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QUALIFICATION WORK

(EXPLANATORY NOTES)
OF GRADUATE OF ACADEMIC DEGREE
«BACHELOR»

THEME: **«Distribution network management for alcoholic products»**

Speciality 073 «Management»

Educational and Professional Program « Logistics »

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*I certify that in this master thesis
there are no borrowings from the works of other authors
without appropriate references*

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Kyiv 2024

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ТЕМА: «Управління дистрибуційною мережею алкогольної продукції»

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Faculty of Transport, Management and Logistics
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Academic Degree Bachelor

Speciality 073 «Management»

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TASK

FOR COMPLETION THE QUALIFICATION WORK OF GRADUATE

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1. Theme of the qualification work: «Distribution network management for alcoholic products» was approved by the Rector Directive №624/СТ. of April 24, 2024.
2. Term performance of the work: from May 13, 2024 to June 16, 2024.
3. Date of submission work to graduation department: June 03, 2024.
4. Initial data required for writing the work: general and statistical information about logistics market in Ukraine, information of the company BAYADERA LOGISTIC LLC, financial indicators of the company BAYADERA LOGISTIC LLC, articles by specialists in the field of logistics, Internet source.
5. Content of the explanatory notes: introduction, the essence of the distribution network; the specifics of managing the distribution network of alcoholic products; existing approaches to optimization of distribution network management alcoholic products; analysis the activity of the company BAYADERA LOGISTIC LLC; recommendations for improving the management of the distribution network; calculation of the economic effect of the proposed measures; conclusions.
6. List of obligatory graphic matters: tables, charts, graphs, diagrams illustrating the current state of problems and methods of their solution.

7. Calendar schedule:

№	Assignment	Deadline for completion	Mark on completion
1	2	3	4
1.	Study and analysis of scientific articles, literary sources, normative legal documents, preparation of the first version of the introduction and the theoretical chapter	13.05.24-16.05.24	Done
2.	Collection of statistical data, timing, detection of weaknesses, preparation of the first version of the analytical chapter	17.05.24-20.05.24	Done
3.	Development of project proposals and their organizational and economic substantiation, preparation of the first version of the project chapter and conclusions	21.05.24-26.05.24	Done
4.	Editing the first versions and preparing the final version of the qualification work, checking by standards inspector	27.05.24-29.05.24	Done
5.	Approval for a work with supervisor, getting of the report of the supervisor, getting internal and external reviews, transcript of academic record	30.05.24-02.06.24	Done
6.	Submission work to Logistics Department	03.06.24	Done

Graduate _____
(signature)

Supervisor of the qualification work _____
(signature)

8. Consultants of difference chapters of work:

Chapter	Consultant (position, surname and name)	Date, signature	
		The task was given	The task was accepted
Chapter 1	Associate Professor, Karpun O.V.	13.05.24	13.05.24
Chapter 2	Associate Professor, Karpun O.V.	17.05.24	17.05.24
Chapter 3	Associate Professor, Karpun O.V.	21.05.24	21.05.24

9. Given date of the task May 13, 2024.

Supervisor of the qualification work: _____ Olga KARPUN
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Task accepted for completion: _____ Diana SOLOVIOVA
(signature of graduate) (surname and name)

ABSTRACT

The explanatory notes to the qualification paper «Distribution network management for alcoholic products» comprises of 84 pages, 45 figures, 25 tables, 52 references and 1 appendix.

KEY WORDS: DISTRIBUTION, DISTRIBUTION NETWORK, MANAGEMENT, ALCOHOLIC PRODUCTS, LOGISTICS, ECONOMIC EFFICIENCY, INFORMATION SYSTEM, DIGITALIZATION.

The qualification work is devoted to the study of theoretical and practical aspects of managing the distribution network of alcoholic products, taking into account modern trends.

In the theoretical part, the essence of the concept of distribution network, the specifics of distribution network management, existing approaches to optimization of distribution network management are considered alcoholic products.

In the analytical part, the activity of “BAYADERA LOGISTIC LLC” activities were analyzed, the analysis of production and financial indicators and the analysis of the distribution network of alcoholic products were carried out.

In the project part, shortcomings are analyzed and possible areas of management improvement are proposed distribution network of the company, the economic effect of the implemented changes was calculated.

Materials of qualification paper are recommended to be used during scientific research, in the educational process and in the practice of specialists of logistics departments.

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NOTATION

AI	– Artificial intelligence;
CRM	– Customer relationship management;
DRP	– Distribution requirements planning;
ERP	– Enterprise resource planning;
LLC	– Limited liability company;
TMS	– Transport Management System;
WMS	– Warehouse Management System.

INTRODUCTION

Distribution is a broad concept, which can be characterized as a set of processes for the sale of goods to the end consumer. Distribution has several main stages – production of goods, purchase by a distributor of goods from the manufacturer, warehouse operations, transport operations, distribution of products between points of sale to the buyer. This process needs to be viewed comprehensively and methods of improvement analyzed at each stage.

The relevance of the study of methods and processes of improvement of the distribution network comes directly from the definition of the term. This is a set of operations carried out with products from production to the consumer to ensure quality service to the client. The level of serving the client's needs, market share, and reputation depend on the quality of the distribution setup, which affects the company's final earnings. Another aspect is the reduction of costs, which are numerous in the distribution process, due to optimization, implementation of digital technologies, and establishment of corporate ethics.

Taking into account the current trends in the development of the economy, business and society, management methods need rapid changes and improvements. Therefore, the processes and the management system must be flexible, as simplified as possible and digitized.

The above can be supported by the fact that customer expectations are becoming higher due to the increase in the level of service not only in the market of distribution services, but also in general in related areas. Currently, it is not enough to simply fulfill the functions of a distributor; it is needed to offer modern solutions to the client in order to keep their attention. The market is developing rapidly; customer loyalty is not as stable as before, so it is easy for a competitor to take away customers.

The first stage of improving the distribution network system is the analysis of the company's financial and production indicators, the analysis of available technologies on the market, the analysis of problem areas and taking into account

customer feedback and suggestions. Analytical and economic methods are used to carry out this analysis. A timely analysis reduces the risks of costs, loss of market share, customer dissatisfaction, strengthening of competitors, and aging of technological processes. The second stage can be considered as the formation of a change implementation strategy. Such a strategy includes a list of proposals and methods, a step-by-step plan and a calculation of the economic effect.

The purpose of the qualification work is to structure theoretical information about distribution network management, to conduct an analysis of the company based on real indicators, to develop practical recommendations for improvement management of the distribution network of alcohol products. The development of the proposal includes the analysis of process deficiencies and the development of a practical recommendations for improving the distribution network.

The object of the research is the distribution process of BAYADERA LOGISTIC LLC. The organization of distribution in conditions where production and distribution centers are part of one group of companies is considered.

The subject of the research is the logistics principles for the process management in the distribution network of the company.

To achieve the goal of the qualification work, the following tasks are defined:

- analyze the literature, recent works and define the term distribution network;
- to determine the main components of the distribution network;
- to determine the existing methods of managing the distribution network;
- to conduct an analysis of the production and financial indicators of the company BAYADERA LOGISTIC LLC;
- to determine possible directions for improving the functioning of distribution processes;
- to develop recommendations for improving the management of the distribution network;
- to calculate the economic effect of the proposed recommendations.

In the process of performing the work, general scientific and empirical methods were used and research, namely: system analysis, generalization, presentation of data

in tabular and graphic methods, statistical analysis, comparative analysis, forecasting. Special research methods were also used: SWOT analysis to determine the company's weaknesses, strengths, opportunities and threats; TOWS analysis to form a strategy of using strengths to develop opportunities and reduce threats; calculation of the economic effect to analyze the effectiveness of implemented changes.

To carry out the work, articles by specialists in the field of distribution, which are posted in periodicals, monographs, textbooks and electronic sources were used. For the analysis of the company, the company's reporting, data posted on the official website, in open registers were used. In order to develop a proposal for improving processes, an analysis of competitors on the market, interviews with specialists, and an analysis of Internet resources were carried out.

CHAPTER 1

THEORETICAL APPROACHES TO THE DISTRIBUTION NETWORK MANAGEMENT OF ALCOHOL PRODUCTS

1.1 The essence of the concepts "distribution network" and "distribution management network"

Increasing competition on the market is the basis for the development of sales activity. In such rich relations, the first priority is to win over customers and provide high-quality service, which is possible only if the product path from the manufacturer to the customer is well thought out. In addition, the value of products must be conveyed to the client using information channels. All this together is a distribution network, as part of the full cycle of product sales.

To understand the main object of the study, the definition of the distribution network should be provided.

There are many views on the definition of the term distribution, which can be seen from the Table 1.1. These are both narrow and extended definitions. This work will be based on the definition of Haivanovych N.V. [32], which can be considered the most extensive of those developed. The fact that modern distribution is definitely a broader concept than the movement of material resources to the consumer is indisputable. Therefore, it is relevant to note that the distribution takes place on a partnership basis between each element. Therefore, distribution should be organized on the basis of profitability and efficiency at each stage.

In modern conditions, distribution should be considered comprehensively, as a logistics, marketing, sales, service provision processes. It can also be defined as the tangible and intangible component of product sales. The reason is the high competition in the market among manufacturers and the fight for the attention of the client.

Table 1.1 – Analysis of the main approaches to defining the concept of distribution

№	Source	Definition
1	2	3
1	Wikipedia [6]	Distribution is a concept in logistics, sometimes referred to as distribution / distribution logistics, which means a complex of interrelated functions that are implemented in the process of distributing the material flow between different, as a rule, wholesale buyers.
2	A.O. Bolvinova [26]	Distribution (distribution of goods) is the process of moving goods from producers to end consumers. It covers the physical movement and storage of goods studied by logistics.
3	Bilovodska O., Gvozdetsla M. [29]	Distribution is a set of methods and tools thanks to which goods are delivered from the manufacturer to end consumer.
4	Kompanchenko K.Y., Savitska O.M. [42]	Distribution is a complex logistics activity, the essence of which is promotion of finished products from the manufacturer to the final (or intermediate) consumer, sales organization, pre-sale and after-sale service.
5	Haivanovych N.V. [32]	Distribution is a complex of interrelated functions, which are implemented by subjects of joint (partnership, contractual, legally institutionalized) activities for the distribution and promotion of products (goods, works, services) from the manufacturer (first representative) to of the final consumer on the basis of integrated strategic and tactical management, which allows to ensure optimal movement of goods, speed circulation of working capital and high efficiency commodity exchange processes, marketing and logistics.

An important stage is the organization of information flows for establishing communication with clients. However, the basis of distribution is logistics operations directly related to the movement of goods, warehousing and related operations that are necessary.

It follows from the above that distribution functions:

Logistics functions – physical movement of goods to the consumer in compliance with 7Rights of Logistics (Right Time, Right Place, Right Products, Right Price, Right Condition, Right Quantity, Right Customer).

Marketing functions – organizing the sale of goods to the final buyer, using the company's marketing strategy and the foundations of the organization of supply chain.

It is appropriate to add a third link – creating a service. Customer interaction and improving the quality of the final service are the basis of competitiveness in the distribution market.

The function of creating a service – the analysis of the client's needs, the level of service provided by competitors and taking this into account when developing strategic planning. The function related to the provision of services is the organization of distribution in such a way as to take into account the needs of consumers and the fulfillment of orders in the shortest possible time and with the appropriate quality.

In the Table 1.2, the definition of the distribution network should be noted. Different views on the definition of the term are indicated in the table.

This work will be based on the definition of the distribution network outlined in the article by the DHL company, which is the leader in the logistics market. A distribution network is a network of transport and storage facilities that are connected to each other, but each performs a certain number of duties at the stage of movement.

Distribution is a complex and multifunctional process, which includes a number of interconnected and sequential operations. The supply and distribution chain is formed on the basis of market analysis, product specifics, delivery geography, and financial forecasts.

Which activities are part of the distribution network:

- transportation;
- storage;
- packaging;
- organization of sales;
- a system of communication with buyers;
- inventory management;
- organization of material flows;
- organization of information flows.

Table 1.2 – Analysis of the main approaches to defining the concept of distribution network

№	Source	Definition
1	2	3
1	Bolvinova A.O. [30]	A distribution network is a set of economic entities used by a manufacturer to distribute its goods to consumers. The distribution network is characterized by: – length, that is, the number of economic entities included in the chain; – distribution of functions between entities
2	Kiydan D. O. [41]	"Logistic distribution "network" is a collection of warehouses and transport facilities systems that are interconnected, which allow you to deliver goods to end consumer. The distribution network can be considered as a complete set distribution channels through which goods are delivered to the end consumer."
3	Hryhorak M.Yu., Karpun O.V., Katerna O.K., Molchanova K.M. [33]	The entire set of distribution channels forms a distribution network. A rational (effective) distribution network is not just a competitive advantage, but a primary task for any participant in the supply chain
4	Freight Connections powered by DHL [7]	A distribution network is the process of distributing goods within an interconnected group of storage facilities through the interconnection of transportation mode. Each facility performs specialized duties to facilitate the delivery of goods to the final consumer.
5	Investopedia [8]	A distribution network is an interconnected group of storage facilities and transportation systems that receive inventories of goods and then deliver them to customers.

Fulfillment of the activities and tasks of the distribution network is possible in the presence of an effective management system that streamlines the execution of processes that must take place in a clear sequence and comply with regulatory acts.

The composition of the distribution network provokes the need for a coordinated management process. The definition of the term is indicated in Fig. 1.1.

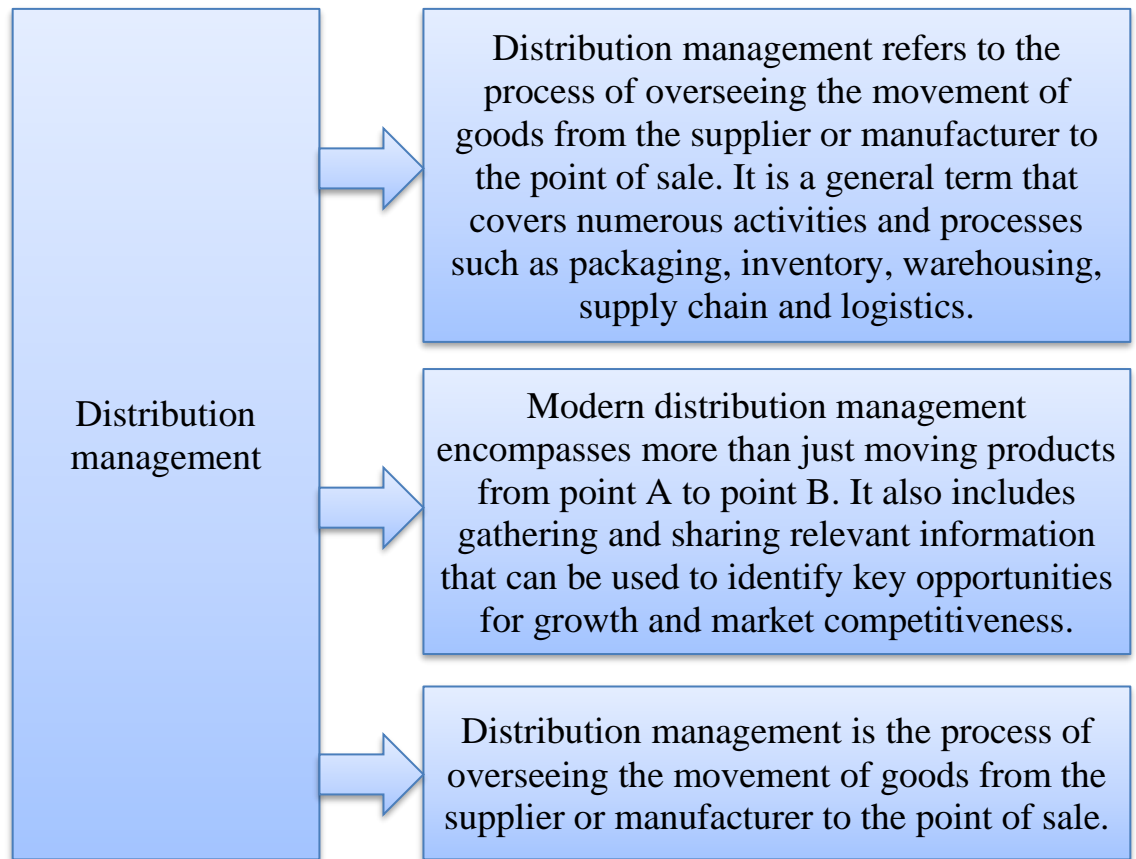


Figure 1.1 – Definition of the term «distribution management» [55]

The main tasks of logistics network management:

- building efficient supply chains;
- organization of communication in the distribution system;
- determining the location of warehouses;
- organization of logistics operations for the transportation of goods;
- provision of logistic services.

Fulfillment of the tasks of the distribution network is possible in the presence of an effective management system that streamlines the execution of processes that must take place in a clear sequence and comply with regulatory acts.

It can be included 5 stages in the planning and management of the distribution network, which should be described separately to form a complete picture of organizational activity (Fig. 1.2).

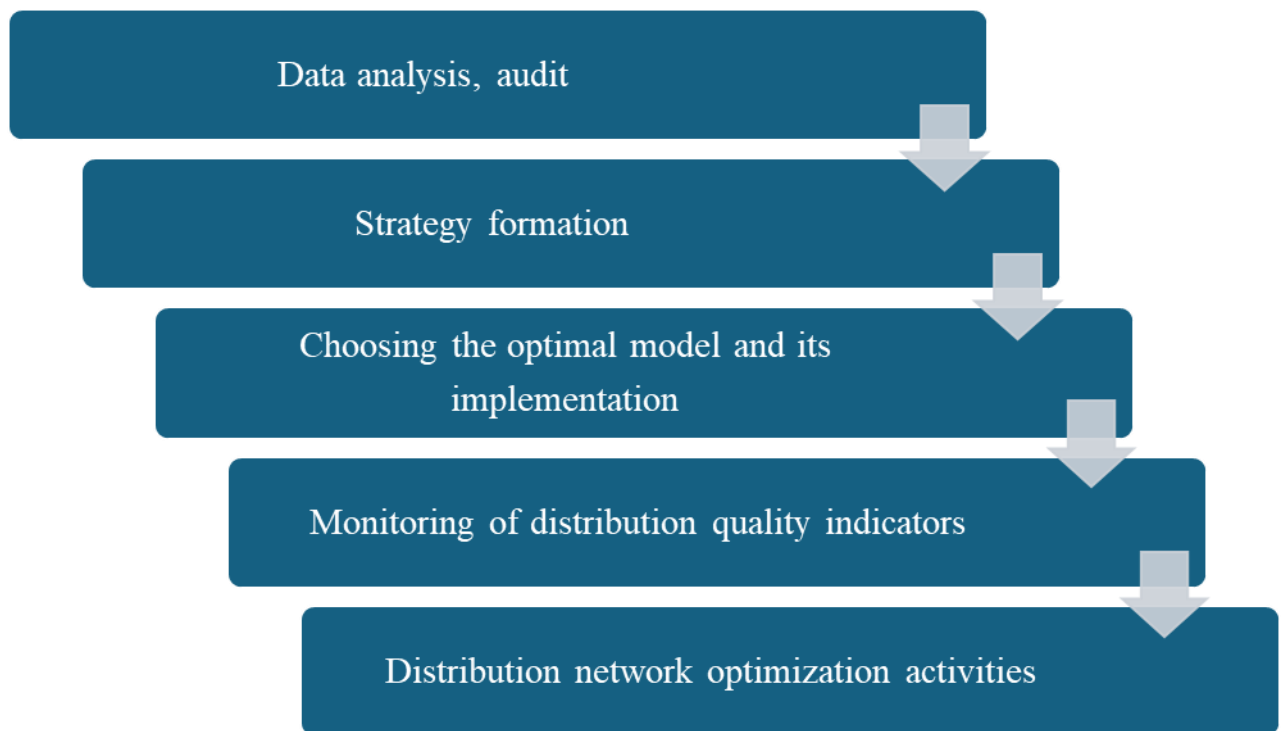


Figure 1.2 – The process of forming a distribution network

The first stage is characterized by the analysis of data, financial statements, forecasting the volume of sales and stocks. The task of managers is to prepare an action plan for the development of sales and optimization of the transportation of goods to the client.

The second stage is the formation of a strategy based on the data obtained in the first stage. Taking into account the forecasts and capabilities of the company, strategic directions of development, action systems for adaptation to external and internal stimuli are determined.

At the third stage, to choose a distribution network model, indicators that are standard for a specific network should be determined. After designing several forms of the distribution network, analyzing the risks and benefits, it is possible to choose the best option.

The fourth stage is the compliance of the level of execution of processes and final products with the standards and relevant documentation. The control system determines the positive results and weak points that arise in the process of organization and management of the distribution network.

The fifth stage is the final one and is the result of the previous ones. It includes quality management of weak points in the process of logistics operations. It is necessary to create a list of possible activities that will raise the level of logistics service in the next cycle of the distribution network.

1.2 The specifics of managing the distribution network of alcoholic products

Management of the distribution network can only be considered as a complex of actions aimed at planning and controlling each stage of distribution. The main components of the management system are transportation, stocks, insurance, warehousing, packaging, communication system.

The sequence of operations is shown in Fig. 1.3.

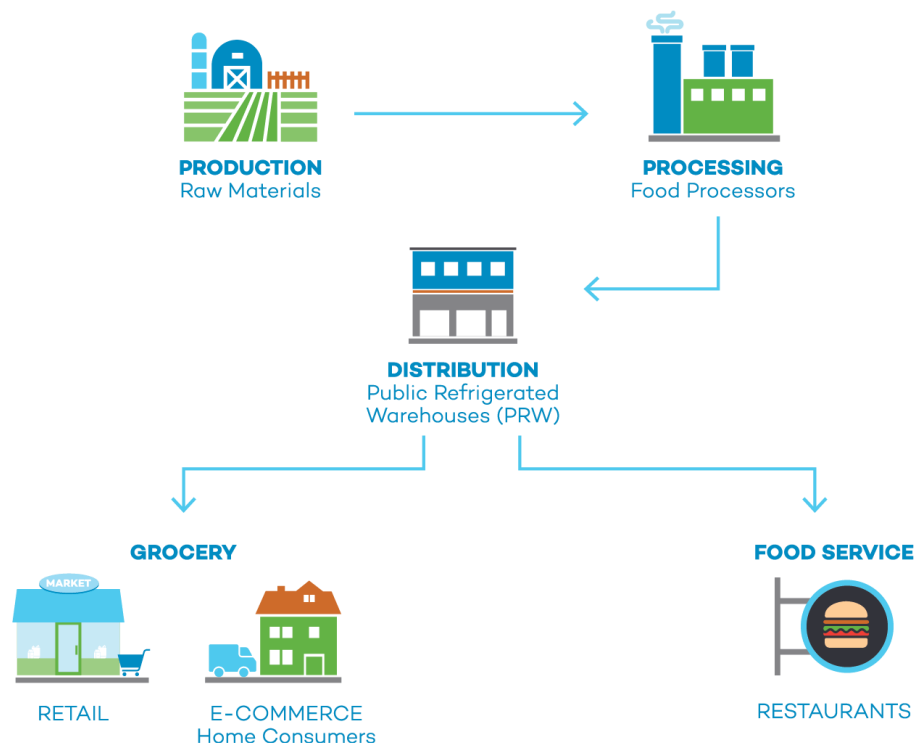


Figure 1.3 – The sequence of operations [17]

In this work, the distribution chain of the second level will be considered. Namely: Producer – Distributor – Retailer – Consumer.

This is the most popular type of distribution chain. The manufacturer sells goods to the distributor at a reduced price. The distributor buys goods from several manufacturers and supplies goods of different brands to retailers. The distributor organizes the supply chain, is responsible for warehousing, develops a marketing strategy to expand the audience of the product to be sold. The retailer sells directly to the buyer.

The manufacturer's tasks include the purchase of raw materials, production, quality control, preparation of product documentation, pricing policy, signing contracts with distributors.

The task of the distributor should be considered in more detail:

1. Purchase of goods from the manufacturer. The distributor buys the quantity of goods determined by the sales department at a reduced price, checks the quality of the goods, issues the necessary documents.

2. Warehousing management. The warehouse is an intermediate element of the distribution network. Warehousing is the process of storing material resources in a specially equipped building. Storage is not a simple and static process. It includes: unloading, receiving, sorting, placing in own storage, extraction, assembly, waiting (standing), loading (logistics), documentation of all operations [21].

3. Transportation management. For the transportation of food products, the company can use its own or hired transport. The choice should be based on calculations of costs per transported box, cost per kilometer and volumes of deliveries.

4. Marketing – market analysis, promotion strategy development, sales increase.

5. Communication with clients is client support at all levels of cooperation, analysis of client needs, provision of consulting services and work with problems and claims [57].

Sales channels:

1. Retail. Sale of goods directly to the buyer at the retail price in retail outlets. The retailer buys goods at a wholesale price and sells them at a markup.

2. E-commerce is the sale of products through the Internet using computer technologies. The distributor carries out sales to consumers and organizes the delivery of goods to the required address. The sale is carried out at the price set by the distributor.

3. HoReCa – sale of products in large batches to catering and hotel businesses. The products will be consumed in places where establishments are located.

The legislative framework for the distribution of alcohol products should be considered.

License for the production of alcoholic beverages. To obtain a license for the production of alcoholic beverages, the company submits an application to the State Tax Service of Ukraine. After reviewing the documents and conducting attestation of the applicant for compliance with the requirements of the legislation in the field of alcohol production, the DPS makes a decision on issuing a license or refuses it [44].

License for retail sale of alcoholic beverages. Retail sale of alcoholic beverages may be carried out only with the relevant license. To get it, it is needed to submit an application to the head office of the State Tax Service of Ukraine [41].

On the approval of the Regulation on the manufacture, storage, sale of excise tax stamps and labeling of alcoholic beverages and tobacco products. Procedure for production, sale, labeling of alcoholic products [35].

Tax code of Ukraine. Article 226. Production, storage, sale of excise tax stamps and labeling of alcoholic beverages, tobacco products and liquids used in electronic cigarettes [49].

The peculiarities of food products, as a type of product, force certain rules to be observed during transportation (Fig. 1.4).

The rules for the transportation of alcoholic products should be considered separately. In addition to the above-mentioned features and rules, additional ones indicated in Fig. 1.5 are mandatory.

Sanitary condition of the car

- Observance of sanitary standards, absence of extraneous odors, protection from sunlight

Temperature regime

- The temperature regime should correspond to the type of product

Technical condition of the car

- Timely maintenance, carrying out necessary repairs

Figure 1.4 – Rules for the transportation of food products

Absence of extraneous odors

- Corks in bottles with alcohol do not ensure absolute tightness, so wine and champagne can "absorb" unpleasant odors from the body.

Temperature regime

- It is not recommended to transport alcoholic beverages during unbearable heat or severe frost: the optimal temperature range is +10-15 degrees Celsius. Too low a temperature is dangerous for drinks with an ethyl alcohol content of less than 40% - it can precipitate and completely change the taste. For long-term transportation, it should be used a refrigerated body.

Product fixation

- When transporting alcoholic beverages in boxes, it is necessary to observe the indicated stacking height, as well as to secure the products with ties or belts. Wine bottles are recommended to be transported in a horizontal position so that the contents are in contact with the cork.

Figure 1.5 – Rules for the transportation of alcoholic products [47]

The main result of the management of the distribution network of food products is the delivery of quality goods in due time and the creation of a competitive logistics service.

Formation algorithm logistics service [16]:

1. Segmentation of the company's customers.
2. Determination of criteria that are important for customers of each segment.
3. Ranking of the defined criteria by importance for each customer segment.
4. Evaluation of services and maintenance provided by defined criteria.

Calculation of existing levels service for each customer segment.

5. Determination of optimal service levels for each customer segment.
6. Definition of service standards for each customer segment.
7. Establishing feedback with clients.

1.3 Existing approaches to optimization of distribution network management alcoholic products

Distribution management requires the rapid processing of a large amount of information at the same time. Therefore, there is an urgent need for a single resource that will collect and distribute information about network units, namely: finances, resources, sales, communication channels, documentation.

For distribution management, special software is used for automated analysis, planning and control of distribution operations.

ERP system (enterprise resource planning) is a software for enterprise resource planning that helps to control internal processes and make important decisions regarding business development in real time. It is a set of separate modules that are connected and integrated with each other. Each of these modules is responsible for a specific business area: finance, production, personnel accounting, marketing and sales, planning, procurement, logistics, and others [24].

The ERP system solves the problem of information separation in certain departments of the company and the impossibility of quick exchange of necessary data, which wastes additional time and resources. The use of ERP is paid, but speeding up processes, reducing the risk of data loss, increased attention to analysis leads to optimization of the company's work and increased profits.

The company can decide which functional units it wants to combine to optimize business processes. The Fig. 1.6 shows the sequence of functioning of the ERP system, which includes 7 main stages. The filling of the functional is quite natural and is the result of many years of business existence.

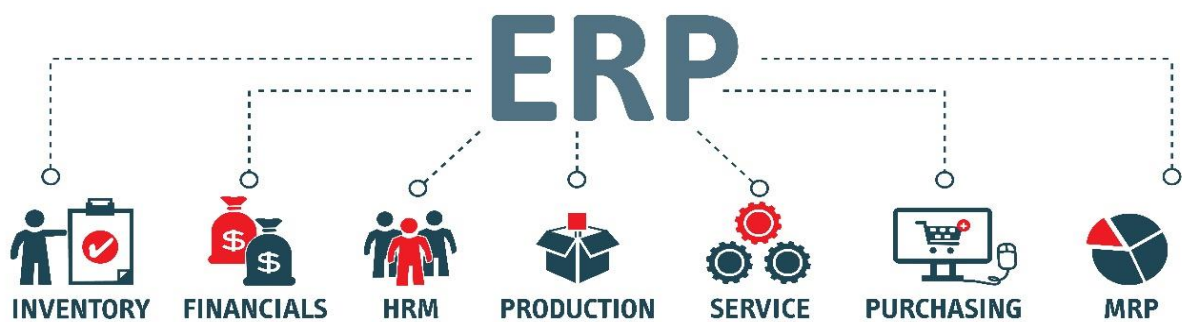


Figure 1.6 – The sequence of functioning of the ERP system [19]

Examples of programs that can be used in a distribution network:

- SAP;
- Oracle ERP Cloud;
- Microsoft Dynamics 365;
- Epicor;
- Sage.

A DRP system can be integrated into the ERP system for distribution management.

DRP is a system that is created to plan the right amount of products to be manufactured, the optimal level of stocks in the warehouse is determined. This makes it possible to combine logistics and marketing processes, to forecast and reduce the

costs of turnover. The use of this system allows to produce the amount of products that will be consumed exactly.

First, volume planning takes place, taking into account the number of orders. Next, production schedules are developed, warehouses are prepared, and transportation routes are formed.

The WMS system (Warehouse Management System) is a software and hardware system for warehouse management that provides comprehensive automation of business logistics operations. This includes the reception of goods or warehouse materials, their packaging, storage, movement, inventory and integration with other participants of the operational process (Fig. 1.7). The system receives and analyzes data about each of these processes and then uses it to generate reports that can later be viewed by the warehouse manager. Thus, the software takes over most of the important tasks that were previously controlled by the employees themselves [56].

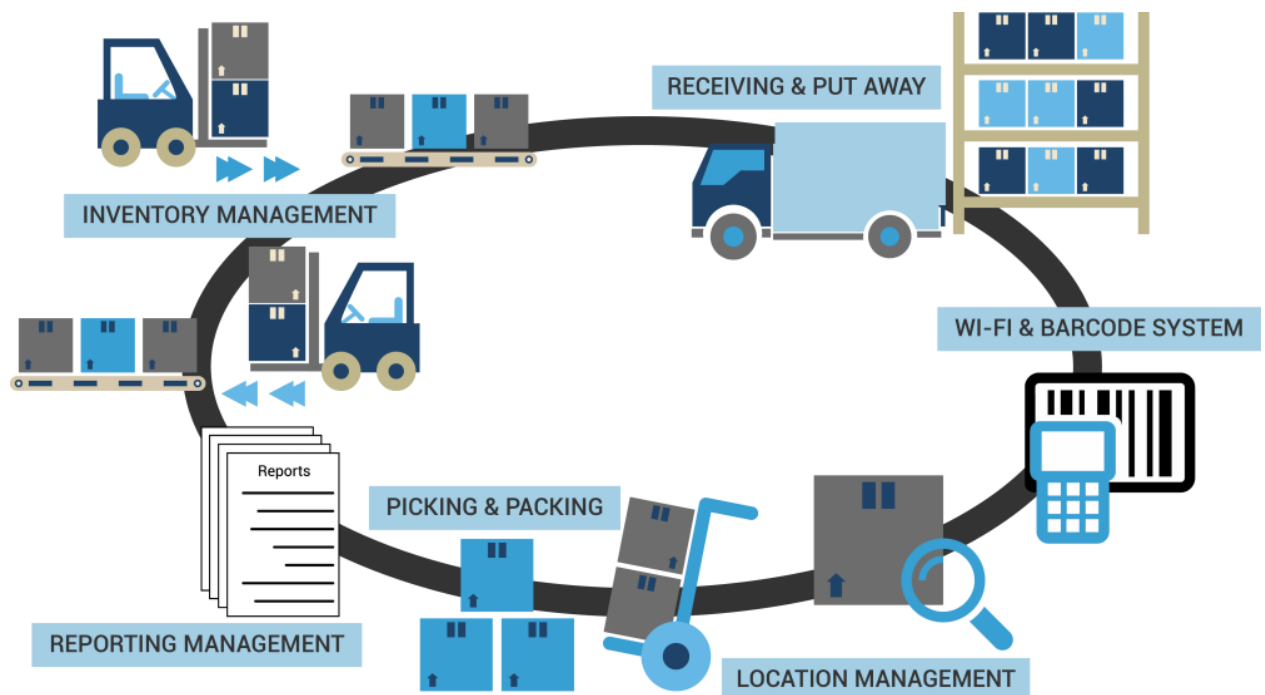


Figure 1.7 – Warehouse Management System [14]

What problems does WMS solve:

- optimizing the use of warehouse space;
- optimizing the reception of goods (reduction of re assortment, shortages);

- optimizing the documentation;
- faster and better inventorying of the warehouse, which is carried out without interfering with the daily operations in the warehouse;
- analysis of the work of warehouse workers.

When considering possible options for optimizing the warehousing process, it should be paid attention to the trend of modern warehouse logistics – Virtual Warehousing and Space Planning.

3D Warehouse Modeling and Mapping: Distributors can use 3D computing to create virtual models of their warehouses. This helps in visualizing the layout, optimizing storage space, and planning for efficient material handling. It can also assist in simulating and analyzing different warehouse configurations for better space utilization and future robotic integration [1].

The logistics aspect can also be automated with the help of modern trends and technologies. The most effective and popular is the use of Artificial Intelligence. It is a technology that quickly spreads to various aspects of business and can be effectively used in the distribution system at all stages.

Artificial intelligence makes it possible to:

1. Optimize route planning. Building a route model makes it possible to take into account traffic jams, peculiarities of traffic rules, weather conditions, priority of delivery, quantity of cargo.
2. Predictive analytics. It gives an opportunity forecast demand and identify possible bottlenecks, use previous experience for planning, exclude overhead costs.

A common example of the use of AI in logistics is the TMS system, which, like the WMS system, is aimed at automation. processes. TMS is a system that can be used to optimize transportation management processes.

Integrating AI into TMS systems enables intelligent workload distribution by optimizing the allocation of available resources such as carriers, trucks and drivers. By analyzing real-time data, including delivery characteristics, carrier availability and delivery requirements, AI algorithms can match loads with the most suitable carriers, taking into account factors such as capacity, location and past performance [20].

Chapter 1 summary

In this chapter, the definition of the terms distribution, distribution network, management of the distribution network was specified.

It was determined that the distribution network is the processes that are performed to organize the sale of products to the final consumer. This includes manufacturing, transportation, warehousing, marketing, and customer communication.

A significant feature of the distribution of alcoholic products is the need to obtain a license for production and sale. When producing alcohol, the manufacturer must mark the product with an excise stamp. A tax must be paid for the sale of alcohol, depending on the type of product.

The purpose of the distribution network is to sell final products to the consumer through sales channels. A sales channel is a place and method of selling goods. Sales channels are retail, HoReCa, e-commerce.

Modern methods of managing the distribution network, which are used to optimize and digitize processes, were determined. These include DRP, ERP, and CRM. These are systems for management, data processing, analysis, and communication of various departments.

CHAPTER 2

ANALYSIS OF ORGANIZATIONAL AND ECONOMIC CHARACTERISTICS OF MANAGEMENT OF THE ENTERPRISE'S DISTRIBUTION NETWORK

2.1 General characteristics of the activity of the company "BAYADERA LOGISTIC"

BAYADERA GROUP is a leader in the alcohol industry of Ukraine, successfully operating on the market since 1991. The largest distribution network (27 branches) provides direct deliveries to 35,000 retail outlets in the country. BAYADERA GROUP covers more than 30% of the Ukrainian vodka market in terms of production and sales. The holding unites specialized assets — distribution companies and three own production sites: "National Distilled Company", "KOBLEVO" winery and "Mykolaivskiy Cognac Plant" [22].

The composition of Bayadera Group is shown on Fig. 2.1.

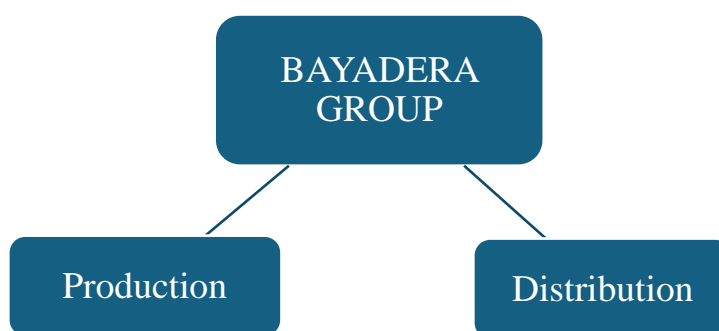


Figure 2.1 – The composition of Bayadera Group

Standard Industrial Classification code:

- 46.34 – Wholesale of beverages (main).
- 46.90 – Non-specialized wholesale trade.
- 47.11 – Retail sale in non-specialized stores mainly of food, beverages and tobacco.
- 47.25 – Retail sale of beverages in specialized stores.
- 49.41 – Freight road transport.
- 56.10 – Activities of restaurants, provision of mobile food services.
- 52.10 – Warehousing.
- 63.11 – Data processing, posting of information on web sites and related activities.
- 63.99 – Provision of other information services, n.e.c.
- 69.10 – Activities in the field of law.
- 70.22 – Consulting on issues of commercial activity and management.
- 73.11 – Advertising agencies.
- 73.20 – Research of the market situation and identification of public opinion.
- 74.90 – Other professional, scientific and technical activities [3].
- Main information of company is presented in Table 2.1.

Table 2.1 – Main information of company [5]

Indicators	Description
1	2
Legal entity's full name	ТОВАРИСТВО З ОБМЕЖЕНОЮ ВІДПОВІДАЛЬНІСТЮ БАЯДЕРА ЛОГІСТИК
Short name	LLC "BAYADERA LOGISTIC"
USREOU code	35871504
Registration date	21.04.2008
Authorised person	Alexandr Mykolayovych Bezugly
The size of the authorized capital	1 058 400.00 UAH
Type of business entity	Limited liability company
Information about legal entity's governing body	SUPREME BODY -GENERAL MEETING, EXECUTIVE BODY-DIRECTOR
Trademarks (archive)	251 trademarks

The company has a strong portfolio of more than 30 own alcohol brands, and is also an exclusive importer of world brands: Moët Hennessy, Diageo, Rémy Cointreau, Jägermeister, etc [22].

The composition of holding is represented in Fig. 2.2.

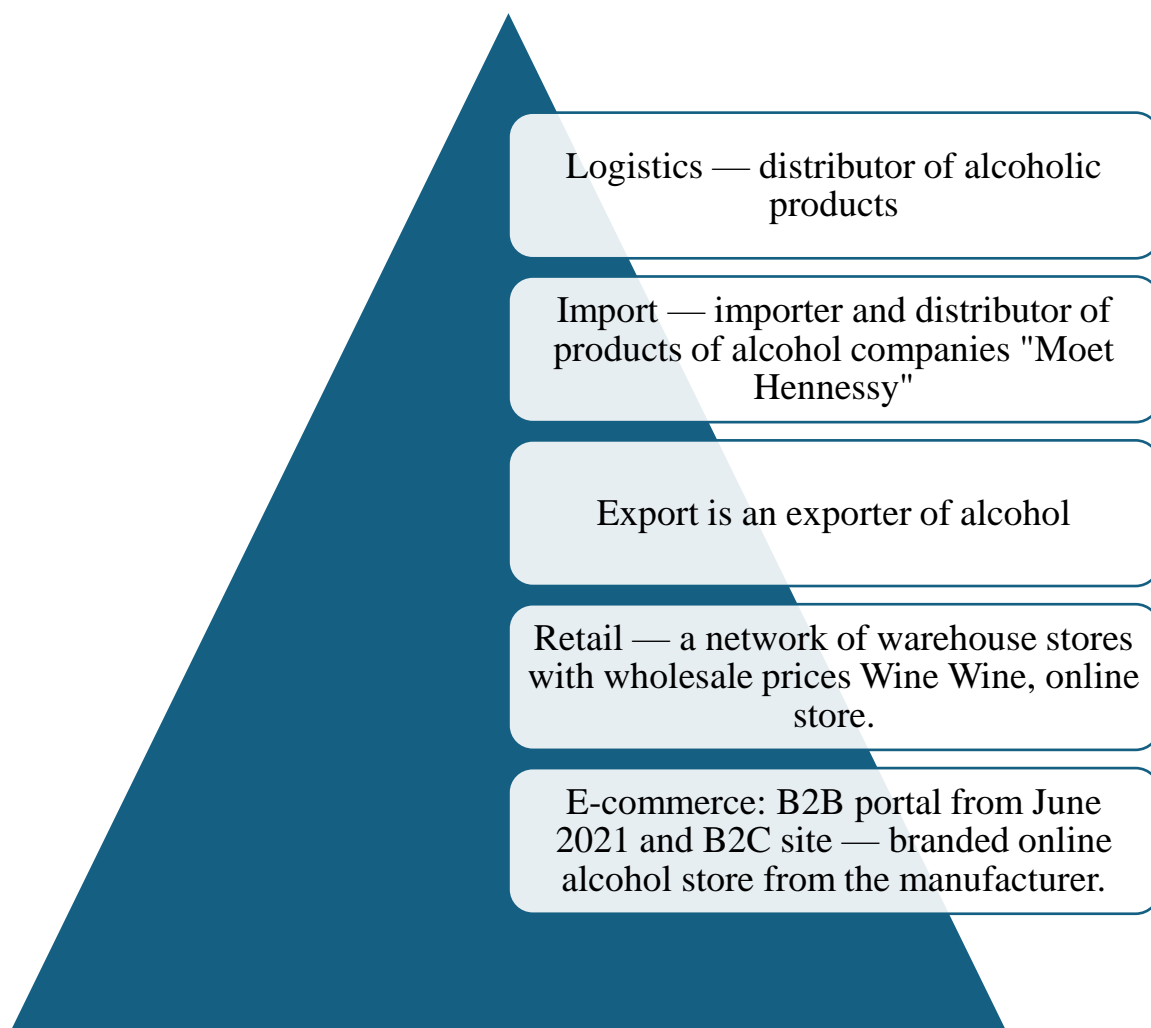


Figure 2.2 – Composition of the holding [25]

The National Vodka Company LLC is a leader in the segment of alcoholic products on the Ukrainian market. Their drinks won leading positions not only in our country, but also outside Ukraine. The plant is located in Cherkasy, and it uses only modern equipment from France and Italy, and the team includes experienced technologists with many years of experience in the field of alcohol production. Thanks to systematic and planned investments and modernization of production processes, the

range of the offered portfolio offers consumers several well-known brands in the alcohol market [53].

"Mykolaiv Cognac Plant" was launched in 2015 specifically for the production of TM KOBLEVO cognacs. This is a modern cognac enterprise that has a full production cycle – from growing grapes to bottling the finished product [2].

"Koblevo" is the leader of the Ukrainian wine market. The oldest winery was established in 1982. The capacity of the plant allows to produce more than 150 million bottles per year. The enterprise has ISO 9001: 2008 and ISO 22000: 2005 international quality certificates for alcohol production [2].

The company has its own production of alcohol products. Own brands are listed in the Table 2.2.

Table 2.2 – Analysis of products produced by the enterprise

Name of Company	Products produced by the enterprise
1	2
The National Vodka Company LLC	HLIBNY DAR КОЗАЦЬКА РАДА Перша Гільдія Воздух RADA
Mykolaiv Cognac Plant	KOBLEVO
"Koblevo"	KOBLEVO MARENGO

Organizational structure is shown on Fig. 2.3.

The company operates under Ukrainian legislation and its own charter. It should be payed attention to the company's mission and values.

Mission: “We are a leading company and a team of good people that creates and develops beloved brands around the world. The key to the success of BAYADERA GROUP is a team of professionals who always aim for the maximum result”.



Figure 2.3 – Organizational structure

Values:

1. People.

People are our #1 priority. BAYADERA GROUP for honest relations in the team, maximum assistance, mutual benefit and mentoring for the joint achievement of common goals.

2. Self-realization.

We respect the personality of each employee and strive to provide an opportunity for development and manifestation of their best qualities for professional and personal growth. The company has all the conditions for expanding the limits of one's own capabilities, realizing talents, as well as the right to make independent decisions to achieve common goals.

3. Globality.

Their products are represented on 5 continents. And we continue to build ambitious plans for business globalization and successfully implement them.

4. Decent pay.

We guarantee our employees a stable salary, comfortable working conditions and constant motivation.

5. Brands that love.

We have put a lot of effort into creating high-quality products at a fair price and are proud of the trust our partners and consumers place in our brands.

6. Business integrity and ethics.

We value the company's reputation, which is based on long-term honest relations with partners and consumers, therefore we faithfully fulfill our obligations, increase the efficiency of our partners' activities, and promote social responsibility of doing business.

7. Professionalism.

We value real experts. Our employees are real experts who continue to develop and learn at BAYADERA GROUP [22].

2.2 Analysis of production and financial indicators of the company's activity

The data for the financial analysis is taken from the company's reporting in the Clarity Project – Prozorro's procurement analytics [4]

First of all, it should be analyzed the financial results for the period 2021-2023 using data from the company's reporting. The analysis is carried out in the Table 2.3.

Table 2.3 – Analysis of financial results

Indicators	2021	2022	2023	Dynamics, %	
	Thousands of UAH	Thousands of UAH	Thousands of UAH	2023/2022	2022/2021
1	2	3	4	5	6
Net income from the sale of products (goods, works, services)	8102627	7250507	10442240	144,02	89,48
Cost of goods sold (goods, works, services)	6380189	5750508	8081490	140,54	90,13
Gross profit	1722438	1499999	2360750	157,38	87,09

Considering the results, it can be concluded that the company's financial performance is currently increasing, which may indicate an increase in customers and sales revenue. In 2022, a decrease was observed:

- Net income from the sale of products increased by 11% compared to 2021;
- reduction of Cost of goods sold by 11%;
- Gross profit decrease by 13%.

The reason is clearly the influence of the war in the country, the ban on the sale of alcohol, the decrease in the population, supply problems, energy problems.

But, in 2023, the following changes were observed:

- Net income from the sale of products decreased by 44% compared to 2022;
- increasing of Cost of goods sold by 40%;
- Gross profit increased by 57%.

A graphic representation of the analysis of financial results is shown in Fig. 2.4.

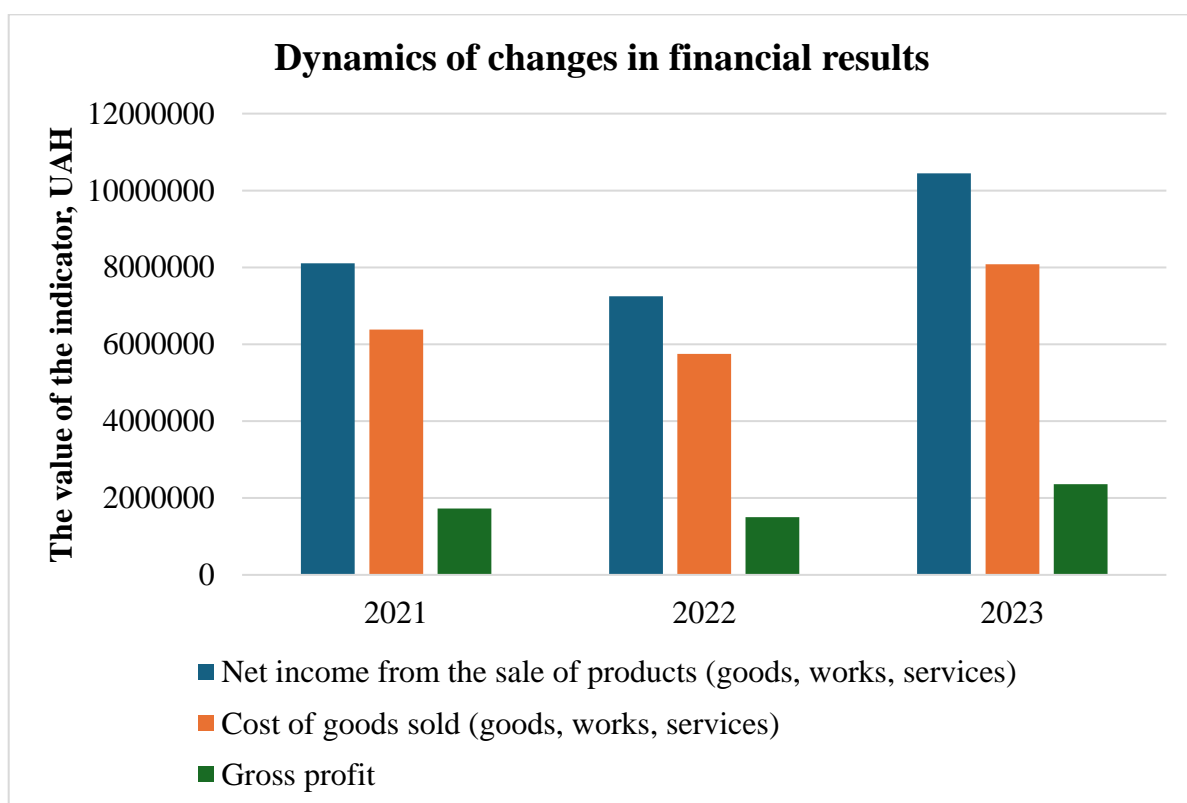


Figure 2.4 – Dynamics of changes in financial results

Costs should be analyzed as one of the components of the company's functioning (Table 2.4).

Table 2.4 – Analysis of costs

Indicators	2021	2022	2023	Dynamics, %	
	Thousands of UAH	Thousands of UAH	Thousands of UAH	2023/2022	2022/2021
1	2	3	4	5	6
Material costs	97266	85155	134944	158,47	87,55
Salary expenses	209103	207784	230904	111,13	99,37
Deductions for social events	46563	46330	49221	106,24	99,50
Amortization	14705	17668	19613	111,01	120,15

From the calculations, it can be seen that in the period 2021-2023, costs basically do not change significantly. So in 2022 the results were as follows:

- reduction of Material costs by 13%;
- reduction of Salary expenses by 1%;
- reduction of Deductions for social events by 1%;
- increase in Amortization by 20%.

In 2023 the results were as follows:

- increasing of Material costs by 58%;
- increasing of Salary expenses by 11%;
- increasing of Deductions for social events by 6%;
- increase in Amortization by 20%.

A graphic representation of the analysis of financial results is shown in Fig. 2.5.

The liquidity of business should be analyzed. Liquidity encompasses the availability of cash and the ease of converting assets into cash. Cash is the most liquid asset, followed by marketable securities, accounts receivable, cash value, and inventory. Liquidity ratios are often used to gauge the liquidity of a business, comparing liquid assets to current liabilities [18].

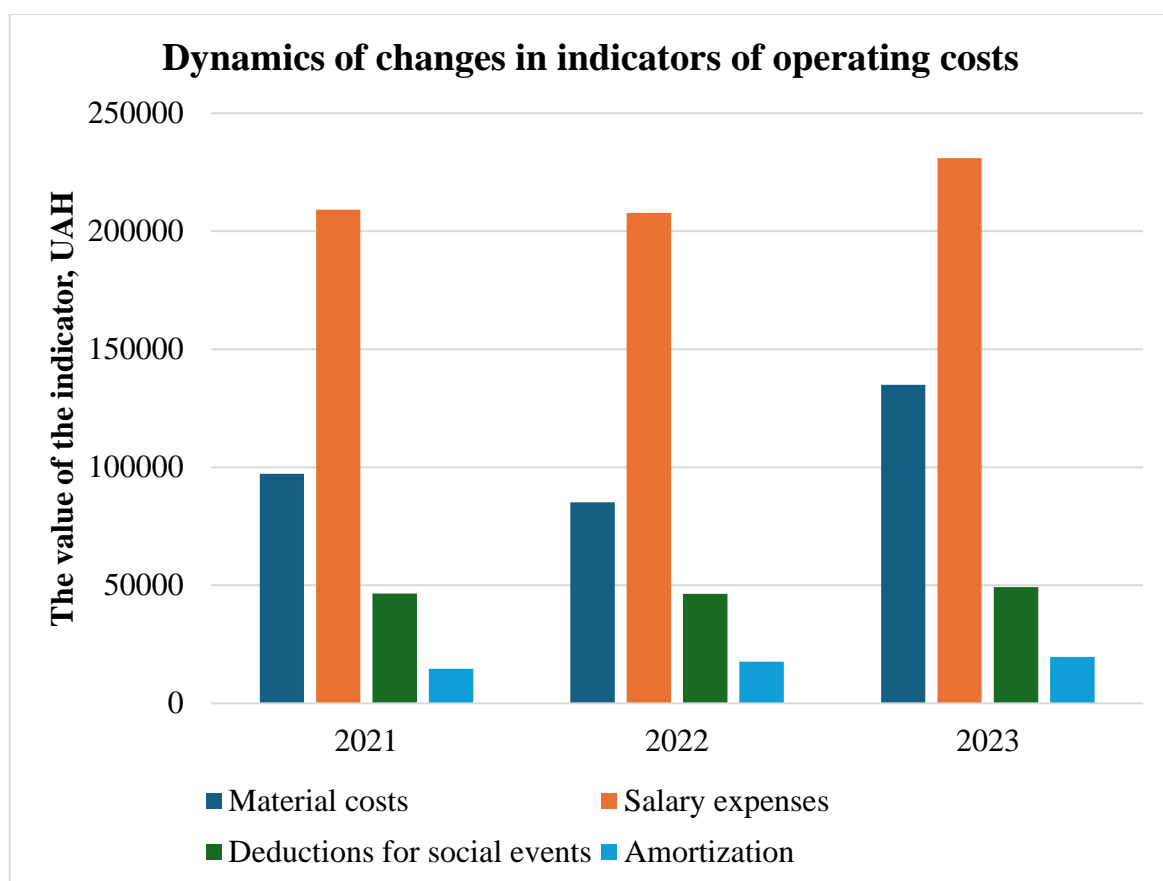


Figure 2.5 – Dynamics of changes in indicators of operating costs

Initial data for analysis of liquidity are presented in Table 2.5.

Table 2.5 – Initial data for analysis of liquidity

Indicators	2021	2022	2023
	Thousands of UAH	Thousands of UAH	Thousands of UAH
1	2	3	4
Cash and cash equivalents	8931	34281	192276
Total current assets	3476495	2623015	2990320
Total current liabilities	1117867	1156282	1093179
Receivables	2690163	1504014	1676547

Analysis of liquidity is presented in Table 2.6. A graphic representation of the analysis of financial results is shown in Fig. 2.6. It can be concluded that the company's liquidity indicators did not refer to the state of 2021. This is clearly visible in Fig. 2.6.

Table 2.6 – Analysis of liquidity

Indicators	Recommended value of coefficient	2021	2022	2023	Dynamics, %	
					2023/2022	2022/2021
1	2	3	4	5	6	7
Absolute liquidity ratio	more than 0,1	0,01	0,03	0,18	593,26	371,09
Quick ratio	more than 0,7	2,41	1,33	1,71	128,50	55,10
Working capital ratio	more than 2	3,11	2,27	2,74	120,58	72,94

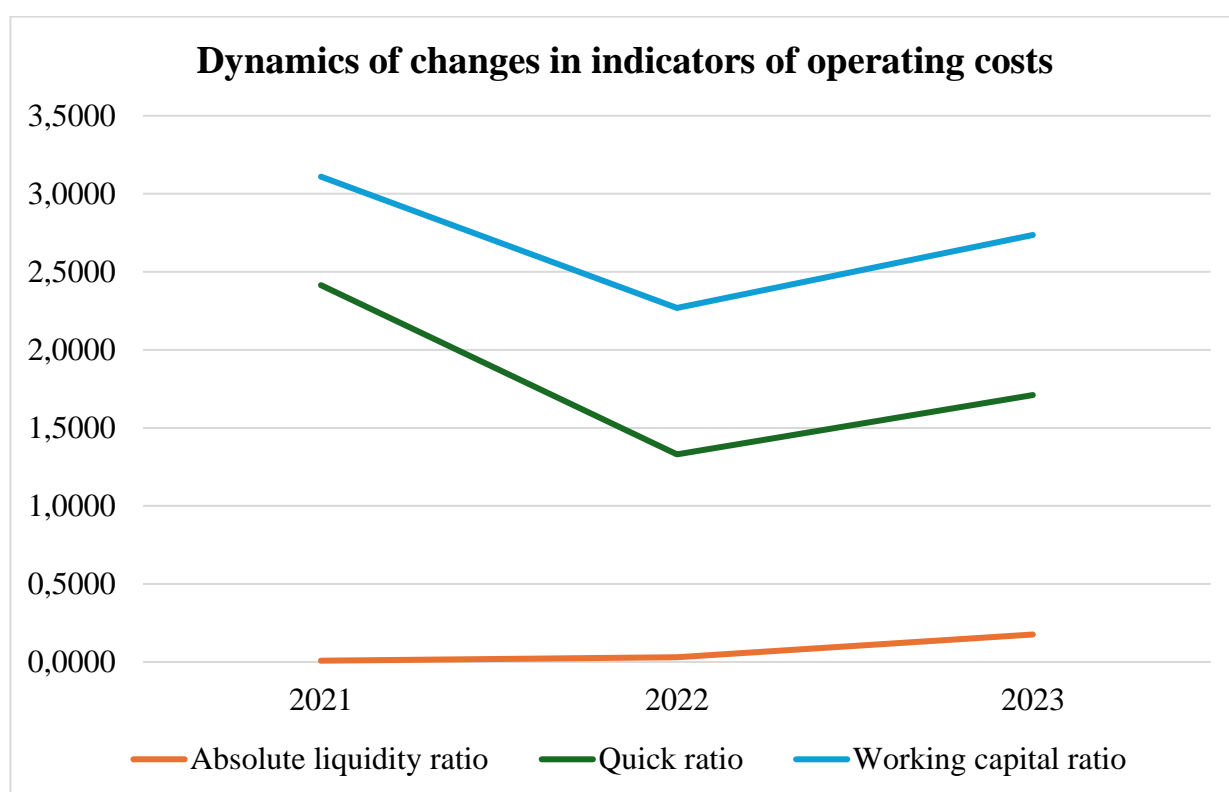


Figure 2.6 – Dynamics of changes in indicators of operating costs

So it is possible to draw conclusions regarding the results of the analysis of the company's liquidity in 2023 year:

- absolute liquidity ratio increased 5 times. This means that the company has increased its opportunity to pay off debts using only cash and cash equivalents;
- quick ratio increased by 28%. This means that the ability if company to pay short-term liabilities increased;

– working capital ratio increased by 20%. This means that operational efficiency of company increased.

The next stage is the analysis of financial stability (Table 2.7). The analysis includes debt-to-equity comparisons (Table 2.8).

Table 2.7 – Initial data for analysis of financial stability

Indicators	2021	2022	2023
	Thousands of UAH	Thousands of UAH	Thousands of UAH
1	2	3	4
Total equity	192378	163818	225494
Total assets	3560372	2715309	3089223
Total liabilities	3367994	2551491	2749728
Total current assets	3476495	2623015	2990320
Total current liabilities	1117867	1156282	1093179

Table 2.8 – Analysis of financial stability of company

Indicators	2021	2022	2023	Recommended value	Dynamics, %	
					2023/2022	2022/2021
1	2	3	4	5	6	7
Equity ratio	0,05	0,06	0,07	The critical limit is up to 0.5	120,99	111,66
Debt to equity ratio	17,51	15,58	12,19	Debt to equity ratio below 1.0 would be seen as relatively safe, whereas ratios of 2.0 or higher would be considered risky	78,29	88,96
Debt ratio	0,95	0,94	0,89	The standard value of the indicator is in the range of 0,5-0,7	94,73	99,33
Working Capital to Current Assets Ratio	0,68	0,56	0,63	Normative for the working capital to current assets ratio is the value of 0.1 and higher	113,46	82,42

It can be concluded that the company is not fully financially stable. It can be seen from the trend of payment of long-term obligations using own capital. From the

report of the company, it is clear that the weak point is the lack of own capital. This puts the normal and safe performance of the company's functions at risk.

So it is possible to draw conclusions regarding the results of the analysis of the financial stability:

- equity ratio value is within the recommended range and is stable between 2021 and 2023;

- debt to equity ratio – comparison of the company's liabilities with its shareholder equity. This indicator shows the instability of the company in the ability to repay debts, which is changing for the better, but at a low speed;

- debt ratio – values are outside the recommended range, but not critical. This means that in 2023 the value of debt-financed assets increased;

- working Capital to Current Assets Ratio – the value is below the recommended value, but increases in the period 2021-2023. The company has an unstable ability to finance current assets with its working capital.

A graphic representation of the financial stability is shown in Fig. 2.7.

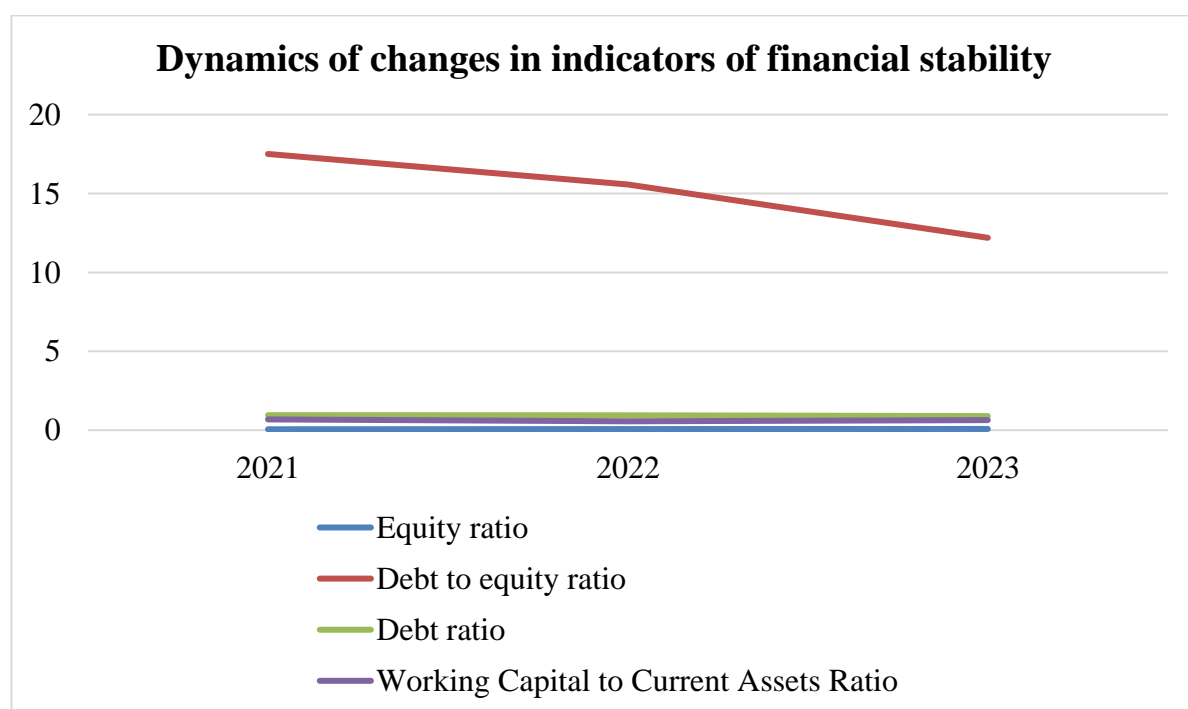


Figure 2.7 – Dynamics of changes in indicators of financial stability

The next step is the analysis of business activity, which shows the possibility of effectively using assets (Table 2.9 and 2.10).

Table 2.9 – Initial data for business activity

Indicators	2021	2022	2023
	Thousands of UAH	Thousands of UAH	Thousands of UAH
1	2	3	4
Revenue	8102627	7250507	10442240
Average Accounts Receivable	2690163	1504014	1676547
Total assets	3560372	2715309	3089223

Table 2.10 – Analysis of business activity (Thousands of UAH)

Indicator	2021	2022	2023	Recommended value	Dynamics, %	
					2023/2022	2022/2021
1	2	3	4	5	6	7
Receivable Turnover Ratio	3,01	4,82	6,23	It indicates the average number of times in a year a company collects its open accounts. A high ratio implies efficient credit and collection process.	129,20	160,06
Days Sales Outstanding	119,52	74,68	57,80	It measures the average number of days it takes a company to collect a receivable. The shorter the DSO, the better. Take note that some use 365 days instead of 360.	77,40	62,48
Total asset Turnover	2,28	2,67	3,38	A good asset turnover ratio is when it is above 1, since it implies that the company is fully utilizing its owned resources to generate sales revenue.	126,59	117,33

A graphic representation of the analysis of business activity is shown in Fig. 2.8.

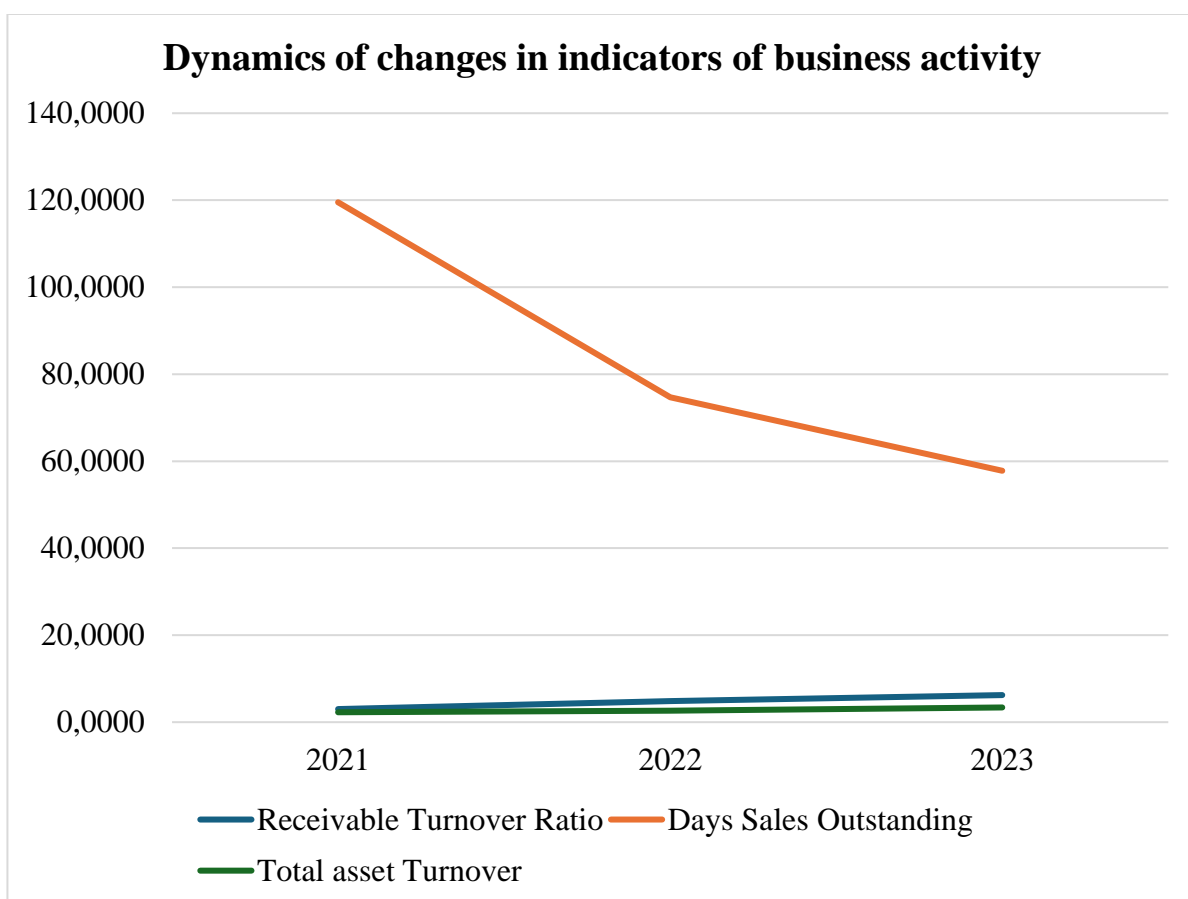


Figure 2.8 – Dynamics of changes in indicators of business activity

Summary «diagnostics by signals» is presented in Table 2.11.

Table 2.11 – Summary table «diagnostics by signals»

Indicators	2021	2022	2023
1	2	3	4
Financial stability	Relatively stable	Relatively stable	Relatively stable
Liquidity	Relatively stable	Relatively stable	Relatively stable
Business activity	Stable	Stable	Stable

Based on the calculations, it can be concluded that the efficiency of business activities is improving. Days Sales Outstanding shows that the average number of days it takes a company to collect a receivable decreases.

Total asset turnover shows the ability to effectively use the company's assets to generate profit.

2.3 Analysis of the distribution network of alcoholic products

"Bayadera Logistics" – the largest distributor of alcohol products in Ukraine – has been successfully operating on the market since 1991. The company's staff includes more than 5,000 people. The largest distribution network makes direct deliveries to 35,000 retail outlets in the country. 30 branches in all regions of Ukraine ensure the representation of the holding's brands in the absolute majority of retail outlets and delivery of products within 7 days. The brand portfolio includes 20 own and more than 80 associated brands [22].

The geography of the distribution network is depicted on Fig. 2.9.



Figure 2.9 – The geography of the distribution network [10]

Each branch of the company works to fulfill its own and common goals for the company. In this work, we can consider an example of the organization of the work of the Kyiv branch, which includes distribution in the city of Kyiv and the Kyiv region. The logistics department of this branch has 60 full-time employees.

The branch works with 2 directions – Full truck and retail. Full truck is efficient for the delivery of goods to large retail chains and takes place according to the delivery schedule. Retail is delivery to various retail outlets by one car. The branch uses its own and rented vehicles.

Distribution of own brands. "Bayadera Group" has the strongest portfolio of its own and involved brands, which is formed taking into account consumer preferences and regional characteristics in all alcoholic beverage categories. The model implies global development and building a transcontinental company with the most effective representation in each region [22].

Distribution of partner brands. "Bayadera Logistics Elite" company specializes in the distribution and distribution of elite alcoholic beverages. A wide range of products in all categories of alcoholic beverages, significant investments in advertising and promotion of products, a clear focus on the experience of suppliers – the main competitive advantages of "Bayadera Logistics Elite" that distinguish it from its competitors. In addition, "Bayadera Group" is an exclusive partner and representative in Ukraine of world alcohol companies, such as Diageo, Remy Cointreau, Moët Hennessy, Mast – Jägermeister, Proximo Spirits.

Bayadera Group's portfolio of brands includes successful global brands and leading national brands, as well as a wide range of involved world-renowned brands.

The company is responsible for the originality and quality of products. It is mandatory to have appropriate labeling of products [22].

1. Excise stamp (Fig. 2.10).

A special mark used to label alcoholic beverages, and the presence of which confirms the payment of excise duty, the legality of import and the right to sell these products on the territory of Ukraine.

Each of our bottles has a label stating that Bayadera Logistics LLC is the official distributor of this product. And on products of the elite segment, it is indicated – LLC "Ukrainian Import House".



Figure 2.10 – Excise stamp [22]

2. Counter label (Fig. 2.11).

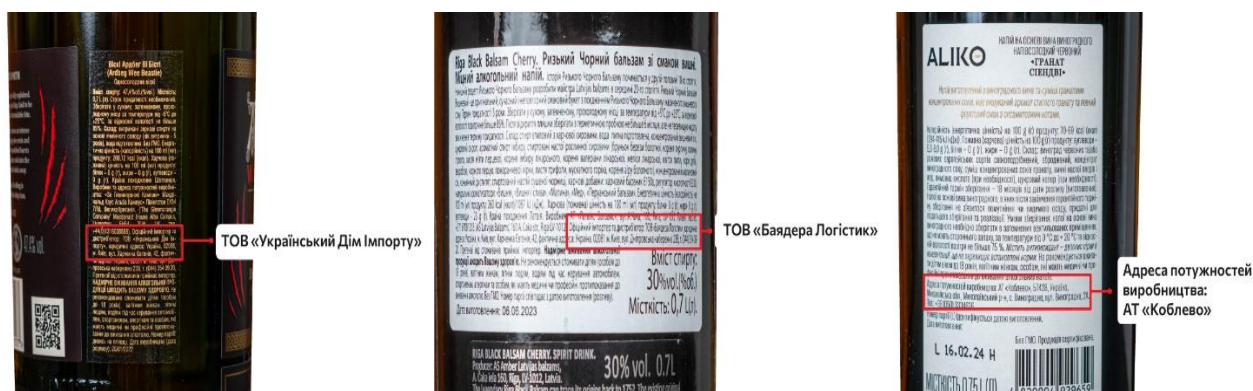


Figure 2.11 – Counter label [22]

Also, according to the legislation of our country, the following must be indicated on the label:

- drink name and manufacturer;
- composition of alcohol;
- production date and batch number.

It is indicated **EXCLUSIVELY** in the state language.

3. Batch number (LOT code) (Fig. 2.12).

Each bottle must be marked with the LOT code — the batch number of the product. In simple words, this code means the date of production of alcohol and helps to determine its batch.



Figure 2.12 – Batch number (LOT code) [22]

4. Factory address (Fig. 2.13).



Figure 2.13 – Factory address [22]

On the alcohol of our own production, it is noted that this product was manufactured at our factory:

- National Vodka Company;
- Mykolaiv Cognac Plant;
- Winery "Koblevo".

5. Certificate of product conformity (Fig. 2.14).



Figure 2.14 – Certificate of product conformity

Each batch of goods delivered to Ukraine has a corresponding certificate confirming originality and a mandatory appendix to it.

Given the comprehensive analysis, it is possible to conduct a SWOT analysis and identify weaknesses/strengths, opportunities/threats (Table 2.12). Analysis of financial indicators is a convenient and visual way to determine the advantages and disadvantages of the company's operation.

Table 2.12 – SWOT analysis of company

	Positive	Negative
	Strength	Weakness
Initial	<ol style="list-style-type: none"> 1. Leading position in Ukrainian market 2. Own production. 3. Wide range of products 4. Various distribution channels. 5. Product quality. 6. Variety of pricing policies 	<ol style="list-style-type: none"> 1. Insufficient use of the latest technologies in the distribution process. 2. Lagging behind modern trends in supply logistics. 3. Geography of production, that is susceptible to attack
	Opportunity	Threats
External	<ol style="list-style-type: none"> 1. Expansion of sales markets at the expense of export 2. Integration of marketing and logistics. 3. Implementation of new technologies and practices in the distribution system. 	<ol style="list-style-type: none"> 1. Risks associated with war. 2. Legislative norms. 3. Competition. 4. Decreasing population.

TOWS analysis of company is presented in Table 2.13.

Table 2.13 – TOWS analysis of company

TOWS		Strength	Weakness
			<ol style="list-style-type: none"> 1. Leading position in Ukrainian market 2. Own production. 3. Wide range. 4. Various distribution channels. 5. Product quality. 6. Variety of pricing policies
Opportunity	<ol style="list-style-type: none"> 1. Expansion of sales markets at the expense of export 2. Integration of marketing and logistics. 3. Implementation of new technologies and practices in the distribution system. 	<p>S-O.</p> <ol style="list-style-type: none"> 1. Increase customer loyalty 2. Build tight connections with partners 3. Use innovative solutions, available for company, for supply chain changes 	<p>W-O.</p> <ol style="list-style-type: none"> 1. Develop new, technological connection with partners.
Threats	<ol style="list-style-type: none"> 1. Risks associated with war. 2. Legislative norms. 3. Competition. 4. Decreasing population. 	<p>S-T.</p> <ol style="list-style-type: none"> 1. Loyalty of clients should be increased and encourage increasing of sales. 2. Highly qualified employees 	<p>W-T.</p> <ol style="list-style-type: none"> 1. Rebuild strategic goals in accordance to modern conditions 2. Attract new investors

The main advantage is a wide range of products and own brands manufactured at factories that are part of the Bayadera Group. This increases product quality, reduces risks associated with cooperation, and adds flexibility to solutions. So the company has the opportunity to expand the geography of sales, to increase the audience quantitatively and qualitatively.

The biggest drawback is the complexity of business processes, which makes rapid changes impossible and reduces the process of introducing new network management tools. This holds back the development process and requires the use of special digitization technologies, which will ease bureaucratic processes and communication problems.

The results of the SWOT analysis can be combined into a TOWS analysis and consider possible options for the development of the company. At this stage, it is possible to form a strategic plan, taking into account the specifics of the company, existing threats and opportunities, and prioritize strategies.

In order to develop project proposals for improving the activities of the Bayadera Logistics company, it is necessary to analyze the stages of distribution of the company's products.

Stages of alcohol distribution of the Bayadera Logistics company:

Stage 1. Production. The production capacity consists of 3 own full-cycle enterprises (National Vodka Company, Mykolaiv Cognac Plant, Koblevo Wine Plant).

The location of factories is based on natural conditions that are favorable for growing the necessary plants, optimal distance from urban centers (Fig. 2.15, 2.16 and 2.17). Warehouse logistics was formed taking into account the location of the production and the distance to the stores selling the goods.

Stage 2. Warehousing. The company's fleet consists of 140 trucks, and the total area of warehouses exceeds 60,000 m². On the territory of the warehouses, unloading/loading, reception of goods, processing of goods, storage, packaging take place.

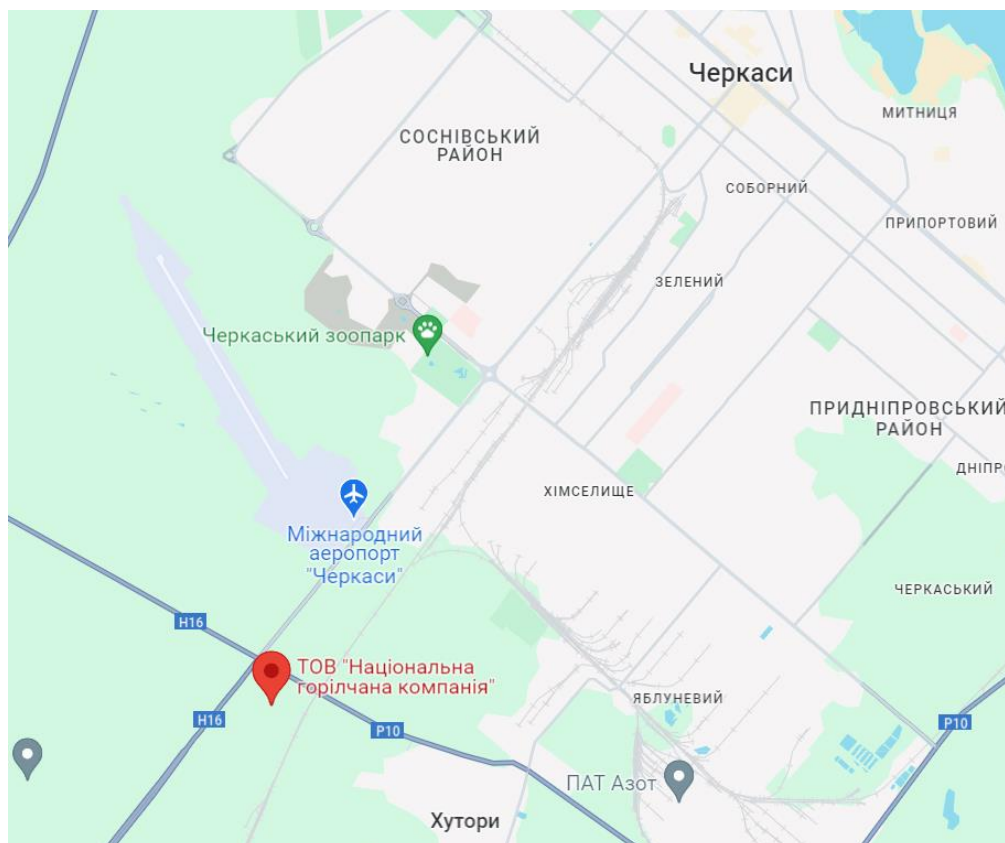


Figure 2.15 – National Vodka Company [11]



Figure 2.16 – Mykolaiv Cognac Plant [10]

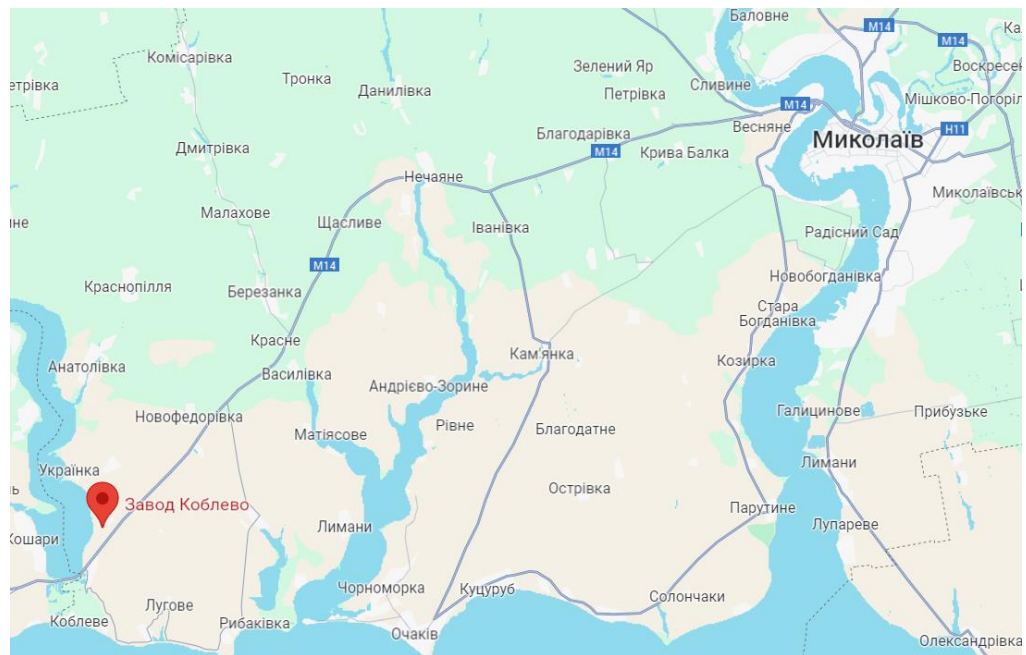


Figure 2.17 – Koblevo Winery [9]

Warehouse operations are managed thanks to WMS software. is a program that enables quick and effective planning of tasks for warehouse workers, monitoring the timeliness of execution, planning the placement of the animal, receiving information about the location of the goods in real time.

Sequence of warehouse processes:

1. Arrival. At this stage, goods are received and prepared for longer placement in the warehouse. The sequence of stages: factory invoice from the manufacturer – passport of the pallet – the task of placing the goods on the storage area.
2. Shipment and selection of goods for the flight.
3. Loading of goods to be transported to the client.
4. Moving around the warehouse.
5. Stocktaking carried out on a planned and periodic basis.

Stage 3. Transportation. Route planning is carried out every day after receiving the collection and processing of applications by the sales department. The logistician collects data on the location of sales points, the weight of containers and goods, the availability of free own transport or the need to find hired transport.

Planning is carried out in special software – TMS that is a system for automatic calculation of indicators and construction of the route of innovators based on entered

data and previous deliveries. The following information is required to be filled in: geozones of the region, data on delivery volumes, data on the car, drivers and forwarders, the number of points and geocoordinates.

Each flight is accompanied by a corresponding document flow. The following package of documents is formulated:

1. Sales Invoice. This document confirms the transfer of commodity values. It includes information about the consignor, the consignee, the name of the product and the price of the product, the place of delivery and the date.

2. Goods transport invoice in four copies (1 copy – to the consignor; 2 copy – to the consignee; 3.4 copies – to the carrier). A special feature of the goods transport invoice for alcoholic products is the indication of the consignment note number for the movement of ethyl alcohol and alcoholic beverages.

3. Control sheet for transportation for the driver confirming the driver's permission to transport products. It is mandatory for transportation and distribution.

4. Certificate of quality. A document that determines the proper quality of products to be distributed.

The organization of logistics operations is shown in Fig. 2.18.

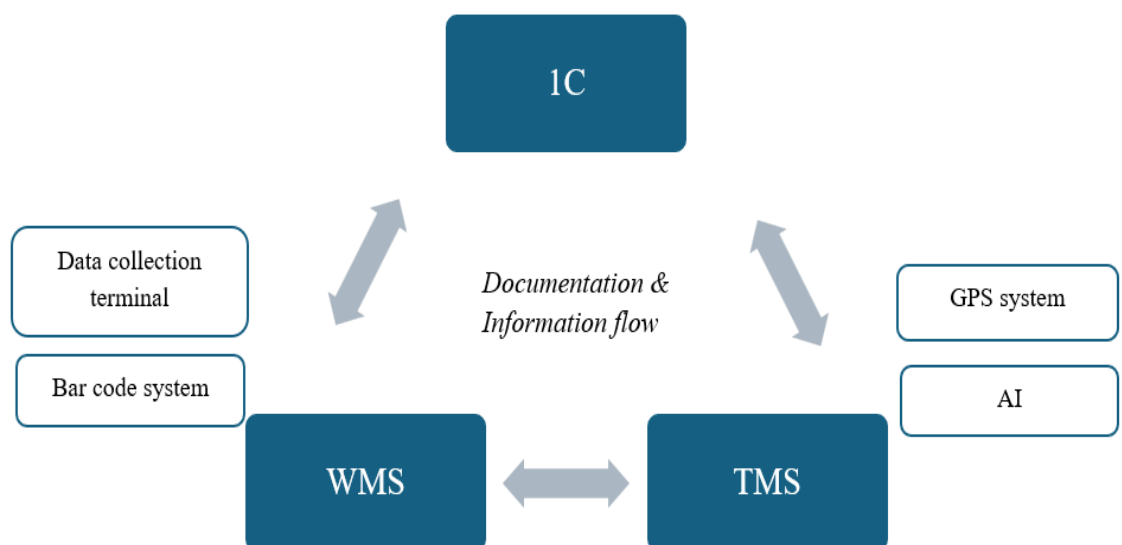


Figure 2.18 – The organization of logistics operations

Stage 3. B2B segment. It includes cooperation with legal entities without working directly with the end consumer. This is mainly work with large retail chains. The direction of B2B – HoReCa – distribution of products to public catering establishments and hotel business should be considered separately.

Wholesale. It consists in the purchase of a large volume of goods for the purpose of further retail trade. The company purchases partner brands at wholesale prices and organizes distribution on the territory of Ukraine.

Stage 4. B2C segment. It includes the sale of goods directly to the consumer. The sale is possible in a physical and online store.

Retail. It consists in the sale of goods to the final consumer. The company's distribution system includes branded store, retail outlets, etc.

E-commerce – sale of products in an online store. In this case, the distribution network does not include the delivery of goods, this task is performed by the postal service.

An example of a retail sales channel is a sale in a branded store located at address: Khmelnytskyi, 41a Romana Shukhevich Street (Kurchatov). The assortment includes more than 1,000 items from the most famous brands (Fig. 2.19).



Figure 2.19 – A branded store [22]

The organization of distribution network can be summarized in the Fig. 2.20.

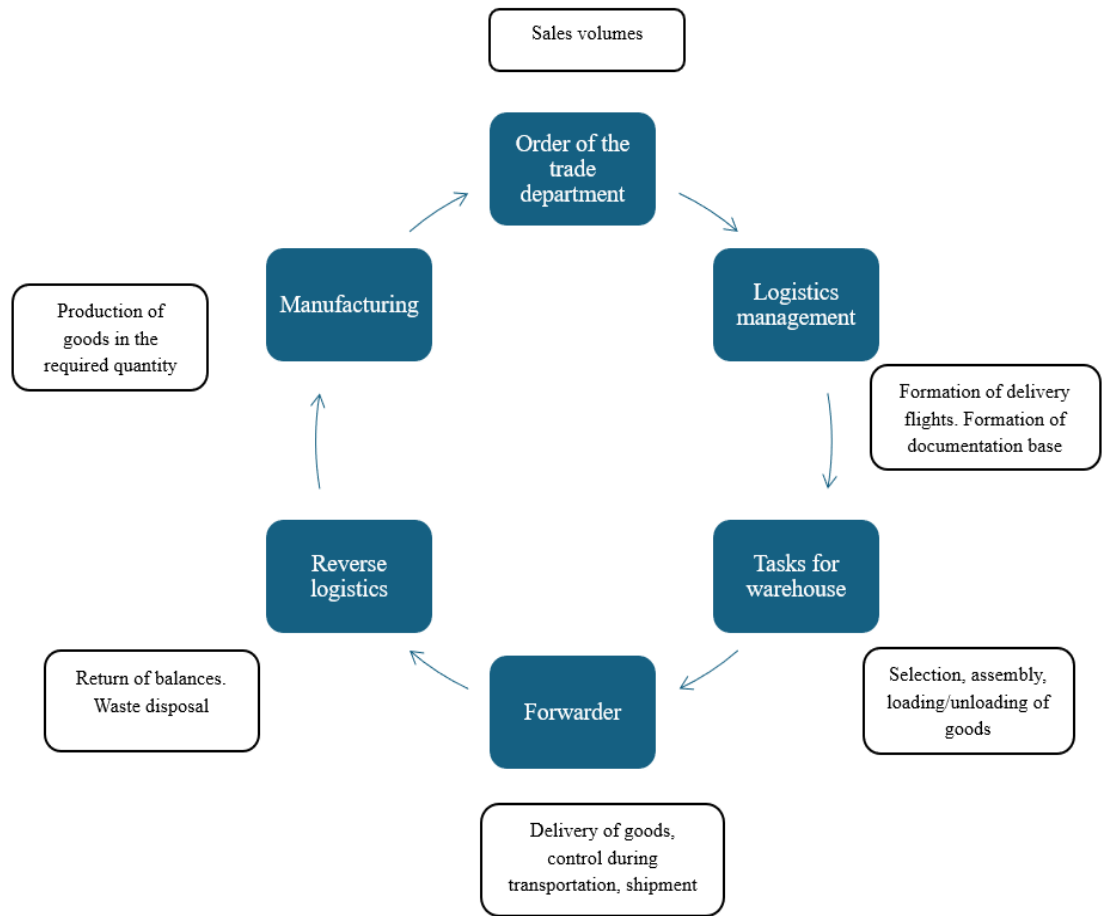


Figure 2.20 – The organization of distribution network

In conclusion, it can be noted that the distribution process is an interconnected chain of functions. Each department of the company performs the necessary functions for the entire life cycle of products from production to sale. Only joint work and a high level of communication leads to quality management.

Chapter 2 summary

In this chapter an analysis of the “Bayadera Group” and “Bayadera Logistic” company’s activities was made and the main areas of activity were analyzed.

The first section describes the general characteristics of the company's activities, which includes basic information about the company, namely:

- composition of the company;
- the main activity;
- description of production facilities;
- distribution portfolio;
- organizational structure;
- the company's mission and values.

In the second section, the analysis of production and financial indicators of the company's activity is carried out. The following information is indicated: statistics for the last 3 years (2021-2023), financial indicators, analysis of the company's performance (Financial stability, Liquidity, Business activity).

According to the results of the analysis, it was found that the business activity of the company can be defined as stable; financial stability and liquidity – relatively stable. The problem area is the payment of long-term obligations using own capital, ability to repay debts, debt-financed assets volume, ability to finance current assets with its working capital.

The analysis of the distribution network of alcoholic products is carried out in the third chapter. The main processes are described, their sequence is depicted schematically, logistics and production facilities, information systems used to organize business processes are described.

Based on the results of the work, strengths and weaknesses were determined. During the analysis, possible options for improving indicators were indicated. It can be recommended to reduce the costs and efficiency of business processes due to the implementation of logistics and distribution trends: digitalization, artificial intelligence, improving the level of cargo security, organizing a high-quality communication system in the team.

CHAPTER 3

DEVELOPMENT OF PROPOSALS FOR IMPROVING THE DISTRIBUTION NETWORK MANAGEMENT OF ALCOHOL PRODUCTS

3.1 Proposals for improving the preservation of cargo in the distribution network of the company "Bayadera Logistic"

Based on the detailed analysis of distribution network of of «Bayadera Logistic» company the problems that the company has today and that need to be solved were determined (Fig. 3.1).

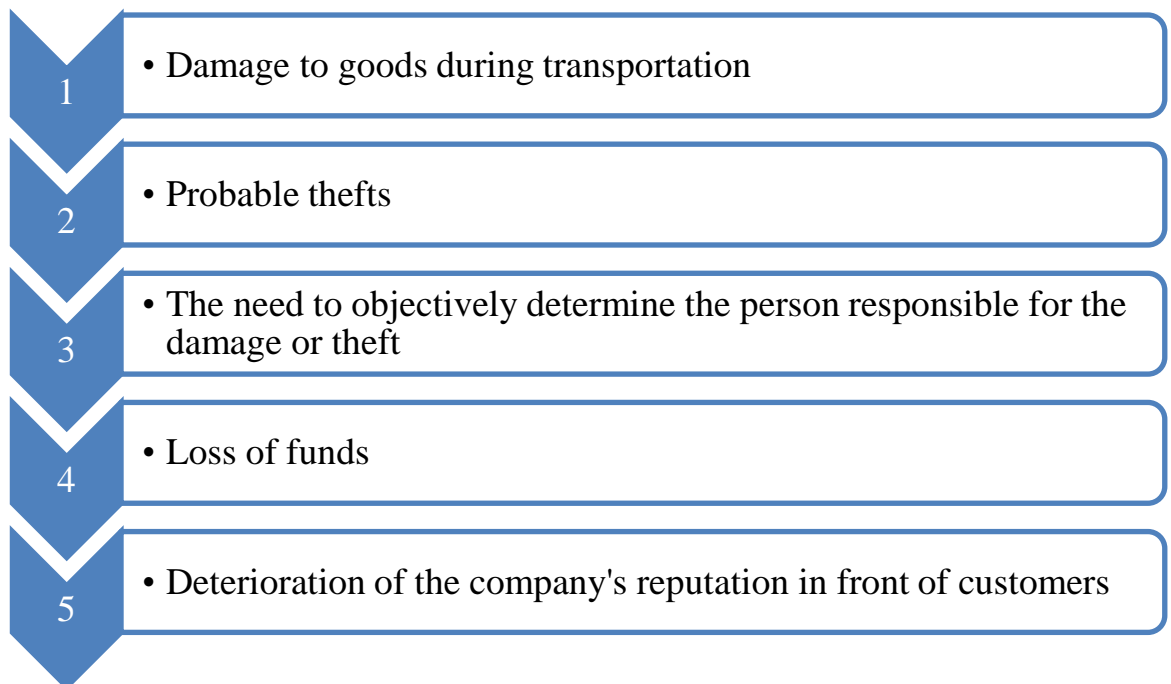


Figure 3.1 – Problems that cause the need to implement changes

A possible direction for the implementation of improvements is control of cargo security during the performance of logistics functions.

The use of video surveillance in the baggage department to control the goods during transportation. The video camera can transmit high-quality video in real time,

an additional option can be a camera with a microphone. The camera can be connected to a smartphone or other device. Video surveillance can be qualitatively combined with a door opening sensor.

It is possible to consider 2 variants of the video surveillance system:

- for own fleet;
- for a rented car.

The difference between the options lies in costs and functional modality. For own fleet, it may be recommended to purchase more expensive and high-quality cameras. For a rented car, it will be appropriate to use less expensive cameras that are quickly installed and removed after the trip.

1. An option for a video surveillance system with high-quality for own fleet:

1.1. Surveillance camera: IP Camera Hikvision DS-2CD2525FWD-IWS (Fig. 3.2).



Figure 3.2 – IP Camera Hikvision DS-2CD2525FWD-IWS [36]

1.2. Memory card Western Digital Memory MICRO SDXC 256GB UHS-I WDD256G1P0C WDC (Fig. 3.3).

1.3. 4G Wi-Fi MIMO router with double battery World Vision 4G CONNECT MICRO 2+ (Fig. 3.4).

For own vehicles, a high-quality camera is offered, which can be installed in the cargo compartment of the car. The video surveillance system includes a camera, a memory card and a modem.



Figure 3.3 – Memory card Western Digital Memory MICRO SDXC 256GB
[38]



Figure 3.4 – 4G Wi-Fi MIMO router with double battery [26]

This option is the most expensive of the three proposed in this paper. Such a system can be installed on trucks that carry out transportation between regions and cargo minibuses that transport goods within the boundaries of the same area.

The advantage of this system is the ability to play videos online in an application on a phone or computer, push notifications are configured (for example about opening of the door).

The costs of implementing a video surveillance system for own car are indicated in the Table 3.1.

Table 3.1 – Costs of implementing a video surveillance system for own car

Item	Costs
1	2
IP Camera Hikvision DS-2CD2525FWD-IWS	7000 UAH
Memory card Western Digital Memory MICRO SDXC 256GB UHS-I WDD256G1P0C WDC	2900 UAH
4G Wi-Fi MIMO router with double battery World Vision 4G CONNECT MICRO 2+	1900 UAH
Tariff with unlimited Internet Kyivstar	300 UAH
Installation	3800 UAH
Total	15900 UAH

2. A variant of the video surveillance system with middle-quality for own car and for a hired one.

The second option is a video surveillance system at a lower price, but it is effective enough for own fleet and rented cars. Costs can be reduced by using a less expensive camera and modem.

2.1. IP video surveillance camera Hikvision DS-2CD2421G0-IW(W) (Fig. 3.5).



Figure 3.5 – IP video surveillance camera Hikvision [31]

2.2. Memory card Western Digital Memory MICRO SDXC 256GB UHS-I WDD256G1P0C WDC (Fig. 3.6).



Figure 3.6 – Memory card Western Digital Memory MICRO SDXC 256GB
[38]

2.3. Xiaomi F490 4G LTE 4G modem (Fig. 3.7).



Figure 3.7 – Xiaomi F490 4G LTE 4G modem [46]

The costs of implementing a video surveillance system for own and hired car are indicated in the Table 3.2.

The video surveillance system can be controlled and configured in the application or on the HIKVISION website, which is free. This is convenient for technicians and managers, because access to information from the cameras is available online.

Table 3.2 – Costs of implementing a video surveillance system for own and hired car

Item	Costs
1	2
IP video surveillance camera Hikvision DS-2CD2421G0-IW(W)	3500 UAH
Memory card Western Digital Memory MICRO SDXC 256GB UHS-I WDD256G1P0C WDC	2900 UAH
Xiaomi F490 4G LTE 4G modem	2000 UAH
Tariff with unlimited Internet Kyivstar	300 UAH
Installation	2500 UAH
Total	11200 UAH

3. Video surveillance system option for rented cars.

3.1. Car recorder Hikvision AE-DC2015-B1(O-STD) (Fig. 3.8).



Figure 3.8 – Car recorder Hikvision AE-DC2015-B1(O-STD) [27]

3.2. Memory card Western Digital Memory Micro SDXC QD101 128GB UHS-I WDD128G1P0C WDC (Fig. 3.9).

For a rented car, it is possible to install the camera before the start of the route and change it at the end. A video surveillance system consisting of a video recorder and a flash drive may be recommended. Video viewing is possible after connecting a flash drive to the device. The advantage is the GPS system and motion sensor.



Figure 3.9 – Memory card Western Digital Memory Micro SDXC QD101 [39]

The costs of implementing a video surveillance system for option for rented cars are indicated in the Table 3.3.

Table 3.3 – Costs of implementing a video surveillance system for option for rented cars

Item	Costs
1	2
Car recorder Hikvision AE-DC2015-B1(O-STD)	2700 UAH
Memory card Western Digital Memory Micro SDXC QD101 128GB UHS-I WDD128G1P0C WDC	1400 UAH
Tariff with unlimited Internet Kyivstar	300 UAH
Installation	2500 UAH
Total	6900 UAH

The economic effect of this project proposal will be to reduce the number of stolen products.

Formula for economic effect:

$$\text{Economic effect} = \text{Savings} - \text{Total expenses} \quad (3.1)$$

As the analysis showed, the approximate amount for which the company's products are stolen every month during distribution is UAH 800,000.

If we make an assumption that thanks to our proposal, thefts will decrease at least by 0%, then we can calculate the economic effect that the company "Bayadera Logistic" will receive in a year (Table 3.4, Table 3.5).

Table 3.4 – The economic effect of using video surveillance (high-quality camera) in the luggage compartment to control cargo during transportation

Indicator	Value
1	2
Total expenses for the purchase of equipment, UAH	195000
Expenses for a mobile operator per year, UAH	6000
Total expenses for the year, UAH	267000
Existing losses of the company due to theft for the year, UAH	600000
Possible savings per year, UAH	510000
Economic effect for the year, UAH	243000

Table 3.5 – The economic effect of using video surveillance (middle-quality camera) in the luggage compartment to control cargo during transportation

Indicator	Value
1	2
Total expenses for the purchase of equipment, UAH	162100
Expenses for a mobile operator per year, UAH	6000
Total expenses for the year, UAH	234100
Existing losses of the company due to theft for the year, UAH	600000
Possible savings per year, UAH	450000
Economic effect for the year, UAH	215900

So, we see that this project proposal is economically beneficial for the company "Bayadera Logistic". A more cost-effective option is to install a high-quality camera, because it is more efficient and has a higher percentage of theft reduction. The economic effect is UAH 243000.

Another method of improving cargo security is to improve packaging. Qualitatively selected packaging reduces the risks of mechanical damage to products. Mechanical damage includes shaking, friction, shocks, and impacts.

What does the manager need to analyze in order to identify a product whose packaging is ineffective:

- type of product that is beaten;
- the frequency of product damage;
- identify or eliminate the possibility of human factors.

It is possible to identify a potential weak spot – this is the packaging of certain product categories with heat-shrinkable film (Fig. 3.10). The advantage of such packaging is undoubtedly a cheaper price compared to a box. However, the probability of product breakage increases significantly. So it is possible to offer to seal this packaging or replace it with a box.



Figure 3.10 – Packaging of product with heat-shrinkable film [54]

In the case of the company "BAYADERA LOGISTIC", the main packaging takes place at the production site, repackaging is not appropriate at the branch warehouse. However, the option of additional sealing should be considered.

The product for which it may be suggested to change or tighten the packaging – vodka, which belongs to a less expensive product, but the existing packaging carries the risk of damage during loading/unloading work, transportation.

In this work, 2 options for optimizing packaging will be considered.

1. Sealing of the heat-shrinkable film using an air-bubble film (Fig. 3.11). Such a film has shock-absorbing qualities and additionally protects against contamination. This option is much cheaper than changing the packaging to a box. In addition, such sealing can be carried out directly at the branch.



Figure 3.11 –Air-bubble film [48]

Expenses on air-bubble film are represented in Table 3.6.

Table 3.6 – Expenses on air-bubble film

Indicators	Value
1	2
The price of heat-shrinkable polyethylene film for packaging (700m)	2000 UAH
The cost of 1 meter	2,9 UAH
Costs for packing 12 bottles	4,29
The cost of 1 bottle	0,36 UAH

2. Replacement packaging for boxes with separators (Fig. 3.12). This packaging ensures a high level of product safety, minimizes the risk of beating. Replacement

packaging must be carried out at the place of production, it is more expensive than sealing and takes time. However, such packaging is practical and can be used several times.



Figure 3.12 – Box with separators [40]

Expenses on boxes are represented in Table 3.7.

Table 3.7 – Expenses on boxes with separators

Indicators	Value
1	2
The average cost of 1 bottle of alcohol that breaks	200 UAH
The price of a box with dividers	20 UAH
Number of bottles in a box	12 pcs
The cost of 1 bottle backed in box	1,67 UAH

The economic effect of this project proposal will be to reduce the number of broken products.

As the analysis showed, the approximate amount by which the company's products are developed every month during distribution is UAH 650,000.

Formula for economic effect is the same (see 3.1).

If we make an assumption that thanks to our proposal, the product shortage will decrease at least 2 times, then we can calculate the economic effect that the company "Bayadera Logistic" will receive in a year (Table 3.7).

Table 3.7 – Economic effect of using new packaging

Indicator	Value
1	2
Total costs for the purchase of air-bubble film per year, UAH	75000
Total costs for the purchase of boxes with dividers per year, UAH	262500
The existing losses of the company due to product breakage in transit per year, UAH	650000
Possible savings per year, UAH (air-bubble film)	325000
Possible savings per year, UAH (boxes with dividers)	637000
Economic effect of the use of air-bubble film per year, UAH	250000
Economic effect of using boxes with jumpers per year, UAH	374500

So, we can see that using a box with dividers is more economically beneficial for Bayadera Logistic. And this will significantly increase the preservation of products in the distribution network. Since the economic effect is UAH 374,500, due to the fact that the probability that the goods will arrive undamaged in such packaging can be considered 98%.

The overall economic effect of the introduction of changes in packaging and the installation of a video surveillance system is determined (Table 3.8).

Table 3.8 – The overall economic effect of the introduction of changes in packaging and the installation of a video

Indicator	Value
1	2
The existing losses of the company due to product loss, UAH	1250000
Total costs for improving product safety, UAH	529500
Possible savings per year, UAH	1147000
Economic effect for the year, UAH	617500

So, the total economic effect is UAH 617,500. The implementation of changes in the system of product storage during distribution can be considered cost-effective.

3.2 Recommendations for improving the distribution network management of company "BAYADERA LOGISTICS"

"BAYADERA GROUP" is a large, developed company with a wide distribution network. The company has been on the market for a long time, so the operational processes are established and stable. Nevertheless, various departments of the company implement reengineering.

It should be noted that the stability of processes reduces the speed of changes, therefore it is advisable to involve a team of employees in developing a plan for the implementation of innovative solutions in everyday operational activities.

The difficulties that Bayadera Logistics may face during the digitization of the service process are defined in Fig. 3.13.

1. A complex system of interrelationships between departments. The organizational structure of the company complicates the digitalization process due to a large number of interconnected links. At the same time, in order to function in modern conditions, such a structure forces digitalization. In the case of a large company, digitization takes a lot of time and resources.

2. An extensive system of processes is a large amount of information. In the conditions of rapid changes, there is a need to combine information in one system for effective management and to reduce the risks of losing control over individual indicators.

3. Resistance among employees is a significant problem, especially in companies that have been in the market for a long time. There is a need to improve personnel policy and increase attention to personnel efficiency. Regular training of personnel at all levels and awareness of new technologies should be carried out.

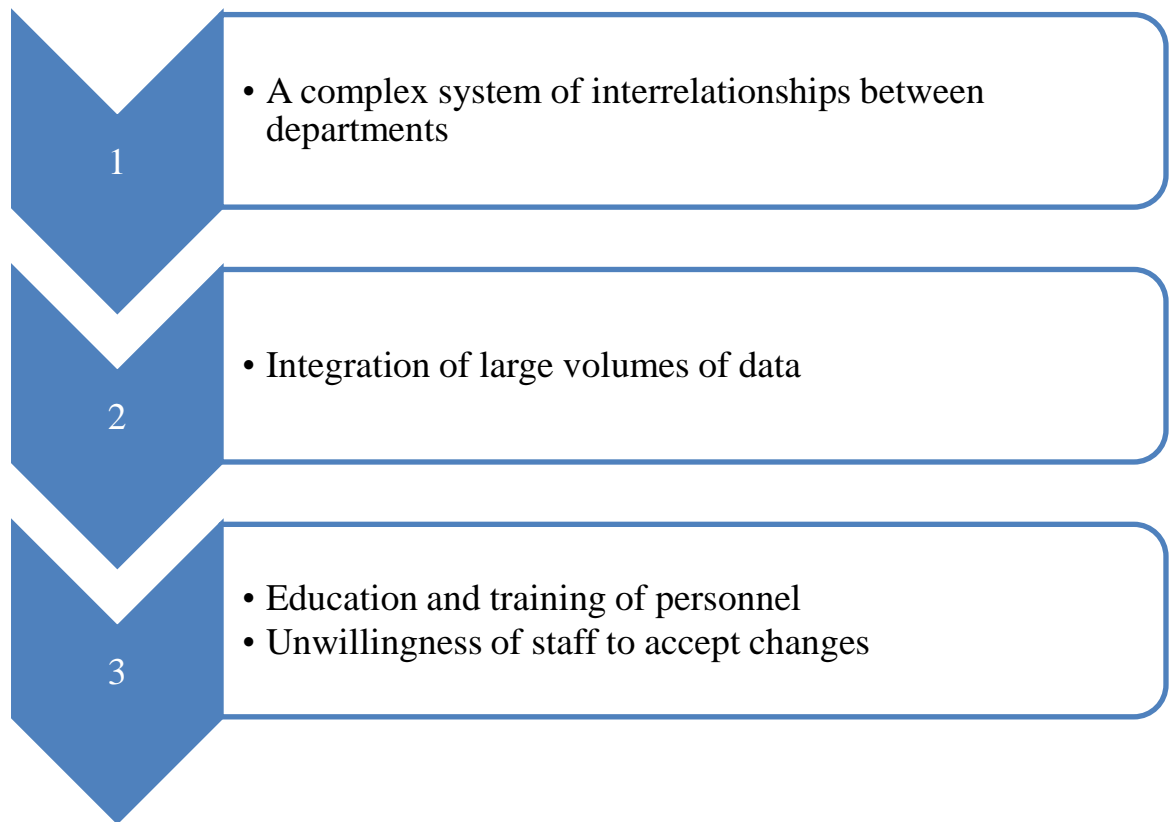


Figure 3.13 – Difficulties that Bayadera Logistics may face during the digitization of the service process

The first possible direction of solution for reengineering the distribution network is an ERP system. The ERP system is a program for managing the company's activities based on a single database. This platform consists of modules that can be adjusted to the needs of an individual enterprise (Fig. 3.14).

It is possible to determine the main reasons that lead to the implementation of the ERP system in the management of the distribution network of "Bayadera Logistics" LLC:

1. The need for a single resource for analysis, management and control of basic operations.
2. Different software at distribution stages and the need to combine data in one system.
3. Long time for processing requests from customers and the need for a significant amount of time to provide additional information or resolve problematic situations.

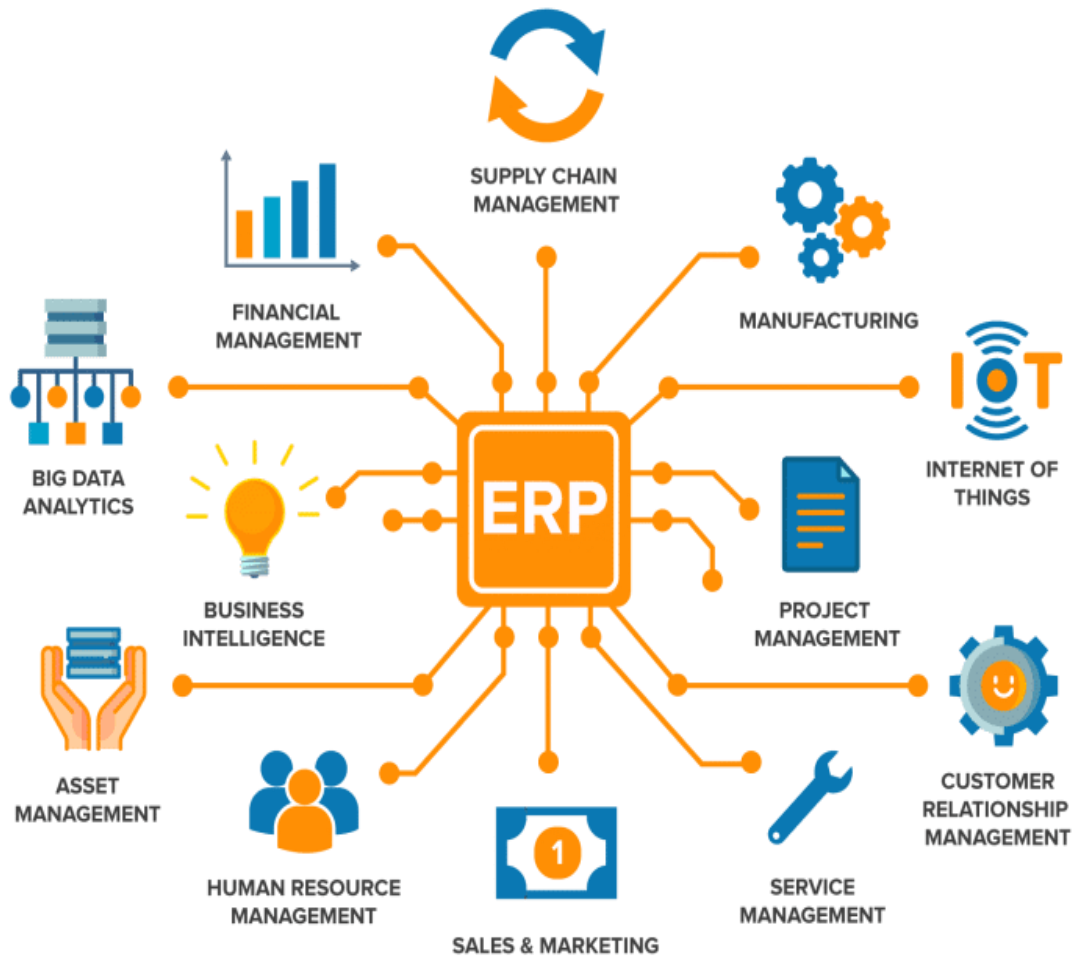


Figure 3.14 – The ERP system [23]

Another possible area of improvement is the improvement of the CRM system. The CRM system is a tool system for managing relationships with customers. It is a database with information about customers, including contacts, order history.

This tool makes it possible to establish cooperation with clients and organize high-quality communication with them (Fig. 3.15).

Main areas of management improvement the company's distribution network:

- fast and high-quality analysis of processes;
- improving the quality of customer service;
- optimization of logistics processes through the implementation of new technologies;
- HR management.



Figure 3.15 – The CRM system [12]

The next recommended area of implementation of changes is the improvement of cargo security in order to improve the efficiency of the logistics and distribution network as a whole. The final result of distribution is the delivery of the necessary amount of goods to the specified place. Therefore, damage at the stage of moving or storing goods directly affects the level of satisfaction of the client's needs. The consequence of damage is not only additional costs for processes, but also a lower level of customer trust.

Last, but not least, is a recommendation to improve personnel management. Each implementation of technological changes must be accompanied by work with personnel directly related to the company's operational activities. It may be recommended to review and make changes to the existing system of adaptation, training, communication and motivation of employees.

The company "BAYADERA GROUP" and "BAYADERA LOGISTICS", which is part of it, is an extensive distribution network that has a complex organizational structure, which complicates the process of implementing changes. Therefore, this paper will consider possible proposals for improving the company's operational activities within the Kyiv branch and determine the economic effect of the proposed implementations.

Bayadera Logistics LLC already uses an ERP system to manage business processes. The level of efficiency of the system can be defined as sufficient for rapid processing of data, interaction of departments and execution of daily operations. The company functions in a stable mode, as the company has been on the market for a long time. However, the rapid development of society and scientific and technological progress contributes to changes in customer needs and forces the company to respond and implement improvements in the existing system or plan a change in the ERP system.

At this stage, an important implementation is the integration of TMS, WMS, ERP system. In order to maintain the competitiveness of the logistics system, rapid data exchange and uploading of information, reports from TMS, WMS, access of department heads to supply chain information should be organized.

Data from ERP, WMS, TMS systems must be uploaded to the Business Intelligence system (Fig. 3.16). BI is a program that exists for collecting information about all processes and results of activities, data storage and analysis. This is necessary software, which makes it possible to quantitatively evaluate the results and detect deviations of the indicators from the norm and to remediate them in a timely manner.

A possible option for improving the functioning of the TMS system should be considered, which is well developed and has already reduced the human factor during route planning and enables planning in 2-3 hours, and data transfer to the warehouse for cargo collection and readiness for departure in the morning. The complete cycle from receiving the order from the sales department to the start of the route is less than 12 hours.

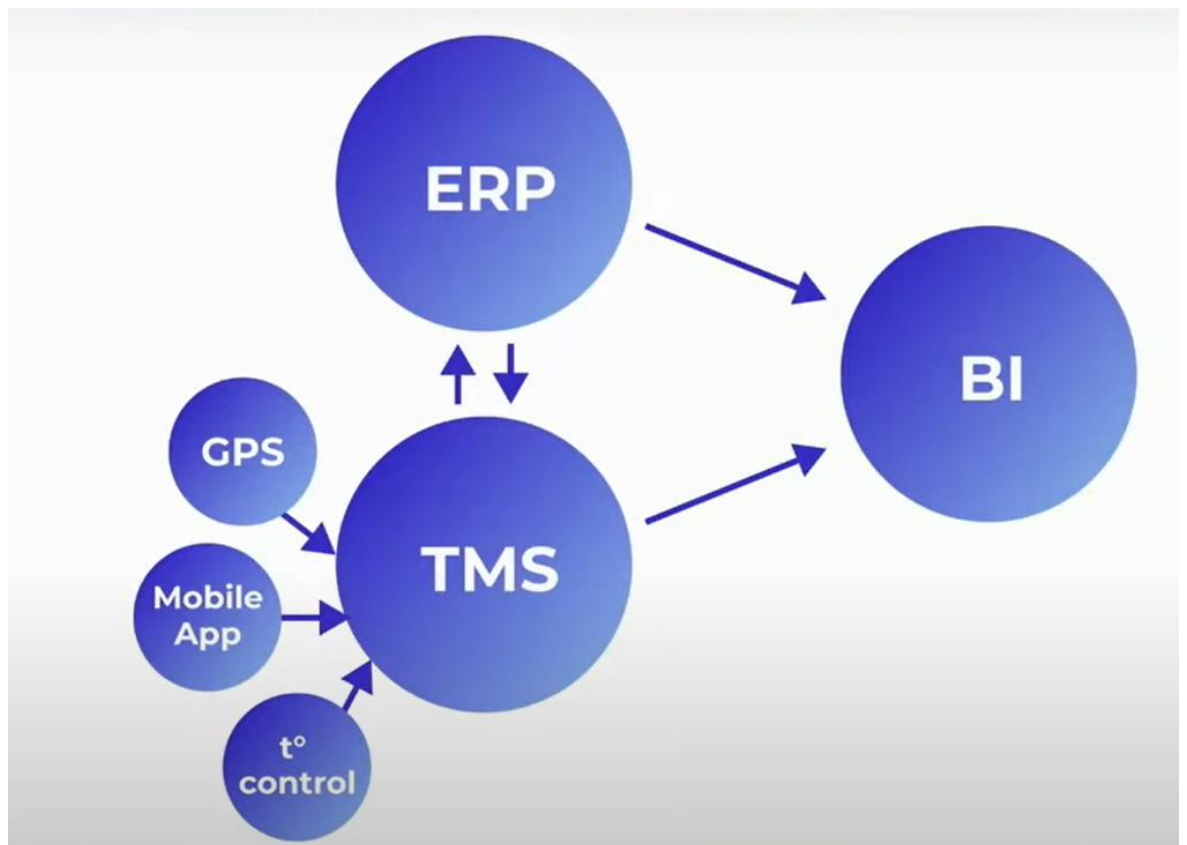


Figure 3.16 – Graphic representation of the organization of the information system [34]

It may be recommended to implement Artificial Intelligence in TMS and WMS as soon as possible. AI functionality in the TMS system:

- arrival time analysis;
- analysis of the road situation (traffic jams, blocked roads, restrictions for trucks);
- analysis of previous experience and predictive analytics;
- analysis of the most frequent problems.

This makes it possible to organize higher-quality automatic route planning, reduce the human factor in the logistician's work, speed up transportation, thereby reducing transportation costs and related processes.

The opportunities that open up for the company due to the implementation of digitalization technologies can be considered (Fig. 3.17).

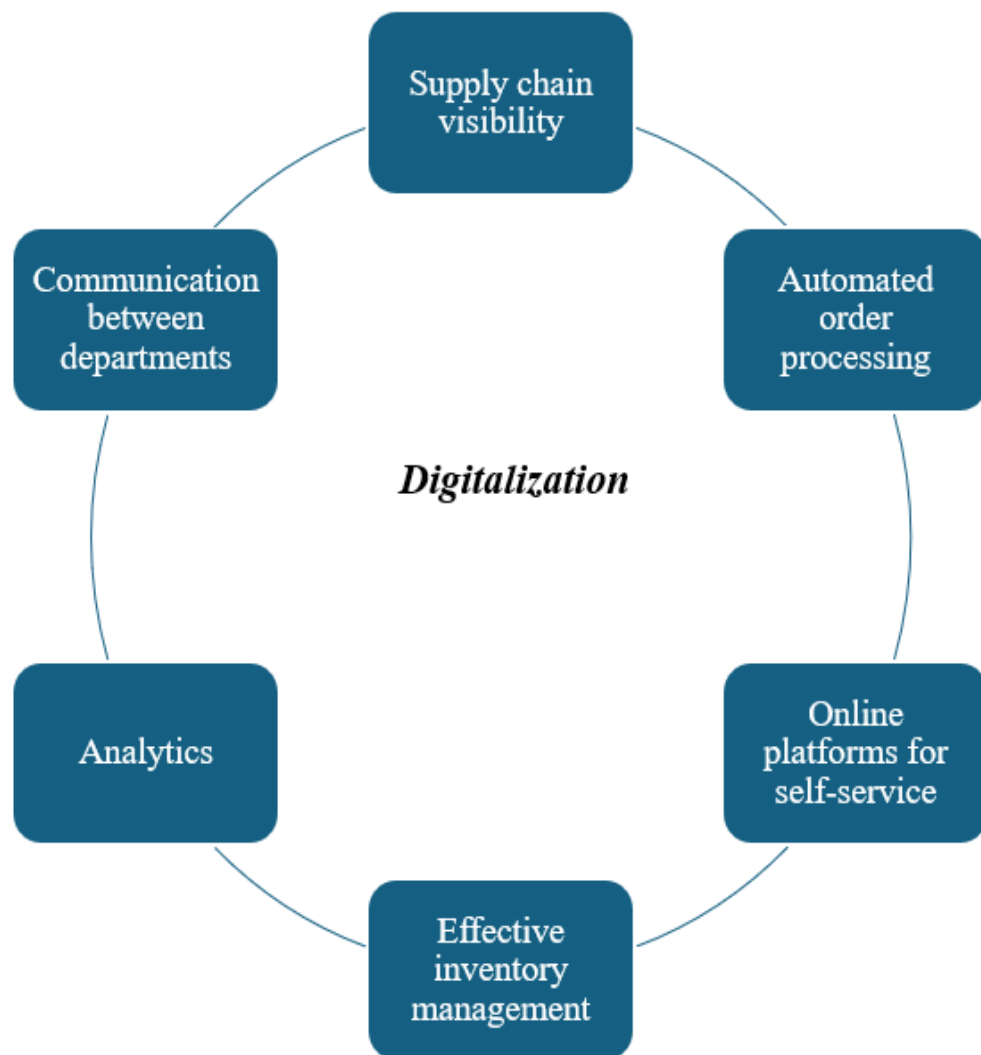


Figure 3.17 – Impact of digitization on business processes

A large-scale solution that can be offered to the company is the optimization of the ERP system or the introduction of a more modern one (Table 3.9). In the context of improvement for the "BAYADERA LOGISTICS" company, the following advantages of changing the ERP system can be considered:

- optimization of the manager's work;
- transparency of operations;
- reduction of ace for performing operations;
- improving the quality of communication and customer service.

Table 3.9 – Comparative analysis of ERP systems [28]

Name	Description	Price
1	2	3
SAP S/4HANA	SAP S/4HANA is an advanced enterprise resource planning (ERP) system with built-in intelligent technologies, including artificial intelligence, machine learning and advanced analytics.	Roughly average annual - 20 thousand dollars
SAP Business One	It is an affordable way to manage entire business, from accounting and finance, procurement, inventory, sales and customer relations, and project management to operations and human resources.	
Microsoft Dynamics 365 for Finance and Operations	It accumulates the most modern and relevant ERP, CRM and BI-processes, covers all spheres of the company's activity and allows all business processes to be transferred to the digital environment.	Roughly average annual - 11 thousand dollars
Dynamics 365 Business Central	It is an integration of financial departments, sales departments, production, service and operations.	
Oracle Business Suite	Oracle Business Suite includes more than 150 integrated software modules. Functional blocks of the program can be conditionally divided into: Oracle ERP, Oracle CRM and Oracle E-Hub.	Roughly average annual - 12 thousand dollars

A comparison of different ERP systems is shown in Fig. 3.18.

Tasks performed by Oracle Business Suite for the distribution of alcoholic beverages:

- inventory management;
- logistics management;
- sales management;
- project management;
- financial analysis.



Figure 3.18 – Comparative analysis of ERP systems [52]

It may be recommended to use the ERP system Oracle Business Suite. This system meets the needs of the company most precisely. The combination of CRM, ERP and e-Hub will provide an opportunity to effectively manage the distribution network of the "BAYADERA GROUP" company. It is possible to adapt this system to the needs of a specific company, as Oracle offers modular solutions.

The final product consists of standalone SaaS applications. So it is possible to build own system and not use redundant solutions. In addition, applications can be added to the processes of use and ERP capabilities can be expanded.

Chapter 3 summary

The third section was devoted to development of proposals for improvement of management of the distribution network of alcohol products. Deficiencies and problem areas were identified for which an action plan for optimization can be developed.

The first proposal concerned the improvement of cargo security control during transportation. It was proposed to install a video surveillance system in the luggage compartment of the truck. This reduces the likelihood of theft during the delivery of goods from the warehouse to the point of sale.

The second proposal concerned changing the ERP system to a more modern and effective one for this company. It was concerned the change of packaging to a more practical option. In the course of research, the option of additional sealing of the existing packaging due to bubble film and the option of changing the packaging to a box with sealing were compared. Boxes turned out to be a more cost-effective option.

The third proposal is to change the ERP system to a more modern version. During the research, several options of ERP systems, which are popular in the market of distribution services, were considered. Oracle Business Suite can be offered for implementation because it is a convenient system format that can adapt to business needs.

However, it may also be suggested not to change the ERP system, but to improve the existing one at the expense of new technologies, such as: artificial intelligence, digitalization.

CONCLUSIONS AND RECOMMENDATIONS

In the first chapter, theoretical approaches to the management of the distribution network of alcohol products were considered. The main approaches to defining the concepts of distribution, distribution network, distribution network management were analyzed. For this, the materials of scientists working in the field of distribution and logistics were used.

Distribution is a complex and multifunctional process, which includes a number of interconnected and sequential operations. The supply and distribution chain is formed on the basis of market analysis, product specifics, delivery geography, and financial forecasts.

A distribution network is a network of transport and storage facilities that are connected to each other, but each performs a certain number of duties at the stage of movement.

The specifics of managing the distribution network of alcoholic products were also considered. This subsection includes a description of the structure of the distribution network, the main participants and distribution channels. The main tasks of the participants of the distribution network are specified for the organization of network management.

The specifics of alcoholic products, which directly affect the organization of distribution, are noted. Alcohol is a product that is subject to customs duty and must be marked in a special order. Statutory regulations that control the sale of alcohol were noted.

Special software is used for distribution management. This is one of the ways to optimize and improve the company's activities. This paper considers the ERP system as a basis for the organization of information infrastructure within the company. DRP for direct planning of the client's part. DRP is a system that is created to plan the right amount of products to be manufactured, the optimal level of stocks in the warehouse. Auxiliary systems are WMS and TMS, which are used to organize logistics processes.

In the second section, an analysis of organizational and economic characteristics was carried out management of the enterprise's distribution network. Basic information about the company was provided for the formation of the portfolio. Analysis of production and financial indicators of the company's activity, namely statistics for the last 3 years: types of products, geography, customers, financial indicators was carried out. Based on the analysis of financial indicators, strengths and weaknesses were identified, which helped form the SWOT analysis. The result of the calculations is the formulation of a managerial decision regarding the state of the company. The conclusions are as follows: financial stability is defined as relatively stable, liquidity – relatively stable, business activity – stable. The problem is the low level of equity capital and the presence of long-term liabilities.

An analysis of the distribution network of alcoholic products was carried out. A description of distribution processes at Bayadera Logistics LLC is provided. Theoretical information is supported by real data provided by the company. Graphs, diagrams, and tables were used for the convenience of information presentation. The description includes production and logistics facilities, information systems, management features.

The third section is development of proposals for improvement management of the distribution network of alcohol products. At this stage, first of all, the problems that prompt the introduction of changes to the existing distribution network management system were identified. In this work, an example of a bottleneck is considered – cargo safety and the obsolescence of the information system. These problems were noticed during practice and can be defined as relevant and those that can be implemented in a fairly short period of time.

The existing approaches to the optimization of business processes, which are used for companies of this type, were considered. Before the practical analysis of such methods, theoretical information was provided, the specifics of use, advantages, functionality were described.

First of all, the problem of product safety during distribution was considered. A problem area is product damage during transportation and increased risk of theft. Such

a problem, of course, leads to additional costs for the company. However, there is another very important aspect. In the case of delivery to the client of the wrong quantity of goods and damaged goods, the company's reputation is damaged. This gives it an edge over competitors. Since the market for alcohol products is quite narrow, it is very important to hold positions and any weakness leads to a decrease in customer loyalty.

In order to solve this problem, it is proposed to increase control over products during transportation. The first method is the installation of video surveillance cameras in the cargo compartment of the vehicle. The economic effect of installing two types of video surveillance was calculated: a Wi-Fi video camera for one's own fleet and a video recorder for a hired one; a video camera without the possibility of viewing in real time for own fleet and a video recorder for a hired one. The implementation of the first system is more effective, since its use gives a higher percentage value of the probability of delivering goods in the required quantity and quality.

Secondly, it is proposed to change the packaging or to tighten the existing packaging of those product categories that are most often beaten. The economic effect of replacing the packaging with boxes with dividers and sealing the existing packaging with bubble wrap was analyzed. As a result of the calculations, the option of replacing the packaging is more effective. a box with dividers minimizes the risk of the bottle breaking. In addition, such packaging can be reused and is more environmentally friendly. Changing the packaging takes time and cannot be implemented immediately, but it will significantly affect the level of product safety.

Another problem is the imperfection of the information system and the management system of the distribution network. The paper considers various options of the ERP system and determines that the Bayadera Logistic company can use the system Oracle Business Suite. The advantage of such a system is the possibility to assemble it as a designer from those programs that are not necessary.

Since changing the ERP system is a long-term and costly process, it is also possible to suggest improving the existing system with the help of AI. This will make it possible to more efficiently plan purchases, demand, routes and optimize communication with customers.

The proposals considered in the third section are aimed at optimizing distribution processes, reducing costs and risks. These improvements directly affect the company's service level and customer loyalty. In the long run, this will lead to increased sales, signing of contracts, and an advantage over competitors.

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BALANCE SHEET

Assets		2021	2022	2023
<i>Current assets</i>				
Cash and cash equivalents	1165	8931	34281	192276
Receivables	1125	2690163	1504014	1676547
Inventories	1100	471909	449259	453044
Total current assets		789929	794311	865873
<i>Non-current assets</i>				
Investment property	1015	2 961	2 789	2 620
Long-term financial investments	1030	177 615	171 691	161 755
Total non-current assets			794 311	865 873
Total assets		3560372	2715309	3089223
Liabilities				
Registered (mutual) capital	1400	168 087	168 087	168 087
Retained earnings (uncovered losses)	1420	-38 093	-94 370	-160 466
Total		201 217	144 940	78 844
<i>Long-term liabilities and provisions</i>				
Long-term provisions	1520	45 506	19 085	201
Total long-term liabilities and provisions		84365	65335	26119
Total liabilities		3367994	2551491	2749728