaport;
- Accelerating the passage of export-import and transit cargo through seaports, reducing the volume of stale cargo, which will reduce the need for storage space and lead to an increase in the throughput of transshipment complexes.

Inter / multimodal transportation can be called a new stage in the field of international cargo transportation. Improving the reliability of transport services, reducing the cost and delivery time of goods are achieved through the integration of different types of transport, eliminating the delay of goods from the sender's warehouse to the recipient's warehouse by one operator based on a single technological schedule and the latest computer technologies

The freight forwarding agreement stipulates the obligations of the forwarder to organize the carriage of goods by transport and along the route chosen by the forwarder or the client, to conclude on his own behalf or on behalf of the client a contract (contracts) for the carriage of goods, to ensure the dispatch and receipt of goods, as well as other obligations related to transportation.

The forwarder, as a rule, provides additional services to customers:

- Registration of documents for export - import of goods;
- Fulfillment of customs formalities;
- Checking the complexity and condition of the cargo;
- Loading - unloading of vehicles;
- Payment of duties, fees and other costs associated with transportation;
- Storage, warehousing, sorting, cargo picking;
- Information services, insurance, etc.

As can be seen from the above list of services, freight forwarding firms essentially integrate a large number of logistics operations and functions in the logistics system.

Abroad, many large freight forwarding firms and express delivery companies such as Ryder, DHL, Schenker - BTL, Federal Express, UPS, Lesnay, TNT, ASG AB and others perform a large number of different logistics operations and functions, seeking to capture the largest possible number or length of logistics channels, integrating logistics functions in the territorial zone based on product orientation. This allows firms - manufacturers of finished products and shippers to significantly reduce

costs associated with transportation, cargo handling, storage, improve the quality of logistics services.

In the United States, surveys of the activities of freight forwarding firms serving more than 350 enterprises in various sectors of the economy were presented. It turned out that about 70% of enterprises delegate the functions of performing settlements to transport and forwarding companies.

Warehousing of finished products and material resources is carried out for 22% of enterprises. The choice of the most profitable delivery option, coordination of tariffs with carriers is carried out for 22% of customers; control over the movement of goods - for 15% of enterprises. The creation of information systems for storing and processing logistics data is carried out for 13%, and the organization of electronic data exchange with partners - for 12% of enterprises. The rolling stock owned by freight forwarding companies is used by 11% of enterprises, and for 7%, the level of their inventories in warehouses is monitored.

The list of services is expanding both in volume and quality. Many freight forwarding companies with large cargo terminals carry out long-term storage of finished products of manufacturers, in some cases they buy products, performing the functions of large wholesale trade intermediaries. By integrating logistics operations and functions related to transportation, warehousing, storage, cargo handling, consolidation and sale of products, freight forwarding firms are essentially transforming into logistics firms, providing stable service markets, long-term profits, as well as reducing the logistics costs of manufacturers of finished goods and improving quality of logistics service. The problems of choosing a forwarder are solved similarly to choosing a carrier, however, the list of indicators of the quality of forwarding services will be somewhat expanded. Freight forwarding services are provided mainly for small-lot, packaged-piece cargo, as well as containers and standard packages (formed, for example, euro pallets). Bulky industrial, construction cargo, raw materials, grain, etc. are delivered, as a rule, under agreements between the cargo owner and the carrier.

The auxiliary logistics partners for transportation (if the forwarders do not perform the relevant functions on their own) include customs brokers, insurance, security, information firms and companies, banks and other financial institutions, cargo handling, packing, packaging, cargo terminals, as well as specialized agents and brokers. The systems of criteria and indicators, as well as the procedures for selecting these intermediaries, are extremely diverse. Among the main selection criteria, you can indicate tariffs, reliability, financial stability, complex nature of the service, etc.

Currently, freight forwarding companies and firms perform the following main operations:

Organization and registration of transportation. On behalf of the client, the company tows places on a vehicle (sea, road, rail, river and air transport), and also makes payments for transportation. The freight forwarder agrees with the carrier the date of submission of the respective transport, draws up the title and shipping documents, transfers the cargo to the transport company. These operations are performed by the forwarder when the goods are dispatched at the expense of the sender and, as a rule, on his behalf. Upon receipt of the goods, the freight forwarder provides all types of work for receiving the goods from the carrier at the destination and delivering it to the consignee's warehouse.

If the cargo does not follow a through document, then the forwarder carries out all operations to transfer the cargo from one transport company to another.

Warehouse operations related both directly to the process of cargo transportation and to its storage. In the first case, the cargo is delivered to the warehouse while waiting for the rolling stock at the points of departure or destination, when it cannot be dispatched immediately due to the lack of the required mode of transport. In the second case, the storage of goods in a warehouse can be caused by: its detention at the request of the relevant authorities until the dispute is resolved; storage of cargo, not related to transportation. The latter is an independent type of warehousing and is carried out by special agreement between the interested companies.

Bringing the goods to a transportable condition. The freight forwarder representing the interests of the owner of the goods, when handing over the goods to the carrier, checks its appearance, provides packaging and labeling of goods in accordance with the conditions of carriage and customs regulations of the importing country. In case of damage to the container, packaging or container, the forwarder removes all defects. Otherwise, upon delivery of the goods, the carrier may refuse to accept or make special notes on the condition of the goods in the bill of lading, which is extremely undesirable for the cargo owner, since this is usually followed by a complaint from the buyer.

Preparation of documents submitted to customs authorities for the movement of goods across the customs border. Customs documents include: customs declaration, export and import licenses, certificate of origin of goods, consular invoice, veterinary and sanitary certificates.

In addition, the duties of the forwarder include monitoring the movement of goods during transportation and control of the time of their receipt at the disposal of the recipient. Thanks to the wide correspondent relations in the country, the origin of the goods, the forwarding forwarder, carrying out the shipment, significantly saves time and money, sending the goods along the optimal route.

Freight forwarding companies, as a rule, employ specialists not only on transport issues, customs procedures, international trade and transport customs, but also workers who monitor the market conditions for transport services, in particular, tariffs for sea, rail, road and air transportation ... There are special companies that collect additions and changes to transport tariffs, classify these changes, publish and distribute them to interested customers.

Almost all freight forwarding firms and companies have regular carriers, whom they trust with their cargo. Having received an order to organize the transportation of goods, forwarders establish contacts with transport companies in order to book the necessary vehicles for the goods. In addition, large freight forwarding firms usually

have various means of transport for the transport of goods: trucks, vans, refrigerated road trains.

Freight forwarding firms often keep these vehicles in large specialized trucking companies that provide maintenance.

Large transport and forwarding companies have their own facilities, workshops for the manufacture of containers and packaging of goods, sorting centers, their own fleet of vehicles and equipment, including containers, pallets, lighters and wagons. It should also be noted that a certain part of the transport and forwarding operations are carried out by suppliers of export and consumers of imported products by their special structural units - transport departments or subsidiary subsidiary enterprises.

Freight forwarding companies help exporters to determine the minimum costs of packaging and transportation of goods and to make the optimal calculation of the transport component of its export price. In international trade, there is a practice of drawing up a quotation sheet, which includes all the costs of delivering the goods to the buyer at the destination, with the help of a freight forwarder. These costs usually depend on the basic terms of delivery of the goods, the conditions of the line conferences, etc. For the convenience of exports, many freight forwarding firms may provide not separate elements of transportation costs, but a flat rate, which includes all costs of an international freight forwarder in the process of transporting goods, including costs associated with the issuance of documents and correspondence.

It should also be noted that the freight forwarder often acts as a multimodal transport operator. A modern freight forwarder is often at the same time the owner (or lessee, general contractor) of road trains, sea, river and aircraft. Therefore, having accepted an order for the carriage of goods, he first of all uses his vehicles.

After loading, he issues his own bill of lading to the client, fulfills obligations to him as a regular sea, road or air carrier in accordance with applicable codes, statutes, transport conventions and industry rules for the carriage of goods.

In case of mixed delivery of goods according to the door-to-door scheme, when the cargo owners are completely freed from the worries of organizing transportation, the

forwarder at each stage of the transport process is responsible to the client for the safety and quality of the cargo, for example, when loading at the port:

- for the actions of stevedores,
- during storage - for the operation of terminals,
- during transportation - for the good faith of the carriers, etc.

It should be noted that, in addition to the forwarder who is engaged in day-to-day transport, any person who takes responsibility for the implementation of the contract of carriage and ensures the coordinated actions of various types of transport in the multimodal transport of goods can become a multimodal transport forwarder.

Potential forwarders and agents should keep in mind:

1) when choosing an agent or a freight forwarder, principals give preference not only to competent and reputable, but also proactive firms, acting on the principle of reasonable commercial risk;

2) the presence of a huge number of forwarding and agent firms in each country is due, in particular, to the fact that many freight forwarding enterprises purposefully create in their structures formally independent subsidiaries and grandchildren specialized firms under different names or giving them a different legal status - a joint stock company, partnerships, etc., or, for example, a railway agent, register them in one city, river - in a neighboring one, aviation - at an airport, or add definitions of the type "industrial forwarder", "trade agency" to the name of the enterprise. Thus, the parent company appoints the subsidiary to act as an independent agent or freight forwarder in a particular transaction to serve a particular principal.

Thanks to the introduction of new transport and technological systems, an increase in the carrying capacity and specialization of vehicles, as well as the creation of powerful automated transshipment complexes for bulk and a number of general cargo, manufacturers began to combine the production and transportation of goods within one company. This is how a specialized fleet, train routes, special containers belonging to oil monopolies, miners of coal, iron ore and other minerals, companies producing cars and tractors, traders - wholesalers of meat, edible oils, fruits and vegetables appeared.

In order to optimally solve logistics problems, the agency, forwarding and part of the transport capital merged with industrial and commercial capital, which resulted in the transfer of operations of independent forwarding and agency companies to the transport divisions of the export or import departments of industrial trading enterprises.

However, this phenomenon has not become universal. Enterprises of petrochemistry, grain elevator, flour milling and other industries with an extensive infrastructure considered it reasonable to do otherwise - to outsource the entire range of transport and logistics operations to specialized forwarding companies. Such companies are currently the owners of their own rolling stock, special wagons, vans, tanks, berths, elevators in ports. They are directly involved in the production process and control it, monitor the movement of wagons, cars and containers, adjusting transportation schedules, if necessary, monitor the availability of insurance reserves for tonnage, wagons and containers. An example of such a forwarder is the German company Lexau & Charbot, which specializes in transporting products of German chemical plants through its own berths with its own rolling stock.

The second manifestation of the scientific and technological revolution in transport was the containerization of cargo transportation, the predominant delivery option for which is known as “door-to-door”. In the course of containerization, a serious regrouping of forces and positions of participants in the transport market took place. In the USA and Canada, the position of the shipping and railroad monopolies has strengthened with a simultaneous growth in agency services (75%) at the expense of forwarding services (25%). Only competition from road transport prevented the growth of sea and rail container tariffs. A new type of business has also had a significant impact on this process - the delivery of containers for short and long term lease (leasing). At present, almost half of the world's container fleet belongs to international leasing companies created in the 1970s through investments from banks and insurance companies.

1.3 Logistic approaches to the organization of delivery and processing of goods

Optimizing production management requires going beyond firm boundaries and coordinating relationships with suppliers and vendors. Competitive advantage is increasingly a characteristic not of individual companies, but of coalitions. It is beneficial for every company in the coalition when everyone else subordinates their activities to the above principles of capacity management, inventory management and quality management. These are the reasons for the prevailing trend today towards the development of cooperative ties between companies, their suppliers and sellers of their products.

There are many examples. Companies like Toyota devote a lot of time and effort to helping their suppliers improve production. Gap works with suppliers to obtain identical products from different sources. Raychem helped its suppliers migrate to spot manufacturing so that its own migration efforts did not end with sourcing from partners who made small batch sizes of different products. Laura Ashley has redesigned its information and warehousing systems and achieved a fivefold increase in inventory turnover in three years. National Semiconductor, which cut its delivery time to customers to four days or less, increased sales by more than $ 500 million in two years, while reducing supply chain costs. Here's a reverse example. Compaq Computer estimates that in 1994 it lost more than $ 500 million. just because her computers weren’t always there when and where customers were ready to buy them.

Managing a network of relationships requires a spirit of cooperation with partners rather than competing with suppliers.

Companies' networks are increasingly the source of competitive advantage. Contrary to tradition, you should see suppliers as partners, not a hostile side. The main thing in this new context is the atmosphere of trust. Building trust is not easy, especially when firms are competitors in some markets but must work together to hold onto other markets.

Networking needs to be organized in such a way that everyone is interested in improvements that benefit the entire value chain. For example, if a company simply requires its supplier to keep inventory in order to reduce inventory levels, it will not be possible to reduce costs throughout the supply chain. But overall inventory reductions can be achieved if firms share information that reduces uncertainty and the need for safety stocks, or if the entire supply chain moves to just-in-time, with smaller orders and shorter lead times. The fact is that the potential benefits are greater when it is possible to get rid of a number of costs, and not when these costs are simply passed on to other participants in the supply chain.

Better communication between network partners lowers costs by reducing volatility and uncertainty and improving planning and forecasting.

The old tradition of rivalry between manufacturers and suppliers is reflected in the almost complete absence of information exchange between them. But it’s easier for suppliers to drive down prices by providing them with information that enables them to plan more accurately, hold less inventory, and make smarter supply decisions.

Kanban (Japanese word meaning "card") is a way of organizing just-in-time deliveries. This simple system allows the supplier to deliver just-in-time based on conventional signals from the consumer using a card, fax or empty basket. In contrast to the traditional system, where the supply is carried out on a schedule or in accordance with the forecast, here the supply flow is regulated directly by demand.

Toyota, for example, introduces its material-technical supply plan (MTS) to suppliers. The MTS plan is a computer system that, based on data on the structure of manufactured products, on the needs for parts and assemblies and in accordance with information on the timing of orders for supplies and assembly of units, draws up schedules for placing orders for supply and performing production tasks. This system was originally designed for firms looking to improve their own order planning and supply schedules. But Toyota took a broader approach. It uses MTS's planning system to help suppliers forecast demand for their products. With improved information, suppliers are able to provide assurance of supply with lower safety stock levels. But

Toyota itself does not base its purchase orders on the forecasts of the MTS planning system. The basis of purchase orders is the actual demand for the company's products. And forecasts help suppliers reduce uncertainty and associated costs.

The MTS planning system was expanded and turned into a system of planned production support. Its peculiarity is that it covers the planned needs of the enterprise in human and other resources. A production scheduling system can be used by an individual company or in a supply chain to enable network partners to better plan their activities.

Information systems such as the electronic data interchange system, which makes it possible to automatically notify suppliers of the need for their products, contribute to the improvement of information support in the supply network. Campbell uses this system to improve sourcing accuracy and save grocers from the expense of maintaining large inventories.

Shorter lead times throughout the supply chain allow all participants to reduce costs and improve service quality.

Longer delivery times lead to increased uncertainty, higher inventory costs and less responsiveness to customer requirements. Shorter lead times throughout the chain make it possible to implement a just-in-time system that helps to some degree or another to address each of these issues. Just-in-time features include smaller shipments, shorter lead times, less waste and waste, and a faster response to quality problems. For these systems, supplier relationships are critical because a company cannot reap the full benefits of a just-in-time system unless its suppliers also manage their production and supply in the same way.

Another approach to shortening lead times across the supply chain is to efficiently manage the production of each product so that hot items are produced in advance and less popular items with volatile demand are produced as soon as possible before they are delivered to consumers. This approach improves forecasting accuracy for products with increased demand volatility. Sport-Obermeyer, a manufacturer of ski accessories,

uses this scheduling logic to accommodate the limited manufacturing capabilities of its suppliers and to reduce peak seasonal demands.

When solving the problems of optimizing the management of cargo operations, preliminary in the technology of work of modes of transport in the node, questions are established that decisively affect the management of the transportation process and at the same time, according to the already available information data

Today, one of the conditions for increasing the efficiency of the operational management of transport and logistics systems (TLS) is the introduction of information technology in the technological processes of planning and management. This requires a transition from traditional planning and management methods to those methods where the use of information technology will give the greatest effect. One option is to move from sequential operational scheduling technologies to an object-oriented approach.

The modern approach is based on the method of identifying the entities of the real world to understand and explain how they interact with each other to achieve the required goal, and a distinctive feature is the description of the sequence of actions of the system elements, analysis of the state of each element that makes up the system, as an object, and implementation depending on the result of the analysis of certain actions. At the same time, such components as inheritance, encapsulation, polymorphism, classes, methods, events and properties greatly facilitate replication and modernization of the created product. This approach includes three stages. Building a state information model for formalizing the life cycles of objects and displaying this model with diagrams and transition tables. Interaction between objects is carried out by transmitting messages about events occurring with them.

Development of a process model, in which actions in state models are divided into fundamental and reusable processes. Such a model should be an integral part of the management of a logistic system and consist of a universal one that provides input, data presentation and general management of operating modes, and a functional one, containing calculation algorithms for a specific subject area.

When modeling TLS, an important feature is the assignment of an object to active or passive. Active objects can independently generate a certain set of events (for example, the arrival of rolling stock at the terminal). Passive objects are able to respond only to events generated from outside.

The extension of the OOP principles to the planning and management of TLS makes it possible to use information about the state of control objects based on the analysis of events. Depending on this, using certain methods, it is possible to change the process of the system's functioning, achieving the optimal characteristics of its work. At the same time, significant time losses associated with the sequential technology of the process execution can be reduced due to the parallel execution of methods for various objects or a group of objects.

Methodological support of TLS management provides: automation of management of external business operations between various subjects of the logistics system, optimization of the logistics system due to the parallel execution of individual processes, reliable information about the state of the system in real time.

The introduction of terminal technology widely accepted in international practice, logistics principles of commodity circulation and new progressive technologies of the transportation process is necessary to meet the increased demand for international transportation of goods, which is a consequence of the expansion of foreign economic relations, the development of business processes of a market economy.

Currently, there is a large number of warehouses and cargo-processing enterprises, scattered throughout the territory of small-capacity warehouses, but they, overwhelmingly, do not possess modern cargo-handling technologies, are not equipped and do not meet the demands of domestic and foreign clients for the complexity of services.

CHAPTER 2.
ANALYSIS OF BUSINESS, FINANCIAL AND ECONOMIC ACTIVITIES OF LLC “FPS UKRAINE”

2.1 Characteristic of the economic activity of LLC “FPS Ukraine”

In 1993, for the first time on the territory of the CIS in the city of Torez, Donetsk region, Ukraine, a modular factory for the enrichment of slurries from South Africa was installed and started operating.

The first production - enriched anthracite slurry with an ash content of 10-12% was supplied to the Netherlands by the company "Hugovens" for use in technology of pulverized coal injection.

Currently, the founder of this business on the territory of the CIS - Subsidiary company "FPS Ukraine" (the founder is Fine Particle Services Canada Inc., Toronto, Canada), has been operating in the Ukrainian market for 15 years.

From 1993 to 2002 the company was called the “Joint Ukrainian-British Enterprise "Donetsk International Entrysite"”.

Specialization - processing of highly complex small waste of coal enrichment at its own modular factories produced in South Africa.

Projects implemented by the company:

1993 - Modular factory for processing anthracite coal beneficiation waste at Torezskaya Coal Processing Plant with a capacity of 35 tons per hour - FPS investments.

1997 - Modular factory for the processing of coal waste of anthracite group at TSOF Donetskaya with the capacity of 50 tons per hour - FPS investments

1997 - Modular factory for processing flotation waste of coking coals

At the CIF "Kalininskaya" with a capacity of 100 tons per hour - design, consulting, equity investment.

1998 - Modular factory for processing flotation waste of coking coal on sludge accumulators of Makeyevka coke plant with a capacity of 100 tons per hour.

Designing, delivery of equipment, consulting.

1999 - Modular factory for the processing of flotation waste at the industrial site of TsUP "Sukhodolskaya" with a capacity of 100 tons per hour - design, equipment supply, consulting.

2002 - Modular factory for the processing of flotation waste from Central Processing Plant "Dob- (contracted enrichment) capacity of 50 tons per hour - FPS investment (in 2007, the 2nd five-year contract was signed with the owner of the factory - corporation DTEK (SKM)

2010- Modular factory for the processing of flotation waste from the Oktyabrskaya Central Processing Facility (part of DTEK) Capacity 80 tons per hour - 10 year contract.

Co-founders of the company:

Enrichment technology was developed by High Carbon Products Durban, RSA operating in South Africa since 1976, Great Britain (1984-1990) and Ukraine (since 1993). Specialization - enrichment of coals and highly complex waste of coal enrichment.

In 1984, Hargreaves Industrial Services, one of England's leading coal mining companies, was invited to serve as a contractor for the processing of small coal wastes.

Producer of the main equipment - GM Processing (Pty) Ltd., Middlebrook, South Africa designs, manufactures and delivers modular concentrators for complete cycle and small waste.

Specialization - high ash and fine coals.

Since 1993 has supplied to Ukraine 5 modular factories.

Since its inception, FPS Ukraine has processed more than 3 million tons of sludge and flotation waste from brands A, T, G and I, producing and selling 1 million tons of coal; 370 000 tons of concentrate.

The concentrate produced by the Company "FPS" was supplied to TPP "Varna", Bulgaria, TPP "Voyany" Slovakia, "Krivorozhstal" Ukraine (agglomeration)

Ukrainian TPPs - Slavyanskaya, Starobeshevskaya, Uglegorskaya, Burshtynskaya.

Companies that used our equipment to enrich coking coals supplied concentrate to Makeyevka coke plant.

“FPS Ukraine” made significant input into development of Ukrainian coal processing market, but also attracted many international investors to other spheres of Ukrainian’s economy and thus helped the general economic development of the country.

LLC “FPS Ukraine” is working in highly specialized and narrow sector of economy, also the company works with innovative and unique self-developed technologies, thus this company faces many challenges on the market like small number of buyers and problems with protection of intellectual property. Economic instability of Ukraine and war on Eastern part also does create severe obstacles for smooth development and stable growth of the enterprise.

In this chapter I will apply 5 Forces of Porter Analysis for estimation of position of the company on Ukrainian market; then SWOT analysis will be used for showing the reasons why this company operates for so long and helps the development of the coal sector and Ukrainian economy in general.

Five Forces of Porter Analysis has shown that:

- Threat of new entrants is low
- Threat of substitution is low
- Bargaining power of suppliers is low
- Bargaining power of customers is moderate
- Competitive rivalry is low

Next step will be the description of all these forces in Table 2.1

Table 2.1

Five Forces of Porter Analysis for LLC “FPS Ukraine”

Threat of new entrants (Low)	**Threat of substitution (Low)**	**Bargaining power of suppliers (Low)**	**Bargaining power of customers (Medium)**	**Competitive rivalry (Low)**
Highly specified industry	Company-owned highly efficient technology	Direct connection with supplier of equipment	Small number of clients	Small number of competitors
High entry costs	Low number of similar offers at the world market	Supplier’s discounts for the company	Low substitute availability	Higher efficiency in comparison with others
Importance of previous reputation on this market		Common projects with supplier company	High switching costs	

Recommendations. The results of this Five Forces analysis of “FPS Ukraine” shows that bargaining power of customers is the most significant force impacting the business. Thus, the company must prioritize this force in its strategic formulation. A recommendation for “FPS Ukraine” to enhance its connections with international partners, strengthen connections with authorities all over the world to gain some acknowledgement. Better impact of clients on business is achieved through marketing measures and improvement of business communications with existing clients. For example, organization of specific business meeting for potential partners, investors or customers may be a good solution.

The study of the internal environment is most often based on SWOT-approach, but only in part SW, that is, from the perspective of the strengths and weaknesses of the organization. SNW - an abbreviation of three words that mean: S - Strength - force, N - Neutral - neutral position, W - Weakness. At SNW-all approach concerning SW-approach remains. As a neutral medium is usually examine the market situation for this particular situation. So, SNW-approach - a rational development of SW / SWOT-approach (Table 2.2).

The organization, based on their specific characteristics (production, relations with suppliers, strategy, scope, competitive strength and competitive position) can adjust as a list of characteristics that reflect the peculiarities of the internal environment, and subsequently list the strengths and weaknesses of the organization.

Table 2.2

SW-Approach table

Strategic characteristics	**S**	**N**	**W**
Strategic alliances	+		
Organizational structure		+	
Corporative culture		+	
Level of marketing			+
After selling services	+		
Level of production		+	
Product	+		
Reputation at market	+		
Quality of personnel	+		
Level of management	+		

Corporate strategy		+	
Innovations	+		
Ability to leadership		+	
Finances			+
Relations to authorities		+	

After making a list of opportunities and threats, as well as a list of strengths and weaknesses of the organization comes the stage establishing links between them. At this stage SWOT matrix was conducted.

SWOT analysis is the analysis of strong sides and weaknesses of the enterprise, opportunities and threats of the external environment. SWOT analysis includes the analysis of a situation in the company, and also the analysis of external factors and a situation in the market. All data comes down in one table (the SWOT analysis matrix) subsequently. By analyzing the data located in the table possible options of development of the company at change of external factors are developed, modes of use of strengths for reduction of risks etc. (Table 2.3).

Table 2.3

SWOT-analysis of the company

Strengths	**Weaknesses**
High quality of final product Unmatched innovative technology All inclusive installation of equipment and provision of training for client's staff Highly professional and experienced staff	Temporary financial difficulties of the company Not big volume of provided service or produced final product Low notoriety of the company at world market

Opportunities	Threats
Creation of strong business connections at international market Increase of notoriety through marketing or current partners' help	Worsening of current financial difficulties of the company Worsening of overall economic and political situation

Thus, we may say that company currently is holding-up relatively good, but because of the low number of current clients and previous unsuccessful projects that caused severe additional expenditures, "FPS Ukraine" for now has some financial difficulties that affect its possibilities of growth and slow down development of new business projects.

"FPS Ukraine" is a company that sells, then produces and installs plants for processing of coal waste: company also does processing of the coal waste with the use of own equipment on a territory provided by the client and then sells this processed coal at very competitive price. Their main product is professional approach to every individual case on every territory provided. "FPS Ukraine" has the best technologies for coal processing that are unmatched by almost anyone in the world – such technologies give the possibility to provide coal with the smallest amount of ash and with the biggest diameter.

Company is small-sized, thus its organizational structure is divided by positions taken, rather than departments. Following positions are present in the company:

CEO

The functions of the General Director are the general management of the company's production and economic activities. It is he who is fully responsible for all decisions taken, for the results of the enterprise's activities and the safety of its property.

The position of the CEO in "FPS Ukraine" is very responsible and combines many responsibilities, so the manager, in order to cope with the burden, delegates his authority to his subordinates. Namely - in any enterprise and in every company there is

necessarily a deputy general director who organizes the work of the personnel and in the event of any unforeseen circumstances the acting director.

The main characteristics of current company's CEO are as follows:

- Availability of higher economic education;
- Experience in a managerial position for more than 15 years;
- Presence of work experience in the sphere corresponding to the company's activities;
- General knowledge of normative and legislative acts;
- Confident use of a personal computer.

Chief Accountant

The chief accountant, in turn, is responsible for managing the financial department of the company. In simple words, the chief accountant is responsible for all the work done, relating to profits and expenses both on paper and in fact. Of course, the duties of the chief accountant do not end there. Person that is currently occupying such position is engaged in monitoring the market of goods and the price of services, checking the deadlines for the fulfillment of the assigned tasks and the correctness of their implementation.

In addition, one of the skills of the chief accountant is the knowledge of the laws of the country and the firm. Knowledge and understanding of laws, this is perhaps the very first thing that the chief accountant should understand, this function is clearly spelled out in each note with official duties and prescribed by law.

The Chief Accountant also engages in timely notification of his direct boss CEO about forthcoming changes in the law and watches how these changes should affect the work of his company financially.

Any actions of the chief accountant indirectly affect each individual employee, up to the partners of the organization that cooperate or own the common part of the business.

Commercial Director

The Commercial Director deals with activities related to the supply, business and financial activities and corporate client relations of the company. The term "commerce" became fundamental for people who were the first in independent Ukraine to work as commercial directors. After all, many directions of the domestic economy in the 90s and early 2000's were based on resale and "FPS Ukraine" was among small number of companies that always provided its own product and innovation-based service. Therefore, all business was based on commerce - to buy on more favorable terms, then to sell more expensive. These tasks were assigned to ordinary shuttle traders, and to entire companies, which managed to reach millionth turnover today. At that time, many companies did not even have a sales director, a purchasing director, and the term "marketing" was known only to a few. The commercial director was given a second role after the CEO, who is a shareholder in "FPS Ukraine".

The area of responsibility of any commercial directors includes a number of key functions:

- Identifies the channels for the sale of goods and services.
- Strategic planning of the company.
- Work with providers.
- Regulation of the sales department.
- Control of budgeting in all components of the company.
- Coordination of marketing company.
- Reducing business expenses.

This list confirms that the commercial directors are assigned strategic functions and responsibilities. Therefore it is not surprising that the commercial director is entrusted with the status of the second person in his company. But for some companies, the interpretation of the position of a commercial director may be different.

Director of the Labor Protection

To rely on the employer to whom he is directly subordinate does not make sense, since his leadership can only be reduced to the exercise of administrative functions. In the functional terms, the employer cannot manage the occupational safety service, since

he does not have the appropriate training, does not have full knowledge of the requirements of all the necessary regulatory and legal acts on labor protection. The functions of the labor protection service at an enterprise are reduced only to the duties of a labor safety engineer.

Is it possible to consider the production and technical service, to which the labor protection service created if it does not have a head is also equated? I'm sure not. The more correct is the option when a labor protection service consisting of one staff unit will be represented by its head, who can legally combine his duties with the duties of an engineer-performer. But on the contrary, the executive engineer is a leader - it's not by status, not in the teeth, not by the standard

Production Director

The chief person in production is the director. In his submission and responsibility are several units, whose activities he manages. The Production Director is responsible for the quality of the products, controls the production process as a whole and ensures that the work is carried out within the time frames set.

On the shoulders of the director of production, a number of duties are imposed, such as:

- Management of personnel;
- Quality control of products and its compliance with Governmental Standards;
- Control over the implementation of production plans;
- Control of technical condition and timely maintenance of production equipment;
- Analysis of production efficiency and performance reporting;
- The development of measures aimed at increasing the efficiency
- of production and reduction of the costs.

Production Director in “FPS Ukraine” is also responsible for automation of the enterprise’s processes.

The Production Director in “FPS Ukraine” is described by following characteristics:

- Higher education;

- Work experience in production – more than 20 years;
- Experience in management positions;
- PC knowledge;
- Knowledge of modern production technologies.
- Experience in working with foreign companies;
- Work experience in the field of coal extraction and then in coal waste enrichment.

Director for development

The Director for Development is a position in the company, covering all aspects of its activities in general fields. This manager, whose duties include not only monitoring the production process, but also the organization of work of the organization and its staff. This multifaceted profession requires many skills and certain qualities from candidates for this position.

"Development of the company" is a strategic management, strategic development. This refers to a broad and complex set of activities that are related to determining the position of the company in the market, the system of work on its creation, the development of the target model (what should the company be). Today, business conditions are changing rapidly. The dynamics of environmental change is constantly growing: the available range of products is expanding; the preferences of the target audience are changing, the competitive environment, and globalization of world markets is taking place. The Ukrainian economy is confidently integrating into the world economy, which leads to increased competition, a decrease in the economic stability of the territories. As a result of such changes, the importance of the influence of strategic decisions on the overall efficiency of business is steadily increasing. In particular, the volume of works is growing, which are related to the preparation, selection of solutions that predetermine the development of business, forecasting the state of markets, etc.

The Director for Development in “FPS Ukraine” manages development programs to maintain competitiveness, increase the company's income. Together with the shareholders and the general director, he is developing a business strategy for the medium and long term. He is engaged in formation of a portfolio of new projects,

drawing up of the budget for their realization, supervises their realization. He also ensures the identification and elimination of shortcomings and weaknesses in the work of the organization, does the search for opportunities for the development of the company. He provides management of the development of a new product, questions of improving and modifying current products; also organizes communication departments, translating the main strategic goals to the company's specialists. And the last but not the least - establishes the directions for creation of external relations of the organization, in particular, with state structures in accordance with the company's approved strategy.

Plant chiefs – 2 men (1 for each shift)

Plant chiefs' assistants – 2 men (1 for each shift)

Shift supervisors – 2 men (1 for each shift)

Shift workers – 24 men (12 for each shift).

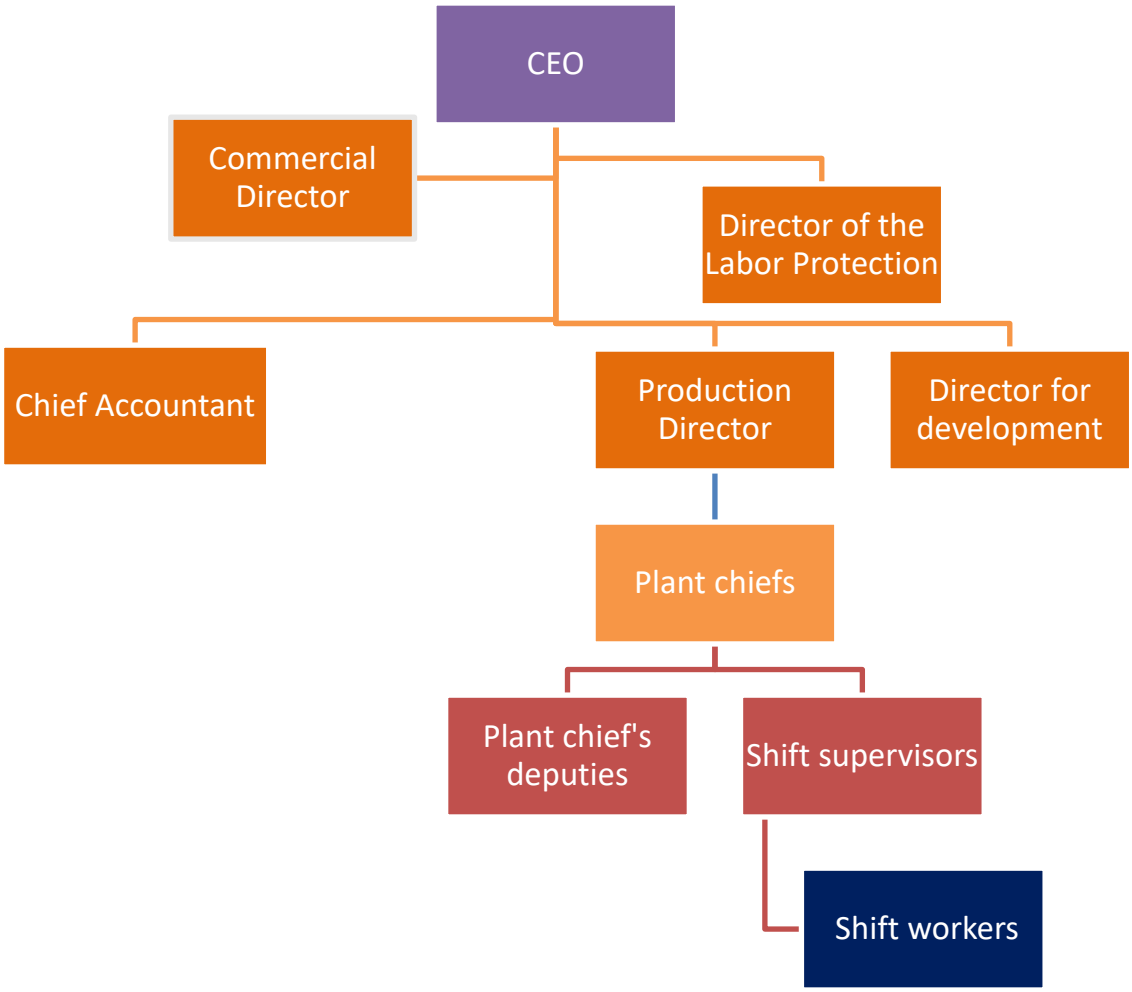

Fig. 2.1 Organizational structure of LLC "FPS Ukraine"

2.2 Analysis of financial and economic indicators of LLC “FPS Ukraine”

In order to carry out an assessment of the economic activity of the enterprise, they carry out financial analysis, which is the basis for forecasting the financial condition of the enterprise based on the information contained in the accounting, financial reporting and operational data. The main purpose of financial analysis is an objective assessment of the financial and economic condition and the identification of opportunities for improving the efficiency of the enterprise.

The analysis of financial condition is based on the data of financial reporting and accounting, on the calculation and comparison of a significant number of indicators and coefficients. Financial and economic analysis enables to realize the following tasks: to evaluate the results and efficiency of the enterprise activity, its current financial state, to make a forecast for the development of financial and economic indicators for the near future; to evaluate the dynamics of financial indicators for a certain period of time and the factors that caused the corresponding changes; assess existing financial constraints on the way of organizational transformation; Identify and evaluate possible sources of funding for restructuring measures and the possible effect of their implementation. The set of sources of information and methods used and the number of indicators that are calculated during the financial and economic analysis depend on the objectives of the study.

In order to analyze the main results of production and economic activity of the enterprise, it is necessary to calculate the main indicators of the balance sheet of the enterprise and the statement of financial results. As a result of the analysis, you can determine the economic potential of LLC “FPS Ukraine”.

First of all, it is necessary to carry out the calculation of the main economic indicators of the enterprise LLC “FPS Ukraine” (Table 2.4).

Table 2.4

Main economic indicators of LLC “FPS Ukraine”

Indicators	Years				Deviation of 2019	
	2016	2017	2018	2019	from 2016	
					+/-	%
Net revenue from sales of products (goods, works, services)	9482500,30	21184216,00	22042054,60	15186428,00	5703927,70	60%
Gross profit (loss)	-310873,70	4374635,00	6246332,60	3400086,30	3710960,00	1194%
Net income (loss)	-2280944,70	1351523,00	3063075,60	1023890,30	3304835,00	145%
Average number of employees, people	28,00	36,00	36,00	36,00	8,00	29%
Return on assets	0,32	0,64	0,63	0,43	0,12	37%
Turnover ratio of current assets	1,35	1,85	2,03	1,70	0,35	26%
Labor productivity, UAH/person	338660,73	588450,44	612279,29	421845,22	83184,49	25%
Profitability of economic activity, %	-5,77%	3,59%	7,85%	2,58%	8,36%	145%

The analysis showed that over the past four years the company has been steadily recovering from serious economic downfall due to war in Eastern part of Ukraine that affected the company’s activity in 2016. Comparison between 2016 and 2019 shows that economic performance has significantly improved: from catastrophic expenses to relatively profitable highly specialized production enterprise. Net revenue from sales of products in 2019 compared to 2016 has increased by 5 703 927 UAH, which in

percentage terms is 60%. Gross profit increased by 3 710 960 UAH or 1194% (that happened because of unprofitable contracts with main clients: in 2015 some of them have refused from working with enterprise for almost a year; plus political and war situation did not allow the start of production as usual).

During this period, the average number of employees increased (actually enterprise has recovered the optimal number required for proper production and operation processes), which is a positive trend for enterprise development. During this period, the company's profitability increased, namely by 37%. This suggests that in 2018 the company has recovered from 2015 crisis situation and effectively used its fixed assets throughout 2017-2019. The productivity of one employee increased by 83 184 UAH, which is 25% more than in the percentage.

Let's turn to the analysis of the property status of the enterprise. Analysis of the property of the company involves an analysis of the composition of property and its structure, the study of sources of formation of property, changes in the composition of the property and the sources of its formation.

The property status of the enterprise is characterized by the use of means (assets) and sources of their formation (liabilities). The source of information for assessing the property status is the balance of the enterprise. In the process of analyzing the asset and the liability of the balance, indicators of structure, balance dynamics, structural balance dynamics are determined. Having calculated the indicators of property status, we can see that overall indicators have a positive tendency.

On Table 2.5 the Balance of the property of the company has increased by 8 627 204 UAH (by 21,84%), the average value of fixed assets increased by 8 827 629 UAH, which in percentage terms - by 22,35%.

Table 2.5

Indicators of the property status of the enterprise

Indicators	Years				Deviation of 2019	
	2016	2017	2018	2019	from 2016	
					+/-	%

1.1. Balance of property of the enterprise, UAH	39500000,00	47031036,00	48528055,00	48127204,00	8627204,00	21,84%
1.2. Average amount of fixed assets, UAH	39500000,00	43265518,00	47779545,50	48327629,50	8827629,50	22,35%
1.3. The capital-labor ratio, UAH/person	1071428,57	920746,39	976733,78	975833,33	-95595,24	-8,92%
1.4. Return of fixed assets*	0,3161	0,6710	0,6454	0,4321	0,12	36,70%
1.5. Share of fixed assets in total assets	75,95%	70,48%	72,46%	72,99%	-0,03	-3,89%
1.6. Depreciation factor of fixed assets	0,3000	0,2715	0,2600	0,2562	-0,04	-14,60%
1.7. Asset Mobility	0,2154	0,3225	0,2875	0,2272	0,01	5,47%

This tendency is positive for the enterprise. If we talk about capital-labor, then this indicator has slightly decreased compared with 2016 because of loss of 8 employees by the start of 2016. It has decreased by 8,92%, which could mean that the company has lost some part of its productivity but the objective truth is that in 2016 it was working with less specialists. It is necessary to draw attention to this indicator in the future in order to avoid economic problems.

The return on fixed assets is an indicator that reflects the gross (commodity) output in value per unit (hryvnia) of the average annual cost of fixed assets that are involved in the production of the required volume of production. This indicator is the most aggregating indicator that characterizes the efficiency of using the main production assets. The return on assets in 2019 increased by 36,7% compared with 2016, which is a positive phenomenon, as the increase in the return on assets of the main productive assets shows an increase in the efficiency of their use. In order to increase the return on capital assets of the main production assets, it is necessary to increase the volume of gross (commodity) production at the expense of more intensive

use of the mentioned funds, on the one hand, and to reduce the average annual value of these funds by eliminating the worn out, unproductive and not used in production of fixed assets, on the other.

The depreciation rate of fixed assets in 2019 decreased by 14,6%. This is a positive trend, since the increase in this ratio characterizes the deterioration of the state of the company's material and technical base.

The stability of the financial condition of the company in a market economy is due to a large extent to its business activity, which depends on the markets for sales, its business reputation, the degree of implementation of the plan by the main indicators of economic activity, the level of resource efficiency and the stability of economic growth.

Business activity of the enterprise in the financial aspect manifests itself, first of all, in the speed of turnover of its funds. The analysis of business activity consists in studying the levels and dynamics of various coefficients of turnover, the main of which are:

Asset turnover ratio;

Turnover factor of working capital;

Turnover rate of accounts receivable;

Turnover rate of accounts payable;

The coefficient of turnover of inventories;

The coefficient of turnover of fixed assets;

Ratio of equity;

The importance of indicators of turnover is due to the fact that the characteristics of turnover in many respects determine the level of profitability of the enterprise.

The turnover of assets is characterized by the number of revolutions of assets for the period; how much net proceeds are received per unit of funds invested in assets; a positive trend should be considered an increase in the indicator. [10]

Let's turn to the analysis of indicators of business activity. The calculation of business activity is shown in (Table 2.6).

Table 2.6

Indicators of business activity of the enterprise

Indicators	Years				Deviation of 2019	
	2016	2017	2018	2019	from 2016	
					+/-	%
2.1. Turnover of assets, resource efficiency, coefficient	0,2401	0,4504	0,4542	0,3155	0,0754	31,44%
2.2. The working capital turnover ratio	1,35	1,85	2,03	1,70	0,3500	25,83%
2.3. Period of one turnover of working capital (days)	265,75	194,92	176,98	211,19	-54,5600	-20,53%
2.4. Store turnover ratio	3,9173	4,6543	5,1934	3,9096	-0,0077	-0,20%
2.5. Period of one turnover of stores (days)	91,90	77,35	69,32	92,08	0,1800	31,44%
2.6. Receivables turnover ratio	3,7930	8,7754	8,7145	3,7415	-0,0515	-2,06%
2.7. Period of repayment of accounts receivable (days)	94,91	41,02	41,31	96,91	2,0000	2,10%
2.8. Turnover ratio of accounts payable	4,35	6,21	6,68	4,63	0,2800	6,44%
2.9. The period of repayment of accounts payable (days)	85,42	46	38,62	60,31	-25,1131	-29,40%
2.10. Turnover ratio of	0,25456377	0,477939959	0,477479167	0,333158711	0,0786	30,87%

equity						

If we talk about the turnover of assets, it has a positive value during the years studied. If we analyze the data, then the turnover of assets in 2019 in comparison with 2016 has a positive tendency, indicating the efficient use of working resources. The turnover of assets increased by 0,0755, which in percentage terms - by 31,44%.

In the process of economic activity, the enterprise provides commodity credit to consumers of their products, that is, there is a gap in time between the sale of goods and receipt of payment for it, resulting in accounts receivable.

The coefficient of turnover of receivables shows how many times a year the funds invested in the calculations turned.

As a rule, the higher this indicator, the better, because the company is more likely to receive payment on accounts. On the other hand, giving consumers a commodity loan is one of the tools to stimulate sales, so it is important to find the optimal duration of the crediting period.

In 2019, the coefficient of turnover of receivables decreased by 0,0782, which in percentage ratio is -2,06%.

The turnover rate of payables - shows the expansion or decrease of the commercial loan granted to the company. The increase in the coefficient means an increase in the rate of payment of the company's debt, a decline - the growth of purchases on credit.

The turnover rate of accounts payable in 2019 slightly increased compared with 2016 - by 0,2803 or by 6,44%.

Indicators of profitability are the relative characteristics of financial results and the efficiency of the enterprise. They characterize the profitability of enterprises from different positions and are grouped in accordance with the interests of participants in the economic process and market exchange.

Indicators of profitability are important for the characteristics of the components of the formation of profits and income of the enterprise. When analyzing production,

profitability indicators are used as an investment policy and pricing tool. They are more complete than profit, characterizing the final results of management, because their magnitude shows the relation between available and used resources.

So, let's turn to the analysis of the indicators of profitability of the enterprise and determine whether these indicators have a positive trend (Table 2.7).

As we see from the calculations, the profitability indicators have a minor positive trend in 2019 compared to 2016. Increased profitability ranges from 30% (if indicator in 2016 was positive) up to 136 % (if indicator in 2016 was negative).

The period of payback of equity capital is the most important factor for owners.

Table 2.7

Indicators of profitability of the enterprise

Indicators	Years				Deviation of 2019 from 2016	
	2016	2017	2018	2019	+/-	%
3.1. Return of assets on profit from ordinary activities before taxation	0,2401	0,4504	0,4542	0,3155	0,0754	31,44%
3.2. Return on equity (assets) at net profit	-0,0577	0,0287	0,0631	0,0213	0,0790	136,84%
3.3. Return on equity	0,2546	0,4779	0,4775	0,3332	0,0786	30,87%
3.4. Profitability of production assets	0,0700	0,0370	0,0800	0,0270	0,0970	138,25%
3.5. Profitability of sold products on the profit from sales	-0,2405	0,0638	0,1390	0,0674	0,3079	-128,03%
3.6. Cost-Efficiency	-0,2329	0,0804	0,1939	0,0869	0,3198	137,30%
3.7. Payback period	-17,3174	34,7985	15,8429	47,0043	64,3217	371,43%
3.8. Payback period of equity	-16,3310	32,7956	15,0709	44,5196	0,0836	372,61%

The value of the indicator reflects the period during which their capital will be paid off. This means that the use of equity generates a net profit equal to its current amount.

In 2019, the payback period has increased from negative value to positive when compared to 2016.

The condition and guarantee of survival and development of any enterprise as a business process is its financial stability. If an enterprise is financially sustainable, it is able to "withstand" unexpected changes in market conditions and not be on the verge of bankruptcy. Moreover, the higher its stability, the greater the benefits to other enterprises of the same sector of the economy in obtaining loans and attracting investment. The financially stable enterprise is timely calculated on its obligations with the state, extra-budgetary funds, personnel, contractors.

Financial stability of the company - it is its reliable-guaranteed solvency in the usual conditions of management and random changes in the market.

The main factors determining the financial sustainability of an enterprise are the financial structure of capital (the ratio of borrowed and own funds, as well as long-term and short-term sources of funds) and the policy of financing certain components of assets (primarily non-current assets and stocks). Therefore, in order to assess financial stability, it is necessary to analyze not only the structure of financial resources, but also the direction of their investment.

The following indicators are used to assess the level of financial stability:

coefficient of ratio of borrowed and own funds;

coefficient of autonomy (solvency);

coefficient of maneuverability of own funds;

coefficient of efficiency of use of own funds;

coefficient of utilization of financial resources of all property.

Let's look at the analysis of indicators of financial sustainability of the company in 2016, 2017, 2018 and 2019 (Table 2.8).

The coefficient of capital's maneuverability shows the ratio between its own working capital and the company's equity. Thus, the value of the indicator indicates what portion of equity can be used to finance current assets, and which part is aimed at financing non-current assets.

Normative is considered to be 0.1 and higher. Positive evidence indicates the adequacy of its own financial resources to finance non-current assets and part of the current. The negative value of the indicator shows that equity capital and long-term borrowed funds are intended to finance non-current assets, therefore, financing of working assets requires access to loan financing sources. This leads to a reduction in financial stability.

In 2018, the indicators of maneuverability are more than 0.1, which is a positive trend for the development and further operation of the enterprise.

The indicator of financial autonomy is one of the most important factors of financial sustainability. It is equal to the ratio of the company's equity to all financial resources. The value of the indicator indicates what part of its assets the company is able to finance at the expense of its own financial resources.

Table 2.8

Indicators of financial sustainability of the enterprise

Indicators	Years				Deviation of 2019	
	2016	2017	2018	2019	from 2016	
					+/-	%
4.1. Own working capital (working, operating, capital)	7000000,0	11470116,0	10836299,0	8909123,0	1909123,0	27,27%
4.2. Coefficient of maintenance of current assets by own funds	0,68	0,76	0,78	0,71	0,03	5,29%

4.3. Maneuverability of working capital	1,21	1,08	1,13	1,44	0,23	5,29%
4.4. Maneuverability of own working capital	0,50	0,55	0,62	0,61	0,11	21,10%
4.5. The ratio of provision of own working capital stores	2,80	3,18	3,56	2,96	0,16	5,54%
4.6. Coefficient of stock coverage	3,20	3,59	3,92	3,00	-0,20	-6,36%
4.7. The coefficient of financial independence (autonomy)	0,9430	0,9424	0,9513	0,9471	0,0041	0,43%
4.8. Coefficient of maneuverability of own working capital	0,19	0,26	0,21	0,20	0,01	4,01%
4.9. Concentration factor of debt capital	0,06	0,06	0,05	0,05	-0,01	-7,20%
4.10. Financial Stability Factor (Financing Factor)	16,56	16,37	19,52	17,92	1,36	8,23%
4.11. Financial Strength Factor	0,9747	0,9681	0,9773	0,9974	0,0227	2,35%

The autonomy factor in 2019 is 0,9471, which means that the company is able to finance 94% of its assets at the expense of equity.

This indicator is important both for the owners and for the lenders of the company. The low value of the indicator will signal a high level of risk and a low stability of the company in the medium term. For example, if a company is capable of generating profits and is solvent in the current environment, then this does not mean that

the company will be able to operate stably when the market situation changes. A low share of equity capital is usually accompanied by significant financial costs (interest payments, other costs of borrowing and borrowing). Therefore, changing a market situation can lead to a situation where the amount of operating costs and financial expenses will exceed the financial result of the company. The long-term impact of such a factor will surely lead to bankruptcy.

The indicator of financial stability is an indicator of financial sustainability, which speaks of the company's ability to meet its obligations in the medium and long term. The value of the indicator indicates how many hryvnias of equity capital accrues to each company's hryvnia. High importance is the low level of financial risks.

In the short term, the criterion for assessing the financial position of the company is its liquidity and solvency. The term "liquidity" involves the unimpeded conversion of property into a payment instrument. The less time it takes to convert a particular type of asset, the higher its liquidity. Thus, the liquidity of an enterprise is its ability to turn its assets into payment for repayment of short-term obligations [12].

An enterprise's liquidity assessment is performed using a system of financial ratios that allow comparing the cost of current assets with different levels of liquidity to the amount of current liabilities (Table 2.9).

Table 2.9

Company liquidity indicators

Indicators	Years				Deviation of 2019	
	2016	2017	2018	2019	from 2016	
					+/-	%
5.1. Current liquidity ratio	7,00	7,65	9,85	71,27	64,27	918,19%
5.2. Quick liquidity ratio	4,50	5,24	7,09	47,15	42,65	947,89%
5.3. Absolute liquidity ratio	3,50	4,24	6,09	43,16	39,66	1133,00%
5.4. The ratio of short-term receivables and payables	1,00	1,00	1,00	4,00	64,27	918,19%

Current liquidity ratio shows how many monetary units of working capital per each monetary unit of short-term, which is, urgent liabilities, and characterizes the sufficiency of current assets (assets) of the enterprise to repay its debts during the year.

The critical value of this indicator is 5.1. In 2019, the value is 71,27, which is a really positive value. And if compared with post-crisis year of 2016, the value of the coefficient increased significantly, namely 918%.

The quick liquidity ratio shows how many units of the most liquidable assets are per unit of urgent debt. This indicator has positive meanings in the research years, and over time, it has a positive trend. In 2019, the quick liquidity ratio increased by 42,65, which is 947% in the percentage.

Absolute liquidity ratio is the ratio of the most liquid part of assets and current (short-term) liabilities. The most liquid part of assets includes cash and cash equivalents. The indicator shows the share of current liabilities of the company, which can be redeemed immediately.

The value of the coefficient in 2019 is 43,1550, which is a really positive value. But over the course of 3 years, we can observe a tendency to reduce this ratio, which means that over time, the company will not be able to repay debts quickly if it does not keep this figure within normal limits.

In general, the financial and economic situation of the company has extremely positive tendency. The financial indicators are way above the normal range. This is explained by company's current policy of transferring most of its liabilities into long term ones, as it starts new projects with Poland and will require major financial involvements.

2.3 Overview of production process of LLC "FPS Ukraine"

Technologies for the development of sludge accumulators:

The FPS applies, during the processing of sludge accumulators, a well-proven system of dry excavation that is used in two versions:

A) The excavating is carried out by an excavator moving along the bottom or along the sides of the settler and loading waste into dump trucks, which then bring the rock to the scrubbing system of pulp preparation; this is shown at Fig. 2.2

Fig. 2.2 Dry excavation in-process

B) After draining the sludge collector and conducting a network of drainage canals, special excavating ramps are poured directly into the sediment bowl on the surface of the sediment bowl, along which the excavator and the mobile scrubbing system of pulp preparation are moving backward (This system is unique and is used only by the FPS company); this can be seen at Fig 2.3

Fig 2.3 Construction of drainage canals and pouring of excavating ramps

Based on 30 years of experience of High Carbon Products in South Africa and Great Britain, company considers the system for the development of sludge accumulators using dredgers as inefficient, which is practiced by a number of companies, since it is practically impossible to meet the basic condition for effective enrichment of thin classes - installation, which leads to low yields of concentrate.

Fig. 2.4 Typical equipment – dredger used by many companies

Applied equipment and technologies:

The raw material recovered from the sludge accumulator is loaded into the receiving hopper of the scrubber pulp preparation system where a pulp is then prepared in a rotating butt-mill with the density specified for each type of raw material and is fed to the plant by means of a slurry pump. This is shown on Fig 2.5

Fig. 2.5 Receiving hopper

The scrubber developed and used by the FPS as demonstrated by long-term practice works with both high-clay raw materials (class content minus 100 microns with a 80% pain) and with raw materials containing a significant amount of sprouted reeds.

Received for the installation of the pulp is fed to a two-stage hydrocyclone-helical system that includes high-frequency screens and a system of special static de-dusting sieves.

Plant configuration, composition and equipment characteristics are determined on the basis of the study of raw materials in each specific case and are the know - how of FPS company, which allow obtaining the maximum output of the conditioning products with minimum operating and capital costs. For better understanding of the factory's composition I was given an archive photo of that factory during the process of installation, it is depicted on Fig. 2.6

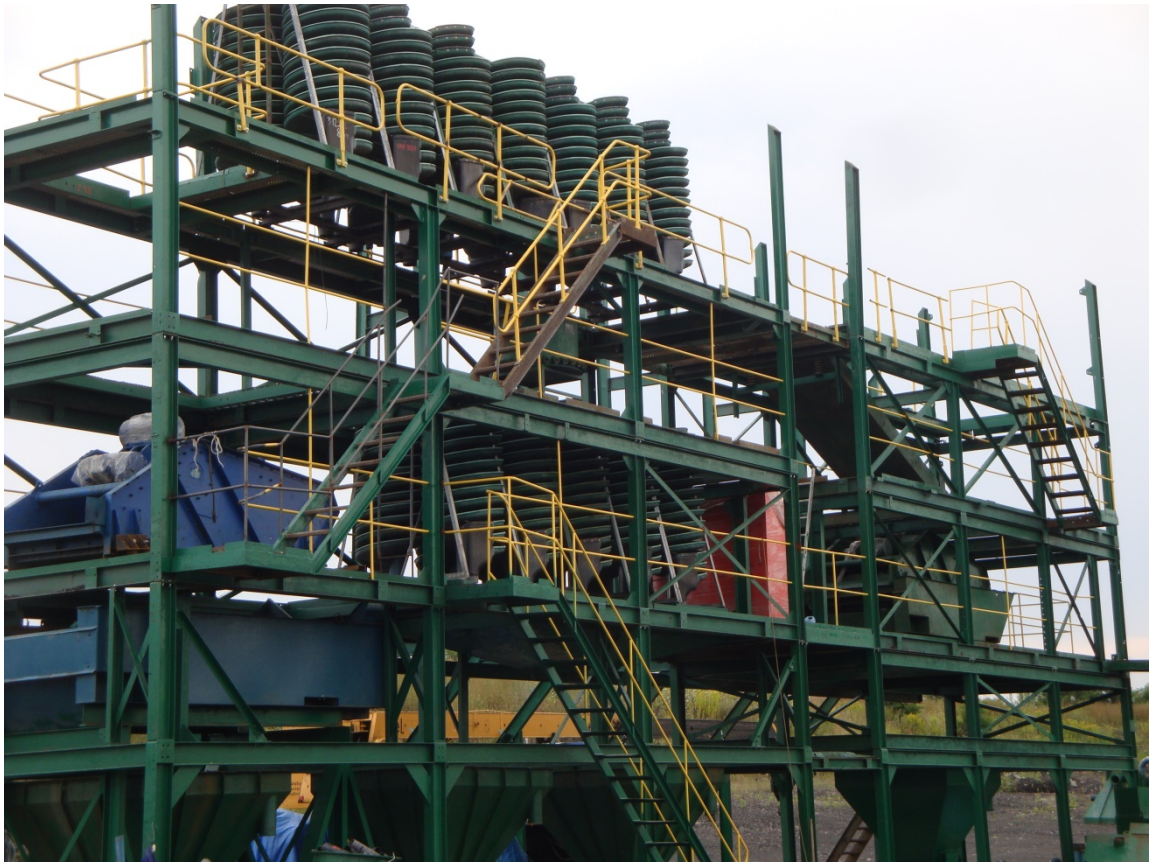

Fig. 2.6 Factory in the process of installation

The production of concentrate acceptable for transportation and consumers - 12-14% in autumn and spring and about 10% in summer and winter is provided by a number of factors:

- The FPS does not use flotation, as the process is in practice not effective enough (which proves the presence of tens of millions of tons of relatively low ash flotation waste in the sludge accumulators), secondly, dewatering of the flotation concentrate during its separate transportation is practically impossible, all existing methods of

dehydration are either extremely expensive or ineffective. In addition, even ideally drained flotation concentrate extremely quickly absorbs any kind of external moisture up to full moisture saturation.

- The system of cyclones, screens, high-frequency screens and horizontal filtering centrifuges developed by the company and tested in practice makes it possible to minimize the content of clay particles by a size of 100-200 microns and to make coal easily drained, which, in combination with professionally equipped drainage areas, acceptable level.

The concentrate thus obtained during frost freezes to 8% moisture without freezing and adherence in wagons, and in the summer time it dries quickly under direct sunlight (that was done in Ukraine for 15 years).

CHAPTER 3.
DISTRIBUTION MANAGEMENT OF LLC «FPS UKRAINE» AND THE WAY FOR ITS IMPROVEMENT

3.1 Current distribution management and peculiarities of performing it at "FPS Ukraine"

After we have understood how the production process on the enterprise is carried out we must take a closer, detailed look at its sales management - from the production place to its final destinations: different Ukrainian TPP's (Thermal Power Plants) both from government and private sectors. It is depicted on Fig. 3.1

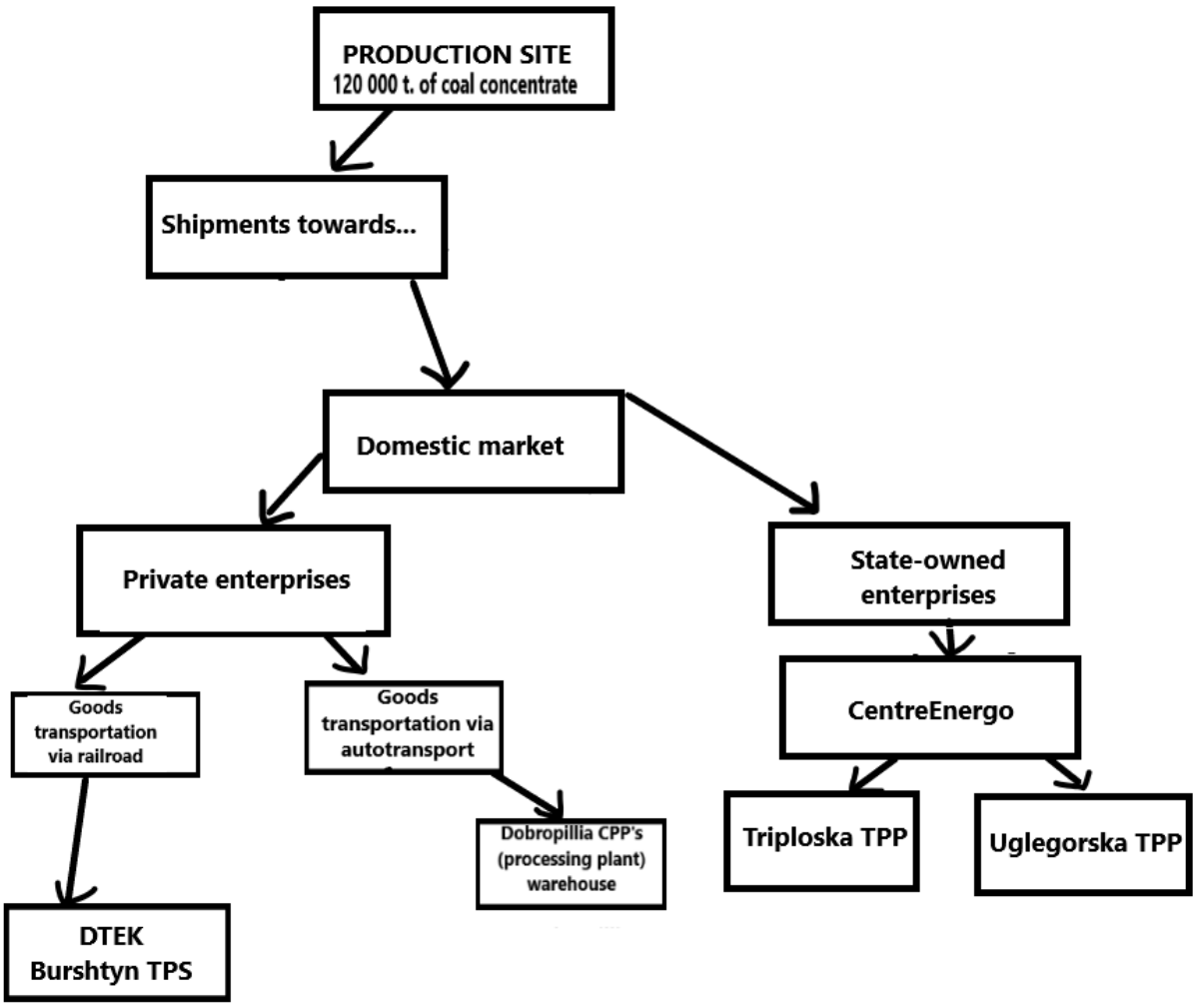

Fig. 3.1 Product distribution and sales destinations breakdown scheme

From this we may see that “FPS Ukraine” is currently concentrated only on domestic market with various TPP’s and one major TPS as their primary consumers.

Correct sales management is important for “FPS Ukraine” for a number of reasons: the volume of sales determines other indicators of the enterprise (the amount of income, profit, the level of profitability). In addition, production and logistics depend on sales. Thus, in the sales process, the result of the enterprise's work is finally determined, aimed at expanding the scope of activities and obtaining the maximum profit.

By adjusting the sales network and service before and after the purchase of goods to the needs of customers, the manufacturing enterprise will increase its chances in the competition.

Commercial activity for the sale of products at the enterprise is very multifaceted, it begins with the coordination of the interests with the requirements of the market. As a manufacturer of products our enterprise is interested in reducing production costs, and this can be achieved with large production volumes and a small range of products. Ultimately, the production program of the enterprise and the quality of products should be determined by the income and effective demand of consumers: enterprises, firms and the population.

Sales planning is an integral part of commercial activities. Sales planning includes drawing up a sales plan for an enterprise, forming a portfolio of orders, choosing the most effective sales channels for products, distributing the volume of sales of goods by region. The sales plan should be developed by enterprises that produce products on the "free market".

The order book is formed by manufacturers that manufacture and supply products to the "well-known" market, i.e. on long-term contracts, as well as on orders from the state.

In order to develop a sales plan, “FPS Ukraine” creates a sales forecast, which is the basis of the sales plan.

“FPS Ukraine” needs to know the relationship between the offer of its product on the market and its sale. The supply of a product is determined by its price, the prices of other similar products, the technology used to manufacture the product, the level of taxes and subsidies, and climatic conditions. Consumer demand for a product of an enterprise, and, consequently, the sale of this product, depends mainly on the price of this product, the level of income and welfare of buyers, tastes and preferences, as well as the opinions of buyers about their prospects, the seasonality of consumption of the product.

Of great importance is the operational and sales work associated with the acceptance of finished products from the manufacturing workshops and their shipment to buyers, for it is this final part of the sale of products that brings real results to the enterprise.

The transport factor plays an important role in this activity.

As noted above, commercial activity for the sale of products begins with the coordination of the interests of the manufacturer with the requirements of the market. To do this, the enterprise must first of all determine the structure of demand, explore the product market in the following areas:

- study of the goods;
- determining the potential and capacity of the market;
- analysis of market conditions;
- consumer research and market segmentation;
- study of the basic forms and methods of selling goods.

The main purpose of studying the goods is the production of those goods by the enterprise that would satisfy the needs of consumers to the maximum and bring high profits. The solution to this problem is based on: determining the conformity of the manufactured or planned products to the tastes and requirements of buyers, identifying the shortcomings and advantages of the products, comparing the qualities and properties of the products of this enterprise with the corresponding characteristics of competitors'

products, predicting the prospects for changing market requirements to the characteristics and quality of products manufactured by the enterprise.

When studying the properties and quality of products, it is necessary to pay great attention to the possibilities of applying the achievements of scientific and technological progress in the field of production. It is very important to quickly update the product range due to the development of science and technology.

We will start with the essence – enterprise currently uses only two main modes of transport: automobile and railroad. And we are going to discuss how “FPS Ukraine” manages to do timely deliveries of such big annual quantities of coal concentrate to its clients.

FPS Ukraine will be stated as a consignor in the next abstracts of this subpart for a more correct application of corporate terminology when dealing with its government partners, such as Tripolska and Uglegorska TPP’s; enterprise also has one major railroad destination and it is a private company DTEK Burshtyn Thermal Power Station.

The consignor is obliged to prepare the cargo for transportation in accordance with the established standards and specifications for products, their containers and packaging. Preparation of cargo for transportation includes the implementation of the usual actions: its packing, packaging to protect the cargo from damage, deterioration, loss, as well as in order to prevent pollution and clogging of rolling stock, railway tracks and the environment.

The consignor's fulfillment of this obligation is aimed at ensuring the safe movement and operation of railway transport, the quality of the transported products, the safety of cargo, wagons, containers, fire and environmental safety.

The condition of the prepared cargo is controlled by the carrier and the owner of the infrastructure. They have the right to check the compliance of containers and packaging, the quality of the transported products with the specified mandatory requirements, specifications and other acts. When transporting food and perishable goods, an additional obligation of the consignor is to submit, together with the railway consignment note, a document on the quality of the goods (certificate), signed either by

the consignor himself or by a quality expert and dated the day of loading the goods into the wagon, container, unless otherwise provided by other regulatory legal acts.

Of great importance in ensuring the safe delivery of cargo is the consignor's observance of the conditions for its marking. Packaged and piece goods are subject to transport marking. In accordance with the rules, transport marking, as in road transport, consists of basic, additional, information and manipulation signs. But their content differs in comparison with the content of types of markings in road transport. The main inscriptions on the packages contain the full or abbreviated name of the consignee, the full name of the destination station, the number of packages in the shipment and the serial number of the place within the shipment. Additional inscriptions include the name of the point of departure, indicating the station of departure and carrier, as well as railway markings applied to each package when transporting goods in small consignments. Information labels contain the gross and net weight of the package in kilograms and the overall dimensions of the package in centimeters. Manipulation signs are images that indicate how the cargo is handled. The need for their application and the types of manipulation signs are determined by standards or technical specifications for products. If the way of handling the cargo cannot be expressed with manipulation signs, the use of warning labels is allowed.

The responsibility of the consignor is to use wagons, containers in accordance with the application for loading operations. The reason for refusal to use them may be the unsuitability of such wagons, containers for the carriage of specific cargo (unsuitable commercially). Unsuitability can also be caused by technical reasons (technical unsuitability). As already noted, the technical suitability of wagons and containers supplied for loading is determined by the carrier. He usually prepares these vehicles for the carriage of goods (on a contractual basis, the consignor can also prepare them).

At the same time, the direct responsibility for determining the technical suitability of individual devices and devices of tanks is assigned to the consignor. He checks the technical serviceability of boilers, fittings and universal tank drain devices. Therefore,

the carrier is not responsible for the negative consequences associated with non-safety of the cargo. It is indicated that if the consignor did not fulfill the specified obligations and due to technical malfunction of boilers, fittings and universal drainage devices, there was a loss or shortage of cargo during transportation, then the obligation to reimburse the shipper (consignee) for the cost of the lost or missing cargo cannot be assigned to the carrier.

The reason for the unsuitability of a vehicle for transportation may also be commercially unsuitability of wagons, containers for the carriage of certain cargo. As already noted, their commercial suitability is usually determined by the consignor (if loading is provided by the carrier, then for wagons, commercial suitability is determined by him). Having established that the wagons and containers submitted for loading are commercially unsuitable, the shipper has the right to refuse them. In this case, the carrier must provide suitable wagons instead.

In practice, there are cases when, for one reason or another, the shipper does not refuse wagons, containers that are commercially unsuitable for the carriage of a particular cargo. The company gave an explanation, according to which "if during transportation there was a loss, shortage, damage (damage) to the cargo due to the fact that it was loaded by the consignor in a commercially unsuitable wagon, container, into which the consignor did not refuse to load, then the carrier shall be exempted from responsibility for non-preservation of such cargo. In this case, liability to the consignee for the loss, shortage, damage (spoilage) of the cargo may be assigned to the consignor.

Another responsibility of the shipper concerns the declaration of the value of the transported cargo. The rules for the carriage of goods with declared value by rail have established a list of categories of goods transported with a mandatory declaration of value. These include: precious metals, stones and products from them; museum and antique values; objects of art and other artistic products; cargo for personal, family, household and other needs not related to business. Accordingly, these types of cargo are not related to the activity of “FPS Ukraine”.

Loading of the cargo presented for carriage is carried out, as a rule, by the consignor. However, the company assigns the carrier to carry out this operation in the established cases. We are talking about loading empty or laden containers into wagons in public places. The carrier performs loading and unloading operations at the expense of the consignee by agreement of the parties, unless otherwise provided by the legislation of Ukraine. In addition, the carrier, as well as the owner of the infrastructure, in the presence of loading and unloading equipment and devices, can assume, under a contract with the consignor or consignee, the performance of the loading and unloading operations assigned to them by law.

In accordance with the established rules, loading, stowage and fastening of goods in wagons and containers must ensure, firstly, the safety of movement and operation of railway transport, secondly, the possibility of mechanizing loading and unloading operations and, thirdly, the safety of goods, wagons, containers. When performing loading operations, the consignor, the carrier must comply with the requirements of handling signs and warning notices on the packaging of the goods.

Equipment, materials, packaging equipment and other devices necessary for loading, securing and transporting goods are provided by the consignor (consignee). As already noted, on the terms of the contract, they can be provided by the carrier. The installation of the above devices is carried out by the participant in the transportation process who provides the loading (unloading) of the cargo.

Cargoes must be loaded taking into account the technical standards of loading, but not exceeding the carrying capacity according to the stencil on the wagon, container. If technical standards for loading are not established for individual cargoes, they must be loaded to the full capacity of wagons, containers, but not higher than the carrying capacity according to the stencil on the wagon or not higher than the difference between the maximum gross mass and the tare weight according to the stencil on the container.

If the consignor has exceeded the carrying capacity (overload) of a wagon or container, he pays the established fine to the carrier.

If cargo is transported in bulk, it is important to avoid losses due to blowing out of small particles of the cargo. Therefore, the surface of cargo containing small fractions must be leveled and compacted in accordance with the instructions issued by the consignor and agreed with the carrier - this is one of the most important for the ”FPS Ukraine”. For leveling and compaction of goods in wagons, mechanized installations and other devices can be used in agreement with the owner of the wagons.

After we have understood all of the peculiarities of “FPS Ukraine” activity when preparing and performing railroad transportations let us see existing distribution routes and approximate delivery schedules.

On Fig. 3.2 we may see delivery railroad route from Dobropillya train station to Uglegorska (Vuhlehirska) TPP.

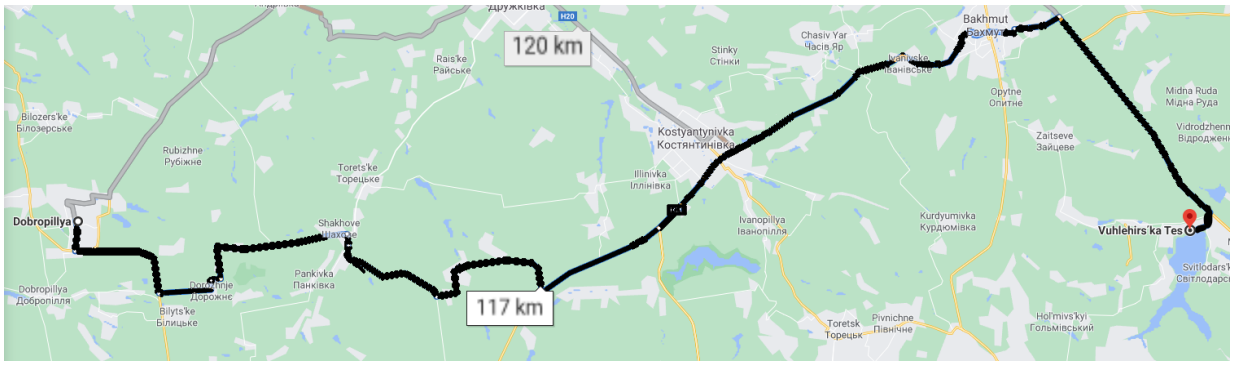

Fig. 3.2 Delivery route and distance for Uglegorska TPP client

Route depicted in dark color is the current existing railroad route that passes through several minor towns with minimal stops and is taking only 117 km with approximate arrival time in boundaries of about 4 hours with several small stops.

Before 2012 the company used the route depicted in grey. The route was both 3 km bigger in distance and about 2 hours longer for arrival time due to several additional stops.

Old route was mostly used due to previously existing arrangements for supply and delivery, dictated by the contract and the need for cargo to be checked not at the Uglegorska TPP but at Druzhkivka town by local quality inspector.

When we talk about periodicity and volume of supply to Uglegorska TPP let us look at the Table 3.1

Table 3.1

Periodicity and volume of supply to Uglegorska TPP

Month	**Volume of supply, ton**
January	2166,7
February	2166,7
March	2166,7
April	1300,0
May	1300,0
June	1300,0
July	866,7
August	866,7
September	866,7
October	4333,3
November	4333,3
December	4333,3
Total , ton	26000

“FPS Ukraine” nowadays does only railroad supplies once a month. So according to current agreements with Uglegorska TPP we may see that about 50% of its supply volume goes into destination during colder winter and spring months, which is understandable and logical, when dealing with heat and electricity-generating enterprises, as they have a stockpile/planning possibility.

Now let us see second railroad destination point – Tripolska TPP, its current route, previous route possibilities and total delivery distance is depicted at Fig. 3.3

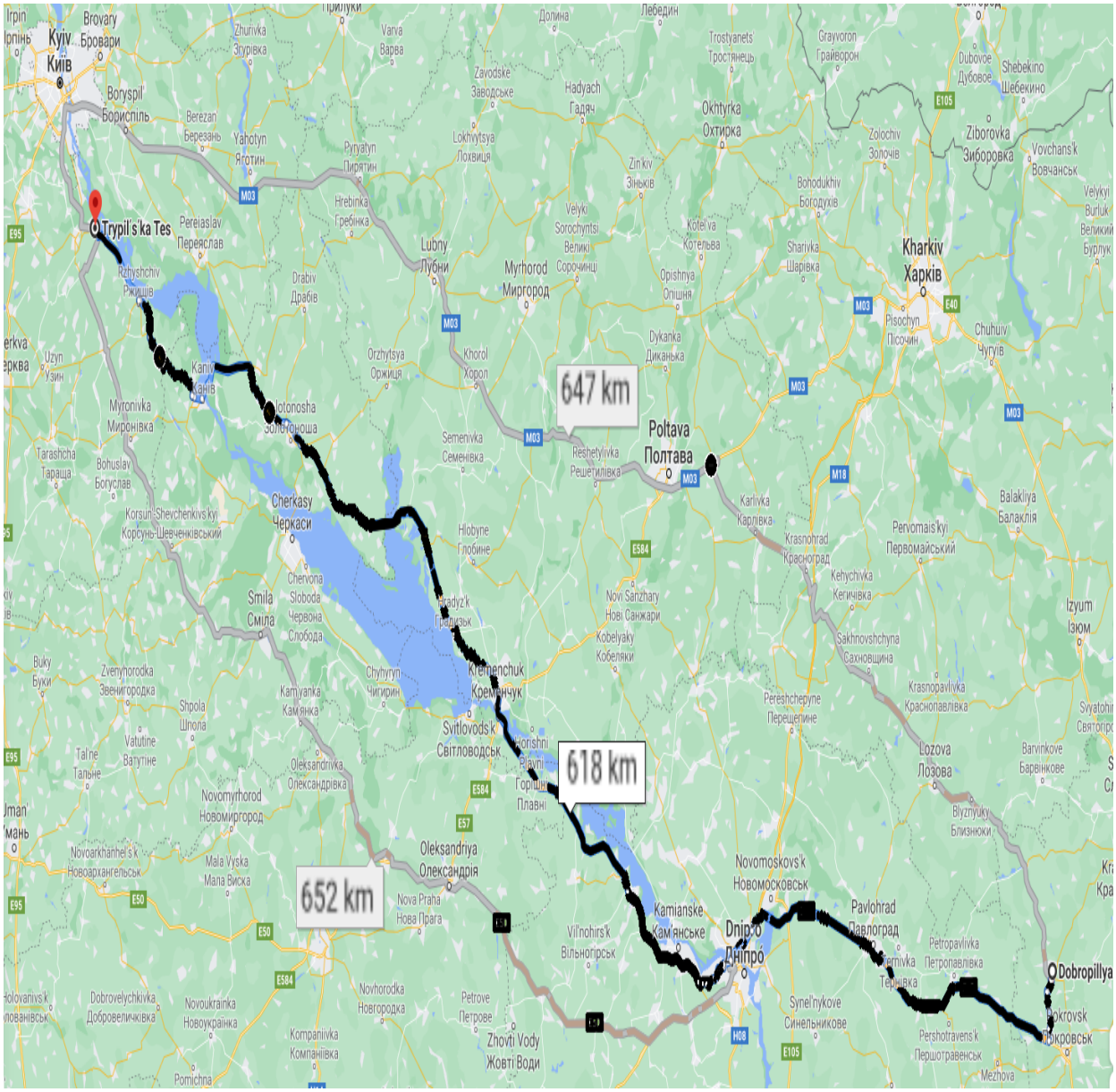

Fig. 3.3 Delivery route and distance for Tripolska TPP client

Route depicted in dark color is the current existing railroad route that passes through several minor towns with minimal stops and is taking only 618 km with approximate arrival time in boundaries of about 15-17 hours with several stops.

Before 2012 the company used one of the two routes depicted in grey. The routes were both 29-34 km bigger in distance and about 2 hours longer for arrival time due to several additional stops.

Old routes were mostly used due to previously existing arrangements for supply and delivery, dictated by the contract and the need for cargo to be checked not at the Tripolska TPP but at Dnipro city by local quality inspector.

When we talk about periodicity and volume of supply to Tripolska TPP let us look at the Table 3.2

Table 3.2

Periodicity and volume of supply to Tripolska TPP

Month	**Volume of supply, ton**
January	3333,3
February	3333,3
March	3333,3
April	2000,0
May	2000,0
June	2000,0
July	1333,3
August	1333,3
September	1333,3
October	6666,7
November	6666,7
December	6666,7
Total , ton	40000

“FPS Ukraine” nowadays does the same method and periodicity of delivery - only railroad supplies once a month. So according to current agreements with Tripolska TPP we may once again see that about 50% of its supply volume goes into destination during colder winter and spring months, which is understandable and logical, when dealing with heat and electricity-generating enterprises, as they have a stockpile/planning possibility.

Next, we are going to look at supply delivery route for “FPS Ukraine” major commercial partner – DTEK Burshtyn TPS and the annual volume of supply. We will start with delivery route and the distance depicted at Fig. 3.4

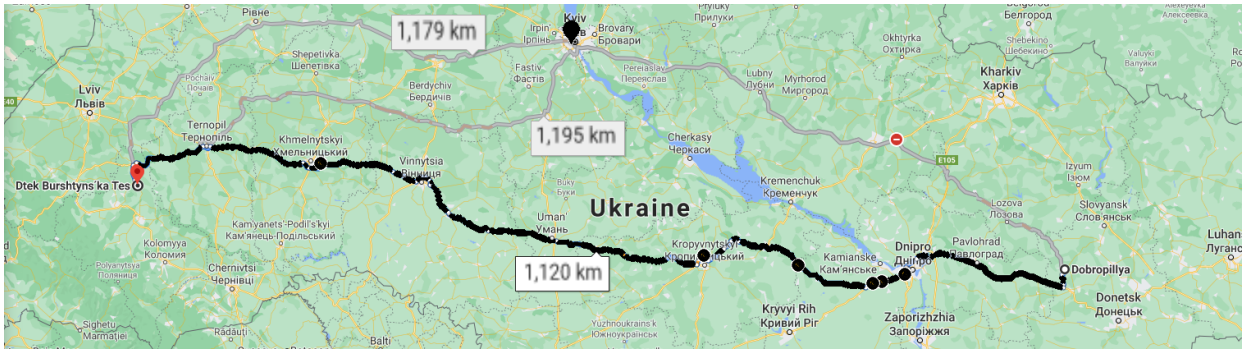

Fig. 3.4 Delivery route and distance for DTEK Burshtyn TPS client

Route depicted in dark color is the current existing railroad route that passes through several minor towns with minimal stops and is taking only 1120 km with approximate arrival time in boundaries of about 22-24 hours with several stops.

Before 2012 the company used one of the two routes depicted in grey. The routes were both 59-75 km bigger in distance and about 1 hour longer for arrival time due to several additional stops. Company used previous routes due to ineffective transport management and managed to save up to 7% of additional costs on transportation when they started using current delivery route.

And following already developed scheme of research – let us look at periodicity and volume of supply to DTEK Burshtyn TPS in Table 3.3

Table 3.3

Periodicity and volume of supply to DTEK Burshtyn TPS

Month	**Volume of supply, ton**
January	2833,3
February	2833,3
March	2833,3
April	1700,0
May	1700,0
June	1700,0
July	1133,3
August	1133,3
September	1133,3
October	5666,7
November	5666,7

December	5666,7
Total , ton	34000

"FPS Ukraine" applies the same method and periodicity of delivery to its commercial partner - only railroad supplies once a month. So according to current agreements with DTEK Burshtyn TPS we may once again see that about 50% of its supply volume goes into destination during colder winter and spring months, which shows the general tendencies of coal consumption at Ukrainian TPP's and TPS's: overall increase at colder periods of early spring, late autumn and winter and then decreasing during the rest of the time with its minimum at summer.

Last destination of sales for "FPS Ukraine" is Dobropillia Central Processing Plant's warehouse. There is no need in delivery route scheme as the plant is located only several kilometers away from the place of "FPS Ukraine" production site. But we will look at the general monthly and annual volume of supply that is depicted on Table 3.4

Table 3.4

Volume of supply to Dobropillia CPP's warehouse

Month	**Volume of supply, ton**
January	1666,7
February	1666,7
March	1666,7
April	1000,0
May	1000,0
June	1000,0
July	666,7
August	666,7
September	666,7
October	3333,3
November	3333,3
December	3333,3
Total , ton	20000

When looking at this table we must remember one important aspect – the periodicity of supplies to the warehouse varies over time as it is done by local auto transport means: it may be done several times per week or only 2-3 times per month, because of flexible demand on the products of Dobropillia CPP. But once again we may see a tendency showing the general tendencies of coal consumption in Ukraine - overall increase at colder periods of early spring, late autumn and winter and then decreasing during the rest of the time with its minimum at summer.

3.2 Proposal for improvement of distribution management focuses of "FPS Ukraine"

After closely looking at company's current sales destinations we may see one major issue with them – lack of international directions for sales of their enriched coal wastes. This is their current weak point in sales management.

One big advantage of sales abroad is the price of enriched coal wastes for TPP's abroad.

In order to create new sales direction, we will need a new scheme, explaining the improved way of distribution and delivery. This scheme is depicted on Fig 3.5

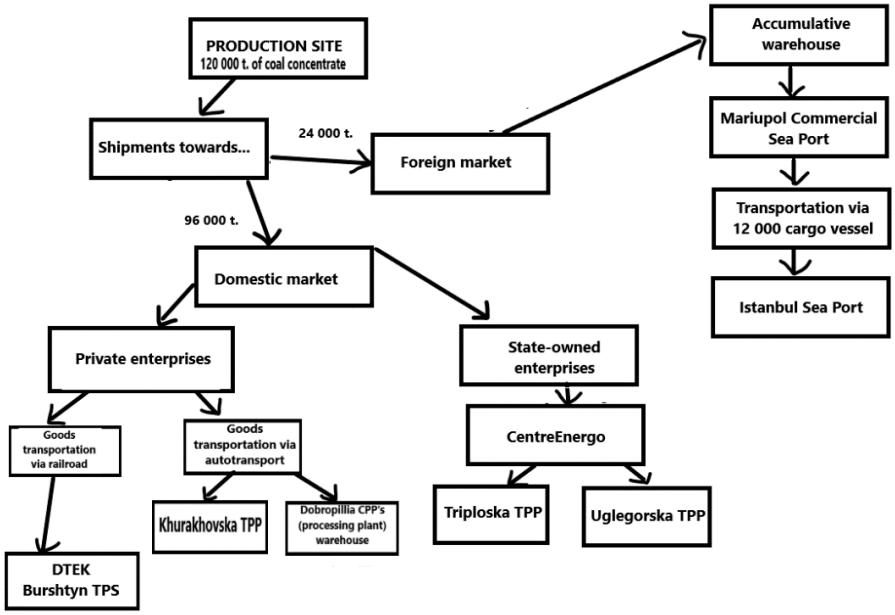

Fig. 3.5 Renewed product distribution and sales destinations breakdown scheme

This scheme shows that we are going to split distribution and sales into two main streams:

1. Domestic companies (both private and state-owned)
2. Foreign market (currently Turkey is the planned destination)

Main way by which foreign sales are going to be accomplished is automobile transportation from accumulative warehouse near main production site in Dobropillia to Mariupol Commercial Sea Port. After that "FPS Ukraine" will need to arrange delivery by sea from Mariupol to Istanbul Port, where the cargo will be received by local client (it is a major resource distributor and logistics company in Turkey). All of the above will be done in limits of Incoterms-2020 CFR (Istanbul Port).

In order to perform new type of transportation – maritime, we will firstly need to understand the essence of performing it, getting all the documents ready and choice of the right ship.

Classification of shipping is performed in several categories

a) Varieties:

- Domestic shipping - carried out on the territory of one country;
- External sea transportation - carried out between countries when exporting and importing goods (we are going to use this type);

b) Types (or form of transportation):

- Sea container transportation (or container transfer), which are divided, including:

- FCL1 - containers with full load from one shipper;
- LTL2 - prefabricated containers that send small consignments of goods from different customers.

- Bulk cargo (transportation of dry cargo, which does not require special containers or packaging: cereals, ores, coal, etc.);
- Sea freight (a term that is also used in the classification of sea transport, but in fact it is just the carriage of goods);

- Sea transportation of rolling cargo (Ro-Ro (Roll-On / Roll-Off)) is used for the transportation of wheeled and tracked vehicles, technological equipment for various purposes, including oversized cargo, large-tonnage products;
- Transportation by sea vessels of bulk cargo (oil products, raw materials and chemical products);

c) Modes of shipping:

- Full Freight Vessel - use of the vessel up to full carrying capacity (ship's consignment of cargo);
- Part Cargo - full cargo capacity of the vessel is not used (consignment of cargo on the vessel) - this is suitable for our volumes of supply.
- Full Container Loading - delivery with a full load of one container.
- Less Container Loading - delivery of groupage cargo in one container

Next, we are going to discuss it is essential to choose this mode of transport for enriched coal wastes. Advantages of sea freight:

- Compared to air, pipeline, railway and road transportation, sea transportation by ship is distinguished by a lower cost price.
- The latest technologies, modern ship design, as well as developments in the production of devices for loading / unloading goods in the port provide a reduction in the final price of sea transportation. The share of the cost of loading goods onto a ship and unloading it at the port in the total transportation price decreased from 11 to 2%.
- The construction of large-sized vessels helps to increase their carrying capacity, which reduces the cost of transportation by sea vessel.
- No other mode of transport can be compared with a sea vessel in terms of carrying capacity and capacity of goods for transportation.

- In cases when the dimensions of a sea vessel do not allow it to approach a certain port, innovative technical solutions make it possible to quickly unload the vessel in the roadstead or on the open sea.
- Uniform standards that have been developed for the design and construction of a sea-going vessel make it possible to speed up unloading / loading in the port.
- Freight containers on board a sea vessel ensure the safety of goods during transportation.
- According to statistics, sea transportation has the lowest percentage of cargo loss or damage as a result of accidents or natural disasters (from 1 to 1.5%).
- Unified legal norms. Sea transportation of goods is regulated by the Athens and Brussels conventions.
- Transportation of goods by sea vessel is the most efficient option for moving goods between different continents.

But when we talk about advantages it is also important to look at disadvantages of sea freight:

- Sea transportation has the lowest transport speed. At the same time, the duration of movement of goods by a sea vessel is more influenced not by the speed of the vessel itself, but by the time required for loading operations in the seaport. The acceleration of sea transport is facilitated by multimodal transport technologies.
- Technologically complex loading / unloading process;
- High degree of dependence on weather and climatic conditions. Marine transportation can be severely slowed down or even interrupted by natural factors.

- Transportation of goods by sea transport differs from other types of transportation by its dependence on the throughput characteristics of the channels.
- Since ancient times, there has been a threat to shipping from pirates.
- Sea transportation requires high investments. Building a modern vessel is a rather expensive process.
- Securing and packing cargo for sea transport must be carried out according to strict rules.
- Low frequency of shipments.

A lot of the disadvantages are connected with periodicity of delivery and its time. But the offered idea for new sales direction implies 2-3 transportations of cargo per year, thus ahead planning will be possible and even some unexpected slowdown will not damage overall process severely.

When choosing routes and ship for delivery we must keep in mind classification of ships:

a) By type of shipping:

- Liner shipping is a type of sea transportation between certain ports on a specific schedule with the acceptance of goods on board the vessel on the basis of a standard sea transportation contract (we are planning to rely on ahead long-term planning for this type).
- Trump shipping is an irregular sea transport that is carried out in random directions without a specific schedule. Freight of a tramp ship is most often by charters.

b) By ship size:

- Handysize: bulk carriers with deadweight ranging from 10,000 to 50,000 tons (we are planning to work with this type because of our scale of one-time supply ranging from 8000-12000 tons).

- Aframax: tankers for oil products with a volume of 80,000 to 120,000 tons. Aframax class tankers are commonly used in the Black, North, Caribbean, Chinese and Mediterranean seas.
- Suez-max: vessels whose characteristics make it possible to cross the Suez Canal with a full load. The deadweight of such a vessel is approximately 150,000 tons with a length of about 285 meters and a width of 35 meters. The maximum draft of such a vessel is 23 meters.
- Panamax: a vessel with a deadweight of up to 75,000 tons, which can pass the Panama Canal when fully loaded.
- Capesize: a vessel (usually a dry cargo ship) that is too large to pass the Panama Canal.
- VLCC (Very Large Crude Carrier): a tanker with a capacity of up to 300,000 tons.
- ULCC (Ultra Large Crude Carrier): a tanker with a capacity of over 300,000 tons.

c) The main types of ships:

- Container ships. Designed for transportation of products in containers of standard sizes. A distinctive feature of container ships is a large open deck area above the holds. The structure of the holds is a vertically arranged space with specially installed cell guides for securing and placing containers.
- Rollers (trailer vessels, RORO, Roll-On / Roll-Off) - a category of vessels for transporting goods that can be unloaded horizontally. Such vessels are mainly used for the sea transportation of cars, trailers, container ships with semi-trailers and goods assembled on Euro pallets, which require ro-ro forklifts for loading and unloading. Rollers are very similar in design and appearance to ferries, but without the presence of living space. The unloading and loading operations of the ro-ro rovers are carried out using a ramp with a good carrying capacity and reliably connects the ship's side

with the berth. In some cases, when loading containers into ro-ro ships, their upper deck is used on the principle of container ships, which contributes to an increase in the amount and volume of cargo transportation.

- Lighter carriers - a category of a vessel specially designed for transportation in lighters (one of the varieties of a non-self-propelled sea barge used for transportation by means of a tugboat). Lighter carriers found their application in the mixed movement of cargo sea - river. Lighters with heavy loads with shallow draft can be towed along shallow rivers and canals for long distances inland, and upon completion of unloading in the same way, returned by a lighter carrier. They are considered a worthy alternative to cargo ships and can increase the productivity of unloading and loading operations by more than five to ten times. Also, the use of lighter carriers reduces the time of the ship's stay and reduces material costs for the construction of port structures.
- Bulk carrier is a vessel designed for the transportation of bulk cargo (cement, coal, ore, grain and other bulk dry cargo that can be transported without packaging). The bulk carrier structure consists of several holds with a large volume and special covers. The main advantage of bulk carriers is their versatility and low costs for moving goods by sea (ideal solution for our type of product).
- Dry cargo ships are a category of ships used for the transportation of piece products in packages that do not require special conditions, and therefore are considered general cargo. In practice, dry cargo ships are used to transport heavy and small-sized cargo. The design of dry cargo ships is similar to bulk carriers - there are also holds with special hatches. The difference between dry cargo ships and bulk carriers is the presence on the deck of their own loading and unloading crane manipulator, installed directly on the deck.

- A tanker is a large vessel used to transport liquid cargo (chemical and oil products, liquefied gas, wine and even cement mortar). For loading and unloading goods on tankers, a special pumping system is used and there are containers for the transported cargo - tanks. The hull of such a vessel is sheathed with special metal sheets that shape the tanker and divide it into separate compartments filled with liquid cargo. Safe transportation conditions and protection of cargo from spills, damage and water penetration is provided by a double metal bottom and a thick side of the vessel.
- The main part of tankers for transportation of liquid cargo is universal, which makes it possible to simultaneously transport various liquid cargoes. Heavy-duty vessels can transport about 320,000 tons of oil at a time, which equates to more than five rail tank cars.
- Highly specialized vessels include gas carriers with spherical cargo spaces, towering above the deck of the vessel. They are endowed with the necessary technical characteristics and are able to maintain high pressure levels.

After figuring out the ship type we must make sure that we chose the right port for final delivery. In the broad sense of the word, the specialization of seaports covers the specialization:

- by the nature of the processed cargo - it is closely related to the transport and economic zoning of cargo flows;
- by the nature of the processed cargo, this is the specialization of ports and their regions in the processing of coastal and export-import cargo. This type of specialization is determined both by the transport and economic zoning of coastal and export-import cargo flows, and by the technical capabilities of seaports;
- by directions of transportation - mainly applied to general cargo. It is determined both by the transport and economic position of the port to the

main points of destination of goods, for example, foreign importing (exporting) countries, and by the technical capabilities of seaports - for transportation, it is determined by identifying the inland areas of gravity, in which suppliers of export goods are located, to seaports. This specialization is based on the minimum transport costs for the transportation of goods from the place of production to seaports. This type of specialization plays a significant role in FOB sales;

- by suppliers of goods for sea transportation - the most correct specialization at the same time in the directions of sea transportation and by suppliers of goods for transportation;
- intra-port - arises from the zoning of the port's cargo operations by specializing its individual areas and berths for the processing of certain cargo, including packaged goods - according to the complexity of their processing, the method of transportation, etc. This type of specialization is of particular importance in connection with the increasing containerization and packageization of transportation.

The most important part is finding information about type of seaport:

1. Specialized.
2. Universal (and Istanbul port refers to this type, thus we will be able to supply our enriched coal wastes product with no issue)

Most of the seaports are universal, but there are also those designed for oil transportation (Ras Tanura, Mina El Ahmadi, Khark, Tampico, Valdez), transportation of ore and coal (Tubaran, Richards Bay, Duluth, Port Cartier, Port -Hedlen), grain, timber and other goods. The specialized ports are concentrated mainly in developing countries, since they are focused on the transportation of goods that are the export of this state.

The trend in the number of sea transportations on a global scale in recent decades has been constantly changing due to crisis situations. During the energy crisis, there was

a decrease in the number of transportation of bulk products. But in general, the demand for petroleum products is consistently high and the growth in the transportation of this product is constantly increasing.

And it will be useful to also understand seaport operation process:

a) Acceptance of goods for transportation:

- operations and methods of preparation of the port, its individual territories, berths and warehouses for receiving cargo;
- acceptance of goods from the sender, including weighing, marking and other operations;
- paperwork, placement and storage of goods in the port;

b) preparation of the port for receiving ships:

- operations and receptions preparation of berths and all port facilities, including harbor tugs, to receive vessels of certain types and sizes, the arrival of which is notified to the port in advance;
- preparation of goods and the necessary means for loading, their appropriate concentration, drawing up a cargo plan;

c) loading of ships in the port:

- delivery of goods to the berth, loading and stowage of them in the holds, stowage of goods, registration of cargo documents;

d) preparation of the port for the departure of the vessel:

- registration of cargo documents, preparation of the necessary means, including tugs, for the withdrawal of the vessel from the port;
- inspection of the vessel and registration of its departure.

Next, it is important to understand the peculiarities of documentation when working with overseas transportation. Documents for sea freight include:

1) Bill of lading - a type of document that has title value or, in other words, confirming the right to own the goods. This is a full-fledged document for escorting and transferring goods during transportation on a ship. There are several types of bill of

lading: on board and received for shipment, port, through, etc. The essence of all types of the document remains unchanged, and their difference lies only in the detailing of the features of the receipt / transfer of goods.

For example, an on board document is issued after loading onto a ship. Banking organizations regard the on-board bill of lading as the most risk-free documentation. So there is a clear understanding at what time and on board which vessel the products are loaded.

If we talk about a non-flat bill of lading, then it confirms the receipt by the transport company of the cargo for transportation, but does not contain information about the date of loading on the ship. Therefore, in the presence of such a document, the cargo can be stored in the port storage warehouse. This version of the bill of lading is used for container transportation.

Through bill of lading is used for mixed transportation (sea and air, sea and rail, etc.). Since container transport is often used for mixed transport, it became necessary to develop a separate bill of lading for this type of transport - forwarding. FIATA developed such a shape in 1968. The International Chamber of Commerce in 1974 developed unified rules for mixed transport for this bill of lading. This type of transport is now regulated by the UNCTAD / ICC Rules for Multimodal Transport Documents (ICC Publication No. 298, 1974). In accordance with the provisions of the Rules, a form of bill of lading used in trade practice was introduced. The front of this document contains the ICC logo.

If the cargo is admitted for loading, but still delivered to the port, then the port bill of lading must be issued. This procedure is carried out by the port authority or the forwarding company. The port bill of lading is required for buyers and the creditor bank.

There is also a classification of the bill of lading depending on the types of vessel described above used for sea transportation. Such documents, respectively, are called Liner Bill of Lading and Chartered Bill of Lading. In the first case, the bill of lading document serves as a title of title, containing all the necessary information on

transportation. The freight bill of lading cannot be considered as the title of title or evidence of transportation. It contains links pointing to the terms of the charter, which are described in the agreement between the charterer and the carrier. Banking organizations do not consider the freight bill of lading as documentation admitted to documentary credit. This document confirms the presence of a charter contract and confirms the presence of a contracted volume on the vessel.

The unified norms of documentary letters of credit describe in detail the requirements for the execution and verification of bills of lading by banks (Article 20 of the ICC publication No. 600). Banks should pay special attention to the following points when issuing letters of credit:

- Compliance of the addressee's name and delivery terms with the data contained in the letter of credit;
- Compliance of the addressee of the notification of the transfer of cargo with the letter of credit;
- Type of bill of lading and its compliance with the letter of credit;
- Compliance of ports (shipment / delivery) with the data in the letter of credit;
- Compliance with the name of the cargo, its weight and other characteristics specified in other accompanying documents;
- Compliance of information on payment of freight with the data specified in the terms of delivery of the goods in the letter of credit and commercial invoice;
- Compliance of the date of loading the goods on the ship with the requirements of the letter of credit for the period of its validity;

The fact of presenting the original bill of lading along with the other duly signed originals.

It should be noted that the short form of the bill of lading is also used in the business turnover of shipping. This is a document recognized by the ICC and the banking community, in which some or even all of the features of transportation are

indicated by reference to a source or document that is not a bill of lading. This form appeared to simplify commercial documentation and is also a full-fledged commodity-administrative document used for the transportation of container cargo, general cargo (packaged products) and for grouped cargo.

2) The sea waybill (Seaway Bill) is one of the types of waybills used for the carriage of goods by various modes of transport. Sea waybills are named as follows:

- Ocean Waybills;
- Freight (Data Freight Receipts);
- Linear (Liner Waybills).

Sea waybills are used in international trade along with bills of lading when this method of processing cargo transportation satisfies both parties to the trade transaction. Here it should be reminded once again that the sea waybill does not belong to securities, which grant its holder the right to the cargo, but serve as a document confirming the existence of a contract for the carriage of goods, by virtue of which the carrier undertakes to deliver the goods to the recipient specified in this document.

The sea waybill is usually used to accompany sea transportation from one branch to another, i.e. in cases where:

- Letter of credit settlement is not applied;
- Sender and recipient are the same subject;
- With short transportation times (transportation time is less than postal delivery of documents);
- For transportation of goods to a consignment warehouse;
- For transportation of products to the address of representatives for commission trade.

Application of sea waybills is quite wide. It is generally accepted that they, in principle, satisfy both the carrier, the consignee, and the bank. A significant advantage of this accompanying document is that when it is applied, legal and financial problems associated with the discrepancy in the time of arrival of the vessel with the cargo and

the shipping documents that were sent by mail from the port of shipment of the goods disappear.

The International Maritime Committee approved the Uniform Rules for Naval Waybills in 1990. According to these rules, the sea waybill is not a form of title, but only indicates the acceptance of the cargo and the presence of a concluded transportation contract. The right to dispose of the goods belongs to the sender. The use of the sea waybill is also reflected in the Merchant Shipping Code of the Russian Federation.

The International Maritime Committee (Comite Maritime International) is an international non-governmental organization established in 1897 at the initiative of the International Law Association with the aim of promoting the unification of maritime and commercial law (the Russian Federation is a member). Headquarters in Antwerp, Belgium.

Since 1993, the sea waybill has been included in the Unified Rules and Customs for Documentary Credit (ICC Publication No. 600). In the latest edition of the Unified Rules, the requirements for the content of the sea waybill are devoted to Art. 21 "Non-Negotiable Sea Waybill" - waybill without the right to transfer by endorsement.

3) A dock receipt (Dock Receipt or Dock Warrant) is issued during sea transportation by a transport company upon receipt of the goods for transportation at the port pier for transportation abroad. For each batch, such forms are issued in several copies. A dock receipt (or dock option) contains the quantitative characteristics of the goods, marking and cargo volume. If there is a discrepancy in the data or damage to the cargo during its inspection, notes are made in the receipt (before signing it). A bill of lading is drawn up on the basis of a dock receipt.

In practice, Dock Receipt is considered as a document of title. But, it should be noted that this form does not have all the necessary features of such a document, since the dock receipt does not certify the rights of ownership and disposal of the cargo.

4) Delivery Order. This form of document can be used as a receipt from the carrier and confirmation of the contract for the transportation of goods. There are 2

variants of delivery orders (for carriers and for sellers). In the first case, the document is called the ship's delivery order.

The first type is a type of shipping certificate, when at the port of destination the specified part of the cargo is to be issued to the holder of this document. The second option can be used in situations where the seller has one bill of lading for the entire cargo, and the seller needs to sell it in parts to different buyers. The seller cannot transfer the bill of lading to each of the buyers, therefore, in order to resolve this issue in the sales contract, the seller stipulates in advance his right to provide buyers with a Delivery Order instead of the bill of lading.

This form of the document is used together with the bill of lading as an option for splitting a batch of products into small components for the purpose of further sale. At the same time, it should be noted that the delivery order does not apply to securities and does not provide an opportunity for legal protection as a result of damage to the cargo. 3) Dock Receipt (Dock Warrant) is drawn up during sea transportation by the transport company upon receipt of the goods for transportation at the port pier for transportation abroad. For each batch, such forms are issued in several copies. A dock receipt (or dock option) contains the quantitative characteristics of the goods, marking and cargo volume. If there is a discrepancy in the data or damage to the cargo during its inspection, notes are made in the receipt (before signing it). A bill of lading is drawn up on the basis of a dock receipt.

In practice, Dock Receipt is considered as a document of title. But, it should be noted that this form does not have all the necessary features of such a document, since the dock receipt does not certify the right to own and dispose of the cargo.

4) Delivery Order. This form of document can be used as a receipt from the carrier and confirmation of the contract for the transportation of goods. There are 2 variants of delivery orders (for carriers and for sellers). In the first case, the document is called the ship's delivery order.

The first type is a type of shipping certificate, when at the port of destination the specified part of the cargo is to be issued to the holder of this document. The second

option can be used in situations where the seller has one bill of lading for the entire cargo, and the seller needs to sell it in parts to different buyers. The seller cannot transfer the bill of lading to each of the buyers, therefore, in order to resolve this issue in the sales contract, the seller stipulates in advance his right to provide buyers with a Delivery Order instead of the bill of lading.

This form of document is used together with the bill of lading as an option for splitting a batch of products into small components for the purpose of further sale. At the same time, it should be taken into account that the delivery order does not apply to securities and does not provide an opportunity for legal protection as a result of damage to the cargo.

5) Mate's Receipt is issued by the ship's mates after the cargo is accepted on board. This receipt also does not apply to the forms of title of documents, but it can be such in the absence of a bill of lading, if there is a preliminary agreement between the parties to the transaction.

In the practice of a number of countries during sea transportation, documents similar to a navigator's receipt are used as a document temporarily remaining with the owner of the goods in confirmation of receipt of the goods from him. These include, for example, the berthing receipt of the owner of the berth, a receipt for the receipt of goods by the warehouse owner.

This form of the document is similar to the navigator's receipt and is subsequently returned to the entity who transferred it in exchange for a bill of lading or warehouse receipt after the products arrived at the warehouse. These documents do not belong to securities, do not circulate and are not title documents.

6) Warehouse Receipt. This form of documentation serves as a confirmation in the form of a receipt of the responsible person representing the owner of the warehouse space on the acceptance of the goods for temporary storage. The legal meaning of this document is interpreted differently in different countries, and in accordance with the legislation of a number of countries, for example, the USA, it is equated to a security, being issued in a negotiable form. In this form, the warehouse receipt is valid for use to

secure a bank loan. According to American law, the warehouse receipt is assigned the properties of a bill of lading, but in Turkish law there are no such rules.

After all the information was gathered now, we fully understand what type of ship we need, to what port the delivery will be performed and what type of documents “FPS Ukraine” will need to take into account for successful transportation of product to its potential partner in Turkey.

3.3 Estimation of economic efficiency of proposed idea

After looking closely at the aspects of organizing the delivery and transportation process let us uncover the economic efficiency and the way by which we are going to change the distribution flows.

Let us look at current prices for purchase of 1 ton of enriched coal wastes when working with private enterprises and state-owned companies. We say see the prices in Table 3.5

Table 3.5

Purchase prices for enriched coal wastes

Type of company	Purchase price, UAH/ton
Private	230
State-owned	190

As we may see the difference in price is large – about 21% per ton. But yet it is still profitable to work with the government due to large amounts of purchases and their stability in volume of demand.

While it is profitable for the company to work only with domestic clients, “FPS Ukraine” may expand its horizons to foreign markets.

One of the possibilities is reorienting some part of its sales to Turkey as major country that still uses a lot of coal for its power generation.

According to the internal research carried out by the commercial director of “FPS Ukraine” as an author I can provide the information about purchase price of enriched coal wastes by several big TPP’s in Turkey through one major importer. The price for 1 ton is 12,61 USD which is 360 UAH (According to data of NBU of 2-nd of December 2020). This is approximate price for Incoterms-2020 CFR contract (Istanbul Port). This term means that the “FPS Ukraine” fulfills its obligations under the foreign trade contract when it hands over to the buyer the products placed on the ship's side and released by customs as part of the export procedure (export duties and taxes are also paid, if necessary). In this case, the freight is paid by the seller, while import customs clearance and unloading upon arrival remains the responsibility of the buyer (in our case it is Turkish distributor).

Before we estimate the economic efficiency of new destination let us see how the overall change in distribution volume will affect other clients of “FPS Ukraine”. Keep in mind that we need to reorient 24 000 ton of enriched coal wastes from current production capacity of 120 000 ton annually to our new potential partner. The proposed changes are shown in Table 3.6

Table 3.6

Distribution volume reorientation proposal

Client	**Before the changes, ton/ year**	**After the changes, ton/ year**	**Deviation**	
			Numeric	**Percentage**
Uglegorska TPP	26000	20000	-6000	-23%
Tripolska TPP	40000	25000	-15000	-38%
DTEK Burshtyn TPS	34000	31000	-3000	-9%
Dobropillia CPP warehouse	20000	14000	-6000	-30%
Khurakhovska TPP	0	6000	6000	-
Turkey	0	24000	24000	-
Total	120000	120000	0	0%

From this table it is possible to see that the main changes will affect supplies to state-owned companies as they offer the lowest price per ton of our product and reorienting goods flow from them seem as a reasonable solution. 38% of annual supply to Tripolska TPP will be reoriented to new directions as the delivery time and distance seems to affect profits of “FPS Ukraine” more than Uglegorska TPP. Also according to insider information of commercial director volume of production of Dobropillia CPP will be decreasing in the following years so it is reasonable to reorient some part of supply to other nearby located Khurakhovska TPP and sign a contract with them (it is also useful because this TPP is owned by private enterprise and will purchase our product at higher price).

Now let us look what revenue we are going to lose, when we reorient our distribution and sales. Those will be the numbers we will need to compensate and multiply if we want to prove the use of proposed idea and compensate the risk of signing new supply contracts. It is shown in Table 3.7

Table 3.7

Current revenue loss due to reorientation proposal

Client	**Price of sale, UAH/ton**	**Change in volume of sales, ton/ year**	**Revenue loss, UAH**
Uglegorska TPP	190	-6000	-1140000
Tripolska TPP	190	-15000	-2850000
DTEK Burshtyn TPS	230	-3000	-690000
Dobropillia CPP warehouse	230	-6000	-1380000
Total		-30000	-6060000

We may see that we are going to reorient 30 000 tons of enriched coal wastes to new direction that will result in a loss of 6 060 000 UAH of revenue when we take into account current sale price. Sale price numbers may vary with years but the deviation is projected in boundaries of 5-10% annual (increase per year). So for future easier

calculations we are going to assume that average sales price growth is expected to be 7.5% (average number between 10% and 5%). And we will see what loss of revenue we need to at least compensate with our project in Table 3.8

Table 3.8

Projected annual revenue loss due to reorientation

2021

Client type	**Price of sale, UAH/ton**	**Revenue loss**
Private (DTEK Burshtyn TPS, Dobropillia CPP warehouse)	247,25	-2225250
State-owned (Uglegorska TPP, Tripolska TPP)	204,25	-4289250
Total		-6514500

2022

Client type	**Price of sale, UAH/ton**	**Revenue loss**
Private (DTEK Burshtyn TPS, Dobropillia CPP warehouse)	265,8	-2392143,8
State-owned (Uglegorska TPP, Tripolska TPP)	219,6	-4610943,8
Total		-7003087,5

2022

Client type	Price of sale, UAH/ton	Revenue loss
Private (DTEK Burshtyn TPS, Dobropillia CPP warehouse)	285,7	-2571554,5
State-owned (Uglegorska TPP, Tripolska TPP)	236,0	-4956764,5
Total		-7528319,1

When we sum-up all of the given numbers it is a total of -21 045 906,6 UAH of lost revenue throughout period of 2021-2023.

And now it is time to bring up the calculations for our planned export to Turkey on the basis of Incoterms-2020 CFR (Istanbul Port) potential contract. This means we will need to take into account expenses required to get our goods to the Mariupol port, perform export duties and taxes payments, load the cargo and pay for the delivery to the Istanbul port. All these expenses and their projected increase is shown in Table 3.9

Table 3.9

Projected annual revenue gain from implementation of Turkish project

2021						
(A)Contract sales price, UAH/ton	**(A1) Volume of export, ton**	**(B)Transport expenses on the territory of Ukraine, UAH/ton**	**(C) Mariupol Port services, UAH/ton**	**(D) Taxes and export duties, UAH/ton**	**(E) Freight, UAH/ton**	**Revenue (A*A1) - (A1*(B+C+D+E)), UAH**
387	24000	14	10	16	28	7656000

2022						
(A)Contract sales price, UAH/ton	**(A1) Volume of export, ton**	**(B)Transport expenses on the territory of Ukraine, UAH/ton**	**(C) Mariupol Port services, UAH/ton**	**(D) Taxes and export duties, UAH/ton**	**(E) Freight, UAH/ton**	**Revenue (A*A1) - (A1*(B+C+D+E)), UAH**
416,03	24000	14,84	10,6	16,96	29,68	8254680

2023						
(A)Contract sales price, UAH/ton	**(A1) Volume of export, ton**	**(B)Transport expenses on the territory of Ukraine, UAH/ton**	**(C) Mariupol Port services, UAH/ton**	**(D) Taxes and export duties, UAH/ton**	**(E) Freight, UAH/ton**	**Revenue (A*A1) - (A1*(B+C+D+E)), UAH**
447,23	24000	15,7304	11,236	17,9776	31,4608	8899729,8

After we have the calculations of this project it is time for us to compare our potential losses and potential gains from the project and see what “FPS Ukraine” is going to gain from working with Turkish partners. Let us look at Table 3.10

Table 3.10

Revenue gain from implementation of Turkish project

2021			
Revenue loss, UAH	**Revenue gain, UAH**	**Deviation**	
		Numeric, UAH	**Percentage increase**
-6514500	7656000	1141500	14,91%

2022			
Revenue loss, UAH	**Revenue gain, UAH**	**Deviation**	
		Numeric, UAH	**Percentage increase**
-7003087,5	8254680	1251592,5	15,16%

2023			
Revenue loss, UAH	**Revenue gain, UAH**	**Deviation**	
		Numeric, UAH	**Percentage increase**
-7528319,1	8899730	1371411	15,41%

Through looking at these calculations it is possible to see that even with all the additional costs involved connected to transportation to Mariupol port and freight carriage to Istanbul there is a stable increase of revenue when comparing to losses from reorientation to foreign distribution destination. And we are planning on getting an additional 3 764 503,23 UAH of revenue from contract sales throughout period of 2021-2023.

Currently it is not possible to define monthly revenue from the project because of the undefined contract terms (supplies may be done 2 or 3 times per year, also we do not currently know exact months or season when it all will be supplied). But it is still possible to calculate an economic effect from partial reorientation to foreign supply contract. Annual economic effect is shown in Table 3.11 and more visualized approach to comparative percentage revenue increase is shown at Fig. 3.6

Table 3.11

Economic impact of Turkish project

Year	**Comparative revenue increase, UAH**
2021	1141500,0
2022	1251592,5
2023	1371410,7
Total	3764503,2

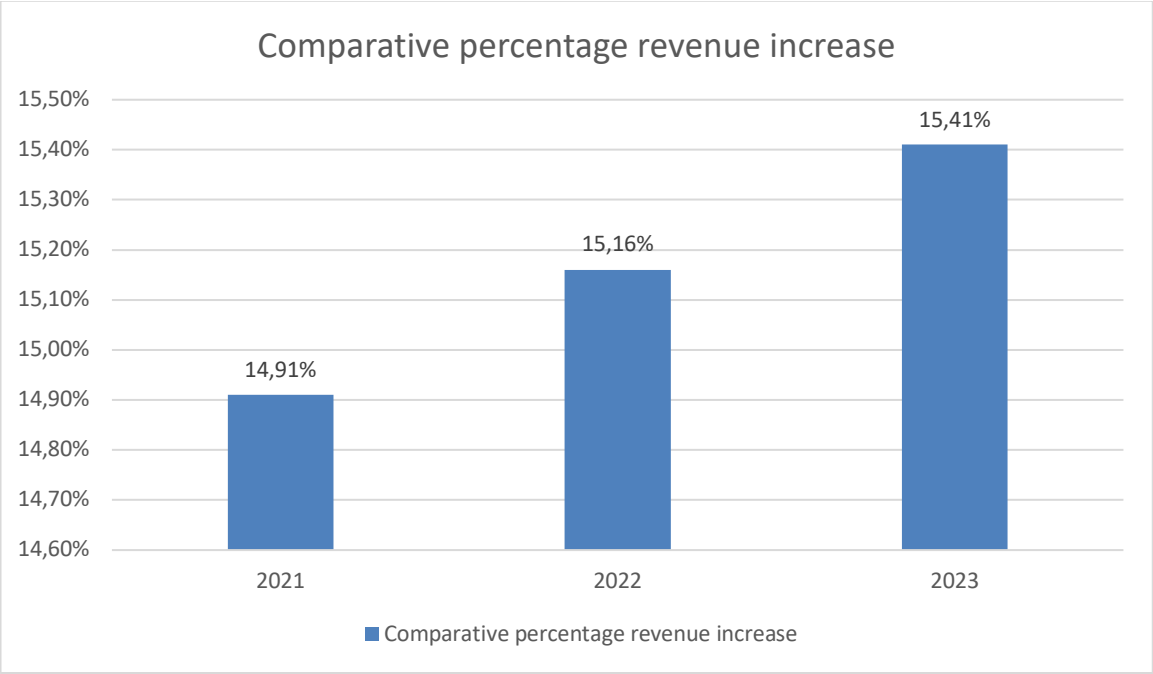

Fig. 3.6 Percentage revenue growth when compared to reorientation losses

So, from all the above we may see that reorientation of 24 000 tons of enriched coal wastes being supplied to domestic consumers to being supplied to Turkey is going to bring considerable and stable increase of revenue throughout years 2021-2023. We are going to mostly reorient our efforts from lower value state-owned companies by resigning contract in the shortest terms (as soon as we have negotiated and signed the 3-year supply contact with Turkish distributor on the terms of Incoterms 2020 CFR (Istanbul port). The choice of CFR is mostly dictated by the partner's willingness to pay extra for less contact with Ukrainian logistics and port operators, and partially because of that "FPS Ukraine" is planning to get such advantageous sales prices for its product when compared to domestic clients. We are planning on getting an additional 3 764 503,23 UAH of revenue from contract sales, an average increase of revenue of 15,16% throughout period of 2021-2023. This is considered low-risk/medium-reward project by "FPS Ukraine" top management preliminary opinion.

CONCLUSION

In the process of general research, it was determined that for the smooth functioning of logistics chains of various lengths and purposes, providing services for the management and maintenance of material flows, it is necessary to have appropriate support. The efficiency and rhythm of the work of service enterprises, organizations and firms largely depends on the complete and rational provision. Such support should be comprehensive - from legal to informational and technical.

Improving management methods using the old traditional methods in the context of the formation of a mixed economy can lead to a significant decrease in the efficiency of enterprises, organizations and firms. Based on market requirements, logistics must fully meet their needs in a new way. At the same time, the development of logistics should correspond to the changes taking place in the sectors of the economy served. The material flow in logistics should be formed on the basis of real solvent volumes of consumption and production of commodity resources. The length of supply chains and their organizational and management structures should adequately reflect the nature of changes in modern production and economic relations, deprived of the former state planning and control. Violation of such proportionality in development can lead to a shortage of commodity resources. The development of logistics is also influenced by other market factors that ensure the successful development of logistics technologies.

The formation in Ukraine of a mixed economy and a competitive environment in the field of commodity circulation, significant changes in the system of organizational and economic relations between participants in the transport process required the search for new approaches to ensuring the effective functioning of transport and distribution systems for servicing the economy and the population of large cities as geo-economic centers for the formation of freight flows.

The process of globalization and integration of economic entities in transport and distribution systems for servicing goods movement has especially affected large sub-

urban industrial zones, for example zones in Zaporizhzhia, Dnieper, areas in Donetsk region.

In the context of the development of market relations, the organization of resource provision in large cities is characterized by a large number of intermediaries, a low level of use of transport and terminal potential, which leads to a high share of transport and logistics costs in prices of end-use goods and a decrease in the competitiveness of domestic products in the domestic and foreign markets. Currently, the total logistics costs account for about 30% of the gross domestic product (GDP) of Ukraine. For comparison, in economically developed countries of the world, these costs are 10-12%. The lack of a progressive system for servicing goods movement, based on the logistics technology accepted in world practice, complicates the process of providing the city with the necessary commodity resources, reduces the efficiency of using the rolling stock of transport, but even more affects the amount of demand for working capital to ensure the process of delivering products from production to consumer. The experience of using logistics systems in developed countries shows the following economic efficiency: reducing transport costs by 7-20%, reducing the cost of loading and unloading and storing material resources by 15-30%, total logistics costs by 12-35%, acceleration turnover of material resources by 20-40% and a decrease in stocks of finished products by 30-50%.

During the study of distribution management and evaluation of delivery and handling schemes it was determined that modern ideas about the transportation of goods in Ukraine began to change significantly with the development of market relations - from transport as an industry equated to industrial sectors, to the service sector - transport service. Therefore, consumers of transport services choose such types of transport and transportation methods that provide the best quality of logistics services.

Transport service in modern conditions includes not only the actual transportation of goods from the supplier to the consumer, but also a large number of forwarding, information operations, cargo handling services, insurance, security, etc. Therefore, transportation can be defined as a key logistics function associated with the movement

of products by a vehicle (or vehicles) using a certain technology in the supply chain, and consisting of logistics operations and functions, including forwarding, cargo handling, packaging, transfer of ownership of goods, insurance of risks, customs procedures, etc.

At the level of the company's logistics management, transportation management consists of several main stages:

· Choice of the type of transport;

· Choice of transportation method (type of transportation);

· Choice of vehicle;

· Selection of a carrier and logistics partners for transportation;

· Optimization of the parameters of the transport process.

When organizing transportation, it is necessary to coordinate and comprehensively plan its operations together with other logistic functions, for example, warehousing, cargo handling, packaging, etc. There are the following main types of transport: railway, sea, inland waterway (river), road, air, pipeline. Each type of transport has specific features, advantages and disadvantages that determine the possibilities of its use in the logistics system.

During the analytical work the financial and entrepreneurial state of LLC “FPS Ukraine” was explored. Specialization of the company - processing of highly complex small waste of coal enrichment at its own modular factories produced in South Africa. “FPS Ukraine” made significant input into development of Ukrainian coal processing market, but also attracted many international investors to other spheres of Ukrainian’s economy and thus helped the general economic development of the country.

Foreign economic activity of the enterprise is mostly connected with import of equipment that is needed for own production processes and minor supply of enriched coal to partners in Poland.

LLC “FPS Ukraine” is working in highly specialized and narrow sector of economy, also the company works with innovative and unique self-developed technologies, thus this company faces many challenges on the market like small number

of buyers and problems with protection of intellectual property. Economic instability of Ukraine and war on Eastern part also does create severe obstacles for smooth development and stable growth of the enterprise.

When conducting financial and business analysis activities LLC ”FPS Ukraine” was given an objective assessment of economic activities and financial and economic indicators.

So, from the calculation of indicators that provide an accurate description of economic condition of the company have the following results:

The analysis of main economic indicators showed that over the past four years the company has been steadily recovering from serious economic downfall due to war in Eastern part of Ukraine that affected the company’s activity in 2015. Comparison between 2016 and 2019 shows that economic performance has significantly improved: from catastrophic expenses to relatively profitable highly specialized production enterprise. Net revenue from sales of products in 2019 compared to 2016 has increased by 5 703 927 UAH, which in percentage terms is 60%.

Having calculated the indicators of property status, we can see that overall indicators have a positive tendency. The Balance of the property of the company has increased by 8 627 204 UAH (by 21,84%), the average value of fixed assets increased by 8 827 629 UAH, which in percentage terms - by 22,35%. This tendency is positive for the enterprise. If we talk about capital-labor, then this indicator has slightly decreased compared with 2015 because of loss of 8 employees by the start of 2016. It has decreased by 8,92%, which could mean that the company has lost some part of its productivity but the objective truth is that in 2015 it was working with less specialists. It is necessary to draw attention to this indicator in the future in order to avoid economic problems.

In 2019, the indicators of maneuverability are more than 0.1, which is a positive trend for the development and further operation of the enterprise.

In general, the financial and economic situation of the company has extremely positive tendency. The financial indicators are way above the normal range. This is

explained by company's current policy of transferring most of its liabilities into long term ones, as it starts new projects and will require major financial involvements.

In the process of proposing ideas and measures for increasing production capacity of the enterprises such solution was found:

After closely looking at company's current sales destinations we may see one major issue with them – lack of international directions for sales of their enriched coal wastes. This is their current weak point in sales management. Main way by which foreign sales are going to be accomplished is automobile transportation from accumulative warehouse near main production site in Dobropillia to Mariupol Commercial Sea Port. After that "FPS Ukraine" will need to arrange delivery by sea from Mariupol to Istanbul Port, where the cargo will be received by local client (it is a major resource distributor and logistics company in Turkey). All of the above will be done in limits of Incoterms-2020 CFR (Istanbul Port).

Reorientation of 24 000 tons of enriched coal wastes from being supplied to domestic consumers to being supplied to Turkey is going to bring considerable and stable increase of revenue throughout years 2021-2023. We are going to mostly reorient our efforts from lower value state-owned companies by resigning contract in the shortest terms (as soon as we have negotiated and signed the 3-year supply contact with Turkish distributor on the terms of Incoterms 2020 CFR (Istanbul port). The choice of CFR is mostly dictated by the partner's willingness to pay extra for less contact with Ukrainian logistics and port operators, and partially because of that "FPS Ukraine" is planning to get such advantageous sales prices for its product when compared to domestic clients. We are planning on getting an additional 3 764 503,23 UAH of revenue from contract sales, an average increase of revenue of 15,16% throughout period of 2021-2023. This is considered low-risk/medium-reward project by "FPS Ukraine" top management preliminary opinion and according to author's expectations is going to secure company's financial position for the next several years, giving it time to develop new foreign directions for supply, innovative technological solutions and possibly expanding its product range.

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APPENDICES

APPENDIX 1

2016													
Months	1	2	3	4	5	6	7	8	9	10	11	12	Total
Name													
Shipped tons Dobropole				7250	6400	6508	4669	3675	4754	3751	5540	2014,03	44561,03
Invoiced				1522500	1344000	1366680	980490	771750	998340	787710	1163400	422946,3	9357816,3
produced in cubical meters						7158,8	5135,9	4042,5	5229,4	4126,1	6094	2215,433	34002,133
Accounts receivable													0
Dobropolskaya				1 522 500	1 344 000	1 366 680	980 490	771 750	998 340	787 710	1 163 400	422 946	9357816,3
Loan (the loan agreement)													0
Returns for the equipment							94 783						94783
% On account balances	2 873	4 146	7 603	581	551	404	345	2 637	3 027	1 384	2 458	3 892	29901
Total income	**2 873**	**4 146**	**7 603**	**3 052 831**	**2 694 951**	**2 747 431**	**2 065 913**	**1 553 855**	**2 009 690**	**1 584 681**	**2 340 892**	**854 014**	**9482500,3**
Accounts payable													
Contractors													
Main contractors					160 613	149 154	132 773	150 763	161 626	164 458	134 615	143 233	1 197 235
Contractor bills					197 258	192 731	201 223	198 492	217 901	198 620	201 022	214 557	1 621 804
Autoservices bills	13 204	18 188	2 852	70 476	78 466	71 448	58 507	96 302	86 175	75 840	91 220	18 126	680 804
Electricity bills	22 027	14 129	12 823	21 635	123 336	244 217	171 910	190 713	178 217	280 867	261 229	143 550	1 664 653
Dobropolskaya bills	6 424	6 334	5 951	9 499	8 577	8 324	9 070	9 319	8 997	9 376	9 332	5 766	96 969
Other Contractors (bills)	19 866	18 703	19 794	20 370	93 260	304 200	46 750	176882	93 013	190 091	206 841	116 906	1 306 676
Wages on accounting	129 901	120 568	127 362	129 128	123 097	124 130	126 400	124 546	123 513	121 837	128 637	121 406	1 500 525
Wages taxes	105 942	105 942	108 549	108 103	108 103	104 152	103 332	108 099	103 258	153 531	103 841	53 452	1 266 304
Bonuses					148 900	134 352	131 954	179 195	164 300	81 910	102 240	145 482	1 088 333
Rent of office	13 140	13 140	13 140	13 140	13 140	13 140	13 140	13 140	13 140	13 140	13 140	13 140	157 680
Communication services	3 166	2 800	3 230	2 800	2 850	7 850	4 100	3 500	3 500	2 510	2 900	2 800	42 006
KrAZ fuel + gas					16 097	12 714	26 202	10 376	10 424	14 610	10 300	10 980	111 703
TMC (parts + services)				55 585	89 404	14 223	20 269	49 383	48 255	25 671	29 473	14 438	346 701
Other Taxes	7 200	7 200	7 200	16 152	23 256	13 000	14 482	18 000	16 300	65 600	13 200	14 600	216 190
Consumables for office (bank, TMC, A/C, water, signatures)	2 559	1 284	10 800	1 352	2 806	1 341	4 770	3 377	4 419	2 678	2 405	1 721	39 512
% Of the credit line	38 227	31 917	61 585	49 117	55 428	54 334	56 133	56 133	54 400	56 133	63 400	65 733	642 540
Total expenses	**361 656**	**340 205**	**373 286**	**497 357**	**1 244 591**	**1 449 310**	**1 121 015**	**1 388 220**	**1 287 438**	**1 456 872**	**1 373 795**	**1 085 890**	**11 979 635**

APPENDIX 2

2017													
Months	1	2	3	4	5	6	7	8	9	10	11	12	Total
Name													
Shipped tons Dobropole	786	1479	1177	7584,1	11714,16	8155,06	6500,76	9721,32	9105,04	8941,4	10570,18	2014,03	77748,05
Invoiced	188640	354960	282480	1820184	2811398,4	1957214,4	1560182,4	2333116,8	2185209,6	2145936	2536843,2	483367,2	18659532
produced in cubical meters	864,6	1626,9	1294,7	8342,51	12885,576	8970,566	7150,836	10693,452	10015,544	9835,54	11627,198	2215,433	85522,855
Accounts receivable													
Dobropolskaya	188 640	354 960	282 480	1 820 184	2 811 398	1 957 214	1 560 182	2 333 117	2 185 210	2 145 936	2 536 843	483 367	18659532
Loan (the loan agreement)			1 981 000	368 000	38 000	13 000							2400000
Returns for the equipment							94 783						94783
% On account balances	2 873	4 146	7 603	581	551	404	345	2 637	3 027	1 384	2 458	3 892	29901
Total income	**191 513**	**359 106**	**2 271 083**	**2 188 765**	**2 849 949**	**1 970 618**	**1 655 310**	**2 335 754**	**2 188 237**	**2 147 320**	**2 539 301**	**487 259**	**21184216**
Accounts payable													
Contractors													
Main contractors	234 000		600 000	296 000	200 000	200 000	818 000	409 000	550 000	639 500	316 000	709 000	4971500
Contractor bills		85 718	94 141	271 638	333 577	333 306	304 762	317 006	325 188	347 137	292 399	143 126	2847998
Autoservices bills	13 204	18 188	2 852	70 476	78 466	71 448	58 507	96 302	86 175	75 840	91 220	18 126	680804
Electricity bills	235 281	271 477	137 003	248 412	393 168	244 217	171 910	190 713	178 217	280 867	261 229	143 550	2756044
Dobropolskaya bills	6 424	6 334	5 951	9 499	8 577	8 324	9 070	9 319	8 997	9 376	9 332	5 766	96969
Other Contractors (bills)	61 252	46 112	97 200	72 950	93 260	304 200	46 750	176882	93 013	190 091	206 841	116 906	1505457
Wages on accounting	158 033	158 033	164 699	162 395	162 395	155 417	154 550	162 375	154 131	216 490	154 962	80 118	1883598
Wages taxes	105 942	105 942	108 549	108 103	108 103	104 152	103 332	108 099	103 258	153 531	103 841	53 452	1266304
Bonuses	120 647	98 962	97 816	115 787	148 900	134 352	131 954	179 195	164 300	81 910	102 240	145 482	1521545
Rent of office	13 140	13 140	13 140	13 140	13 140	13 140	13 140	13 140	13 140	13 140	13 140	13 140	157680
Communication services	7 004	5 119	6 028	6 756	6 185	6 447	7 862	6 355	7 359	6 901	5 354	6 255	77625
KrAZ fuel + gas	13 895	11 541	14 950	14 740	16 097	12 714	26 202	10 376	10 424	14 610	10 300	10 980	166829
TMC (parts + services)	114 632	53 325	119 420	55 585	89 404	14 223	20 269	49 383	48 255	25 671	29 473	14 438	634078
Other Taxes	89 255	7 200	45 000	16 152	23 256	13 000	14 482	18 000	16 300	65 600	13 200	14 600	336045
Consumables for office (bank, TMC, A/C, water, signatures)	2 559	1 284	10 800	1 352	2 806	1 341	4 770	3 377	4 419	2 678	2 405	1 721	39512
% Of the credit line	38 227	31 917	61 585	49 117	55 428	54 334	56 133	56 133	54 400	56 133	63 400	65 733	642540
System of pulp preparation	18 318	229 847											248165
Total expenses	**1 209 656**	**911 974**	**1 576 336**	**1 392 358**	**1 580 528**	**1 537 667**	**1 805 978**	**1 623 604**	**1 649 417**	**2 093 174**	**1 570 641**	**1 393 457**	**19832693**

APPENDIX 3

2018													
Months	1	2	3	4	5	6	7	8	9	10	11	12	Total
Name													
Shipped tons Dobropole			760,76	7584,1	11714,16	8155,06	6500,76	9721,32	9105,04	8941,4	10570,18	2014,03	75066,81
Invoiced			197797,6	1971866	3045681,6	2120315,6	1690197,6	2527543,2	2367310,4	2324764	2748246,8	523647,8	19517370,6
produced in cubical meters			836,836	8342,51	12885,576	8970,566	7150,836	10693,452	10015,544	9835,54	11627,198	2215,433	82573,491
Accounts receivable													
Dobropolskaya			197 798	1 971 866	3 045 682	2 120 316	1 690 198	2 527 543	2 367 310	2 324 764	2 748 247	523 648	19517370,6
Loan (the loan agreement)			1 981 000	368 000	38 000	13 000							2400000
Returns for the equipment							94 783						94783
% On account balances	2 873	4 146	7 603	581	551	404	345	2 637	3 027	1 384	2 458	3 892	29901
Total income	**2 873**	**4 146**	**2 186 401**	**2 340 447**	**3 084 233**	**2 133 720**	**1 785 326**	**2 530 180**	**2 370 337**	**2 326 148**	**2 750 705**	**527 540**	**22042054,6**
Accounts payable													
Contractors													
Main contractors				296 000	200 000	200 000	818 000	409 000	550 000	639 500	316 000	709 000	4 137 500
Contractor bills				271 638	333 577	333 306	304 762	317 006	325 188	347 137	292 399	143 126	2 668 139
Autoservices bills	13 204	18 188	2 852	70 476	78 466	71 448	58 507	96 302	86 175	75 840	91 220	18 126	680 804
Electricity bills	235 281	271 477	137 003	248 412	393 168	244 217	171 910	190 713	178 217	280 867	261 229	143 550	2 756 044
Dobropolskaya bills	6 424	6 334	5 951	9 499	8 577	8 324	9 070	9 319	8 997	9 376	9 332	5 766	96 969
Other Contractors (bills)	61 252	46 112	97 200	72 950	93 260	304 200	46 750	176882	93 013	190 091	206 841	116 906	1 505 457
Wages on accounting	158 033	158 033	164 699	162 395	162 395	155 417	154 550	162 375	154 131	216 490	154 962	80 118	1 883 598
Wages taxes	105 942	105 942	108 549	108 103	108 103	104 152	103 332	108 099	103 258	153 531	103 841	53 452	1 266 304
Bonuses	120 647	98 962	97 816	115 787	148 900	134 352	131 954	179 195	164 300	81 910	102 240	145 482	1 521 545
Rent of office	13 140	13 140	13 140	13 140	13 140	13 140	13 140	13 140	13 140	13 140	13 140	13 140	157 680
Communication services	5 667	5 502	6 629	7 822	7 071	7 819	7 343	6 029	7 510	7 789	5 865	5 585	80 631
KrAZ fuel + gas	13 895	11 541	14 950	14 740	16 097	12 714	26 202	10 376	10 424	14 610	10 300	10 980	166 829
TMC (parts + services)	114 632	53 325	119 420	55 585	89 404	14 223	20 269	49 383	48 255	25 671	29 473	14 438	634 078
Other Taxes	72 837	61 287	55 528	58 872	72 979	59 234	62 743	62 881	50 905	65 659	70 062	55 546	748 533
Consumables for office (bank, TMC, A/C, water, signat	3 172	2 820	2 427	2 029	2 444	2 719	2 567	2 167	2 330	3 115	3 131	3 407	32 328
% Of the credit line	38 227	31 917	61 585	49 117	55 428	54 334	56 133	56 133	54 400	56 133	63 400	65 733	642 540
Total expenses	**975 657**	**826 255**	**882 195**	**1 508 146**	**1 729 427**	**1 672 018**	**1 937 931**	**1 802 800**	**1 813 717**	**2 175 084**	**1 672 882**	**1 538 938**	**18 535 050**

APPENDIX 4

2019													
Months	1	2	3	4	5	6	7	8	9	10	11	12	Total
Name													
Shipped tons Dobropole				6181	4500	5603	5920	5157	5546	6194	5514	5001	49 616
Invoiced				1885205	1372500	1708915	1805600	1572885	1691530	1889170	1681770	1525305	15 132 880
produced in cubical meters				6799,1	4950	6163,3	6512	5672,7	6100,6	6813,4	6065,4	5501,1	54 578
Accounts receivable													
Dobropolskaya				1 885 205	1 372 500	1 708 915	1 805 600	1 572 885	1 691 530	1 889 170	1 681 770	1 525 305	15 132 880
Loan (the loan agreement)													
% On account balances	2 415	1 904	1 255	6 983	4 932	3 816	5 968	4 447	6 781	4 338	5 263	5 446	53 548
Total income	**2 415**	**1 904**	**1 255**	**1 892 188**	**1 377 432**	**1 712 731**	**1 811 568**	**1 577 332**	**1 698 311**	**1 893 508**	**1 687 033**	**1 530 751**	**15 186 428**
Accounts payable													
Contractors													
Main contractors					325 362	387 272	446 464	537 557	402 237	245 457	502 697	205 355	3 052 401
Contractor bills					293 810	202 813	272 135	277 998	213 753	277 598	272 972	303 095	2 114 174
Autoservices bills	13 204	18 188	22 852	70 476	78 466	71 448	58 507	96 302	86 175	75 840	91 220	18 126	700 804
Electricity bills	68 243	69 614	60 759		393 168	244 217	171 910	190 713	178 217	280 867	261 229	143 550	2 062 487
Dobropolskaya bills	6 424	6 334	5 951	9 499	8 577	8 324	9 070	9 319	8 997	9 376	9 332	5 766	96 969
Other Contractors (bills)				72 950	93 260	304 200	46 750	176882	93 013	190 091	206 841	116 906	1 300 893
Wages on accounting	73 330	61 305	62 917	162 395	162 395	155 417	154 550	162 375	154 131	216 490	154 962	80 118	1 600 385
Wages taxes	16 133	13 487	13 842	35 727	35 727	34 192	34 001	35 723	33 909	47 628	34 092	17 626	352 085
Bonuses	120 647			115 787	148 900	134 352	131 954	179 195	164 300	81 910	102 240	145 482	1 324 767
Rent of office	15 000	15 000	15 000	15 000	15 000	15 000	15 000	15 000	15 000	15 000	15 000	15 000	180 000
Communication services	3 166	2 800	3 230	2 800	2 850	7 850	4 100	3 500	3 500	2 510	2 900	2 800	42 006
KrAZ fuel + gas				14 740	16 097	12 714	26 202	10 376	10 424	14 610	10 300	10 980	126 443
TMC (parts + services)	3 000	5 000	25 000	55 585	89 404	14 223	20 269	49 383	48 255	25 671	29 473	14 438	379 701
Other Taxes	8 000	7 000	10 000	16 152	23 256	13 000	14 482	18 000	16 300	65 600	13 200	14 600	219 590
Consumables for office (bank, TMC, A/C, water, signat	5 966	6 631	7 482	6 808	5 647	6 481	5 180	5 960	6 285	5 436	5 023	5 447	72 346
% Of the credit line	25 000	27 700	23 200	50 370	66 139	42 372	62 648	65 716	36 692	44 730	46 031	46 889	537 487
Total expenses	**531 704**	**309 336**	**416 865**	**625 416**	**1 758 213**	**1 651 150**	**1 472 100**	**1 833 540**	**1 467 624**	**1 598 546**	**1 755 208**	**1 143 555**	**14 162 538**

APPENDIX 5

Name of the indicator	Code	January - December 2016	January - December 2017	January - December 2018	January - December 2019
Revenue	2110	9 482 500,30	21 184 216,00	22 042 054,60	15 186 428,00
Cost of sales	2120	9 793 374,00	16 809 581,00	15 795 722,00	11 786 341,70
Gross profit (loss)	2100	- 310 873,70	4 374 635,00	6 246 332,60	3 400 086,30
Administrative expenses	2220	239 198,00	274 817,00	270 639,00	294 352,00
Profit (loss) from sales	2200	9 357 816,30	18 659 532,00	19 517 370,60	15 132 880,00
Other income	2340	124 684,00	2 524 684,00	2 524 684,00	53 548,00
Other expenses	2350	1 730 873,00	2 412 250,00	2 164 085,00	1 862 254,00
Profit (loss) before tax	2300	- 2 280 944,70	1 687 568,00	3 811 608,60	1 243 480,30
Current income tax	2410		336 045,00	748 533,00	219 590,00
Net income (loss)	2400	- 2 280 944,70	1 351 523,00	3 063 075,60	1 023 890,30

APPENDIX 6

Name of the indicator	By 31 of December 2016	By 31 of December 2017	By 31 of December 2018	By 31 of December 2019
Assets				
Tangible non-current assets*	30 000 000,00	33 146 870,00	35 162 416,00	35 130 000,00
Intangible, finacial and other non-current assets**	2 500 000,00	2 414 050,00	2 529 340,00	4 088 081,00
Stores	2 500 000,00	3 611 656,00	3 041 494,00	3 014 751,00
Cash and cash equivalents	3 500 000,00	6 358 460,00	6 694 805,00	5 394 372,00
Financial and other current assets	1 000 000,00	1 500 000,00	1 100 000,00	500 000,00
Balance	**39 500 000,00**	**47 031 036,00**	**48 528 055,00**	**48 127 204,00**
Liabilities				
Capital and reserves	37 250 000,00	44 324 011,00	46 163 385,00	45 583 163,50
Long-term borrowed funds	1 250 000,00	1 207 025,00	1 264 670,00	2 419 040,50
Other long-term liabilities				
Short-term borrowed funds	1 000 000,00	1 500 000,00	1 100 000,00	125 000,00
Other short-term liabilities				
Balance	**39 500 000,00**	**47 031 036,00**	**48 528 055,00**	**48 127 204,00**
*Taking into account fixed assets and unfinished investments in fixed assets		**Taking into account results of R&D, unfinished investements in non-current assets and R&D		