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BACHELOR THESIS

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

THEME: **«Organization of sale of logistics operator services»**

Speciality 073 «Management»

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Київ 2020

NATIONAL AVIATION UNIVERSITY
Faculty of Transport, Management and Logistics
Logistics Department

Academic degree Bachelor

Speciality 073 «Management»

Educational and Professional Program «Logistics»

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TASK

FOR COMPLETION THE BACHELOR THESIS OF STUDENT

Mykola V. Melnyk
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1. Theme of the master thesis: «Organization of sale of logistics operator services » was approved by the Rector Directive №553/CT. of May 04, 2020.
2. Term performance of thesis: from May 25, 2020 to June 21, 2020.
3. Date of submission work to graduation department: June 05, 2020.
4. Initial data required for writing the thesis: general and statistical information about logistics service sales, information of the company «Kuehne+Nagel», production and financial indicators of the company « Kuehne+Nagel », literary sources on logistics and services sale, Internet source.
5. Content of the explanatory notes: introduction, the essence of the logistics service; the specifics of logistics provider activity; general characteristic of logistics company «Kuehne+Nagel»; analysis the activity of the company « Kuehne+Nagel » and financial and production indicators; identification the place of company «Kuehne+Nagel» on national market of logistics services; description of the process of logistics services sales and definition the way of improving; project development of blockchain technology implementation in the company's activity; calculation of the economic effect of the proposed measures; conclusions and recommendations.
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	25.05.20-27.05.20	Done
2.	Collection of statistical data, timing, detection of weaknesses, preparation of the first version of the analytical chapter	28.05.20-29.05.20	Done
3.	Development of project proposals and their organizational and economic substantiation, preparation of the first version of the project chapter and conclusions	30.05.20-01.06.20	Done
4.	Editing the first versions and preparing the final version of the master thesis, checking by standards inspector	02.06.20-03.06.20	Done
5.	Approval for a work with supervisor, getting of the report of the supervisor, getting internal and external reviews, transcript of academic record	04.06.20	Done
6.	Submission work to Logistics Department	05.06.20	Done

Student _____
(signature)

Supervisor of the master thesis _____
(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, Savchenko L.V.	25.05.20	25.05.20
Chapter 2	Associate Professor, Savchenko L.V.	28.05.20	28.05.20
Chapter 3	Associate Professor, Savchenko L.V.	30.05.20	30.05.20

9. Given date of the task May 25, 2020.

Supervisor of the master thesis: _____
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Savchenko L.V.
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Task accepted for completion: _____
(signature of graduate)

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ABSTRACT

The explanatory notes to the bachelor thesis « Organization of sale of logistics operator services » comprises of 77 pages, 23 figures, 18 tables, 50 references.

KEY WORDS: LOGISTICS PROVIDER, LOGISTICS SERVICES SALES, SERVICE QUALITY, BLOCKCHAIN

The purpose of the research is to study the theoretical foundations and problems of logistics services sale and the way of its improving and to develop project recommendations for increasing service quality and attract and hold customers.

The subject of research is the management of the sale process and service quality of the logistics company “Kuehne + Nagel”.

The object of research was the processes of logistics service sales in “Kuehne + Nagel”, the impacts on this process and the ways to attract and retain a customer.

Methods of research are scientific inquiry, empirical, analysis and synthesis, modeling, expert assessments, extrapolation of time series.

Materials of the thesis are recommended for use during scientific research, in the educational process and in the practical work of specialists of logistics departments.

CONTENTS

NOTATION	7
INTRODUCTION	8
CHAPTER 1. THEORETICAL BASICS OF LOGISTICS ACTIVITY AND SERVICES.....	11
1.1 Theoretical basics of logistics service.....	11
1.2 Breakdown of logistics provider concept.....	15
1.3 Logistics marketing planning.....	23
1.4 Chapter 1 summary.....	24
CHAPTER 2. ANALYSIS OF THE COMMERCIAL ACTIVITIES CARRIED OUT BY COMPANY “KUEHNE+NAGEL”.....	26
2.1 General characteristic of Kuehne + Nagel.....	26
2.2 Analysis of the Kuehne + Nagel business indicators.....	32
2.3 The place of Kuehne + Nagel on the logistics services market.....	43
2.5 Chapter 2 summary	45
CHAPTER 3. DEVELOPMENT OF PROPOSALS FOR THE IMPLEMENTATION OF BLOCKCHAIN TECHNOLOGY TO IMPROVE THE QUALITY OF LOGISTICS SERVICES.....	45
3.1 Sales process organization in Kuehne + Nagel.....	45
3.2 Implementing the blockchain technology in the company’s activity.....	51
3.3 Calculation of the economic efficiency of the blockchain implementation	58
3.4 Chapter 3 summary	67
CONCLUSIONS AND RECOMMENDATIONS	69
REFERENCES	72

NOTATION

CHF	– Swiss Franc;
DPP	– Discounted Payback Period;
EBIT	– Earnings Before Interest And Taxes;
EBITDA	– Earnings Before Interest, Taxes, Depreciation, and Amortization;
FCL	– Full Container Load;
FTL	– Full Truck Load;
GDP	– Gross domestic product;
IMCs	– Intermodal Marketing Companies;
IRR	– Internal Rate of Return;
KN	– Kuehne + Nagel;
KPI	– Key Performance Indicator;
LLPs	– Lead Logistics Provider;
LCL	– Less than Container Load;
LTL	– Less than Truck Load;
NPV	– Net Present Value;
PL	– Part Logistics;
PP	– Payback Period;
RAM	– Reliability, Availability and Maintainability;
TEU	– Twenty-Foot Equivalent Unit.

INTRODUCTION

Logistics services move materials into and out of a company. This can involve transportation, packaging, warehousing and security. When we sell these services, we may confuse our potential customer with too many options. In addition, our customer may not have a clear sense of what kind of savings can be had from each type of service.

Selling logistics (3PL) services is getting tougher with growing competition in the logistics industry. 3PL experts agree that pricing remains a vital factor in attracting customers to their business. Customers seek 3PL services because they believe service providers can run their transportation and warehouses more efficiently and effectively for a reasonable price. Every 3PL provider faces the challenge to retain existing customers while attracting new clients. And when we talk about customer retention first of all we talk about the quality and price of services. The client stays with us while it is profitable for him.

Nowadays, logistics research focuses on testing the ability of logistics companies to provide service with high level of quality that create and retain satisfied customers. Customer loyalty is often recognized as an essential problem in the company operating, that is looking for a sustainable and long-term presence in the target market. Challenge is not in creation of the high quality services and making customers be satisfied, because many competitors are able to do that, but in making loyal and profitable customers. Loyalty means that customer, during a longer period of time, buys and uses specific service structure and has positive attitudes towards company and its offers. Companies are in constant dilemma about what shall be done in order to gain true and loyal customers. Everybody agrees that service quality and satisfaction are main prerequisites for customer loyalty. If customer is satisfied, it's logical that he should buy - use the same service of a company again. However, that doesn't happen always, since satisfaction is not the only prerequisite for loyalty. A customer can be satisfied until a competitive service appears the quality and price of

which are more attractive. A customer too can have positive attitudes toward a company and not to be satisfied with a service and vice versa. That means that satisfied customer still can change a company. It is necessary to bear in mind that modern customers are rarely characterized with lifetime loyalty, or any other kind of loyalty for that matter, to one offer or one company.

The purpose of bachelor thesis is justification of blockchain implementation project and project proposals development whose aims are increasing of quality of service and, consequently, competitiveness.

The following scientist and researchers focused their efforts on developing blockchain technology in logistics: Nakasumi, M. [42], Mario Dobrovnik, David M. Herold, Elmar Fürst, Sebastian Kummer [41], Guido Perboli, Stefano Musso, Mariangela Rosano [27], Korpela, K., Hallikas, J., Dahlberg T [31].

In accordance with purpose of thesis was defined and formed the follow tasks:

1. Consider theoretical basics of logistics service.
2. Breakdown of logistics provider concept.
3. To study logistics marketing planning.
4. Describe general characteristic of logistics company Kuehne + Nagel.
5. Carry out analysis of the Kuehne + Nagel business indicators.
6. To define the place of Kuehne + Nagel on the logistics services market.
7. Consider sales process organization in Kuehne + Nagel.
8. explore the possibility of implementation the blockchain technology in the company's activity.
9. Carry out calculation of the economic efficiency of the blockchain implementation.

The object of research was the processes of logistics service sales, the impacts on this process and the ways to attract and retain a customer.

During the performance of the thesis was used general scientific methods: system analysis, induction and deduction, analyze and synthesis, expertise. During calculation of economic effectiveness of the project was used project performance indicators.

The information sources during thesis research were:

–regulations and legal documents;

–scientific and methodological development whose connect with social and environmental responsibility;

–statistics and financial report of Kuehne + Nagel company, internal documents that describe company's activity;

–Internet sources.

During carrying out calculations and edition of thesis was used Microsoft Office software applications: Word, Excel and Visio.

CHAPTER 1

THEORETICAL BASICS OF LOGISTICS ACTIVITY AND SERVICES

1.1 Theoretical basics of logistics service

Logistics is generally the detailed organization and implementation of a complex operation. In a general business sense, logistics is the management of the flow of things between the point of origin and the point of consumption to meet the requirements of customers or corporations. The resources managed in logistics may include tangible goods such as materials, equipment, and supplies, as well as food and other consumable items. The logistics of physical items usually involves the integration of information flow, materials handling, production, packaging, inventory, transportation, warehousing, and often security. [35]

The Oxford English Dictionary defines logistics as "the detailed organization and implementation of a complex operation". [37] However, the New Oxford American Dictionary defines logistics as "the detailed coordination of a complex operation involving many people, facilities, or supplies", and the Oxford Dictionary on-line defines it as "the business of transporting and delivering goods". [36] As such, logistics is commonly seen as a branch of engineering that creates "people systems" rather than "machine systems".

According to the Terms and Glossary of Supply Chain Management, [46] logistics is the process of planning, implementing and controlling procedures for the efficient and effective transportation and storage of goods including services and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements and includes inbound, outbound, internal and external movements.

Inbound logistics is one of the primary processes of logistics concentrating on purchasing and arranging the inbound movement of materials, parts, or unfinished

inventory from suppliers to manufacturing or assembly plants, warehouses, or retail stores.

Outbound logistics is the process related to the storage and movement of the final product and the related information flows from the end of the production line to the end user.

Given the services performed by logisticians, logistics can be broken down as different fields (see Fig. 1.1)

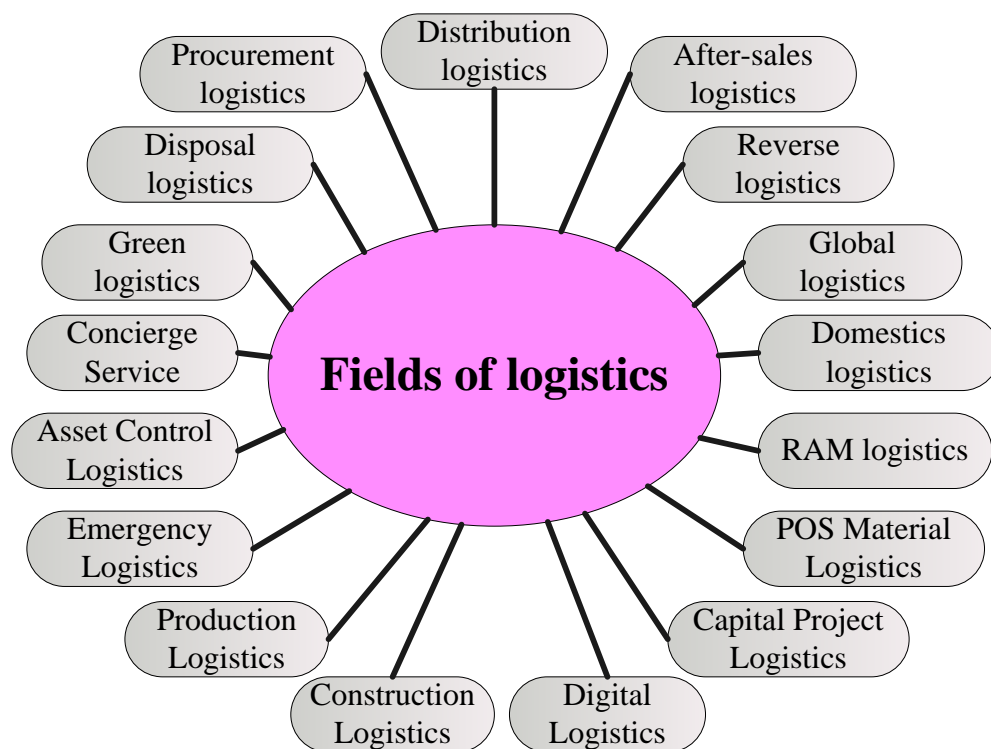


Figure 1.1 – The main fields of logistics

Procurement logistics consists of activities such as market research, requirements planning, make-or-buy decisions, supplier management, ordering, and order controlling. The targets in procurement logistics might be contradictory: maximizing efficiency by concentrating on core competences, outsourcing while maintaining the autonomy of the company, or minimizing procurement costs while maximizing security within the supply process.

Advance Logistics consists of the activities required to set up or establish a plan for logistics activities to occur.

Distribution logistics has, as main tasks, the delivery of the finished products to the customer. It consists of order processing, warehousing, and transportation. Distribution logistics is necessary because the time, place, and quantity of production differs with the time, place, and quantity of consumption.

Disposal logistics has as its main function to reduce logistics cost(s) and enhance service(s) related to the disposal of waste produced during the operation of a business.

Reverse logistics denotes all those operations related to the reuse of products and materials. The reverse logistics process includes the management and the sale of surpluses, as well as products being returned to vendors from buyers. Reverse logistics stands for all operations related to the reuse of products and materials. It is "the process of planning, implementing, and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing value or proper disposal. More precisely, reverse logistics is the process of moving goods from their typical final destination for the purpose of capturing value, or proper disposal. The opposite of reverse logistics is forward logistics."

Green Logistics describes all attempts to measure and minimize the ecological impact of logistics activities. This includes all activities of the forward and reverse flows. This can be achieved through intermodal freight transport, path optimization, vehicle saturation and city logistics.

RAM Logistics (see also Logistic engineering) combines both business logistics and military logistics since it is concerned with highly complicated technological systems for which Reliability, Availability and Maintainability are essential, ex: weapon systems and military supercomputers.

Asset Control Logistics: companies in the retail channels, both organized retailers and suppliers, often deploy assets required for the display, preservation, promotion of their products. Some examples are refrigerators, stands, display monitors, seasonal equipment, poster stands & frames.

Emergency logistics (or Humanitarian Logistics) is a term used by the logistics, supply chain, and manufacturing industries to denote specific time-critical modes of transport used to move goods or objects rapidly in the event of an emergency. The reason for enlisting emergency logistics services could be a production delay or anticipated production delay, or an urgent need for specialized equipment to prevent events such as aircraft being grounded (also known as "aircraft on ground"—AOG), ships being delayed, or telecommunications failure. Humanitarian logistics involves governments, the military, aid agencies, donors, non-governmental organizations and emergency logistics services are typically sourced from a specialist provider.

The term production logistics describes logistic processes within a value adding system (ex: factory or a mine). Production logistics aims to ensure that each machine and workstation receives the right product in the right quantity and quality at the right time. The concern is with production, testing, transportation, storage and supply. Production logistics can operate in existing as well as new plants: since manufacturing in an existing plant is a constantly changing process, machines are exchanged and new ones added, which gives the opportunity to improve the production logistics system accordingly. Production logistics provides the means to achieve customer response and capital efficiency. Production logistics becomes more important with decreasing batch sizes. In many industries (e.g. mobile phones), the short-term goal is a batch size of one, allowing even a single customer's demand to be fulfilled efficiently. Track and tracing, which is an essential part of production logistics due to product safety and reliability issues, is also gaining importance, especially in the automotive and medical industries.

Construction Logistics is known to mankind since ancient times. As the various human civilizations tried to build the best possible works of construction for living and protection. Now the construction logistics emerged as vital part of construction. In the past few years construction logistics has emerged as a different field of knowledge and study within the subject of supply chain management and logistics.

Digital logistics is driven by a new generation of web-based, enterprise logistics applications that enable collaboration and optimization, leveraging a central logistics

information backbone that provides visibility across the enterprise and extended supply chain.

1.2 Breakdown of logistics provider concept

A simple definition of logistics provider is follow: a company that provides management over the flow of goods and materials between points of origin to end-use destination. The provider will often handle shipping, inventory, warehousing, packaging and security functions for shipments. [38]

Very often use the term PL to describe logistics service provider. The abbreviation “PL” means “Party Logistics Provider” and is a supply chain model for logistics specialists. [39, 4]

There are different ways in which companies manage logistics. Some have their own fleet of vehicles and drive the transports themselves. Others hand over the complete organisation and management of the transports to a service provider. What these different models entail is explained in the following part:

1PL – First Party Logistics Model.

With the First Party Logistics Model (1PL), the company which produces the goods, takes over the transport and logistics services himself.

The company carries out all necessary activities and has expensive equipment such as trucks, trailers, warehouses, etc.

2PL – Second Party Logistics Model.

The Second Party Logistics Model (2PL) stands for the outsourcing of transports to a contractually bound logistics partner. The shipper of the goods outsources transport and storage services to a logistics service provider, but still retains control and administrative management of the logistics.

The logistics service provider generally owns and operates its own facilities.

3PL – Third Party Logistics Model.

The Third Party Logistics Model (3PL) is a common model in commercial shipping. This model may also include a variety of other services such as delivery, labelling, product packaging and customs clearance.

As defined by the Council of Supply Chain Management Professionals, an external logistics provider performs transportation, warehousing, packaging, forwarding, cross-docking, and inventory management functions.

4PL – Fourth Party Logistics Model.

With the Fourth Party Logistics Model (4PL), the shipper outsources the operational handling of the transport and warehouse service as well as the administration of logistics.

The 4PL service provider takes over the entire supply chain operation. It links producers, suppliers, retailers, IT service providers, financiers and logistic providers.

Key feature: The service provider does not operate a facility-based business model, nor does it own a warehouse or a fleet of vehicles that could be used to carry out the transports.

Instead, the logistics service provider organizes, manages and monitors the transports.

This model is more integrated than the most popular third-party and previous models.

5PL – Fifth Party Logistics Model.

A Fifth Party Logistics Model (5PL) can be used when converting from supply chains to supply networks.

The 5th Party logistics provider can consolidate the requirements and capacity of 3PLs and 4PLs. A 5PL negotiates favourable tariffs and services with service providers such as forwarders and airlines. It also offers its customers strategic and innovative solutions and concepts.

The tasks of 5PL service providers include providing a framework for planning and implementing multiple parts of the supply chain. This includes the provision of materials, services, information and also capital flows required for the planning, delivery and tracking of transportation.

The pros and cons of different PL providers are given in Table 1.1.

Table 1.1 – Advantages and disadvantages of PL providers

	Advantages	Disadvantages
1PL, 2PL	<ul style="list-style-type: none"> • No disclosure of sensitive data to third parties; • The company builds up internal know-how by carrying out its own shipments; • The shipper has control over all steps during transport; • The company has a simple communication through internal procedures. 	<ul style="list-style-type: none"> • Investments in own assets, e.g. in a vehicle fleet, entail risks and have an influence on the liquidity of the company; • The core competence of the company is usually not transport, which is why expert knowledge could be less developed.
3PL, 4PL, 5PL	<ul style="list-style-type: none"> • The company no longer needs to invest in transport resources, because these are no longer necessary by handing them over to external logistics providers. There is a low capital commitment due to the omission of assets; • The shipper benefits from the logistics know-how of the service provider: all players concentrate on their tasks, which is why quality and efficiency increase and service is improved. 	<ul style="list-style-type: none"> • There is the possibility of losing know-how and thus the probability of no longer being able to take over services internally at short notice if the logistics partner should fail. The dependency on the logistics partner increases accordingly; • Sharing sensitive company information with external partners; • Companies have less control over their transports. This can lead to errors or damage in the deliveries that are not noticed by the company, resulting in reduced service and dissatisfaction of the end customer.

3PL, 4PL and 5PL are intermediaries in international trade together with international freight forwarders. [28] International freight forwarders are one of the most common forms of intermediaries and are a very important link in international trade. Without a system of freight forwarding, international trade and international transport could not function optimally. International freight forwarding is very

important as it is incorporated in the distribution and exchange of goods thus connecting production and consumption, supply and demand.

As they provide a wide range of services, it is rather complex to fully define them. Freight forwarders are an intermediary, organizing goods movements and providing other related services along a chain of transport and logistics operations. They reduce the time and costs for their clients by finding solutions to the biggest complexities in international shipments and combining together many small shipments into a one large shipment. They actually take care of everything; selection of the mode of transport, the route, the payments, international shipping requirements and documentation. International freight forwarders are the most known and common type of logistics intermediary or facilitator. They appear in day-to-day logistics and freight forwarding business and their importance is negligible.

Third-party logistics (3PL) mostly deal with basic logistics activities, and may be of huge help in developing a client's supply chain. Due to this, 3PLs are today the most often engaged type of intermediary. Third party logistics service providers coordinate carriers, logistics intermediary firms, and other service suppliers. These service providers play the role of a middleman between the seller and the buyer, render transportation, warehousing services and engage in performing other services such as consolidation and deconsolidation; cross-docking; picking and packing; custom clearance; track and trace information; insurance services; payment services; tendering and contracting carriers; and forwarding services. 3PLs have similar duties as freight forwarders but are not limited to these.

According to the Terms and Glossary of Supply Chain Management [47] third-party logistics provider is outsourcing all or much of a company's logistics operations to a specialized company. The term "3PL" was first used in the early 1970s to identify intermodal marketing companies (IMCs) in transportation contracts. Up to that point, contracts for transportation had featured only two parties, the shipper and the carrier. When IMCs entered the picture—as intermediaries that accepted shipments from the shippers and tendered them to the rail carriers—they became the third party to the contract, the 3PL. Definition has broadened to the point where these

days, every company that offers some kind of logistics service for hire calls itself a 3PL. Preferably, these services are integrated, or “bundled,” together by the provider. Services they provide are transportation, warehousing, cross-docking, inventory management, packaging, and freight forwarding.

3PLs are in close collaboration with the various links in the supply chain. The following figure shows the relationship network between 3PLs, suppliers, manufacturers, distributors and customers.

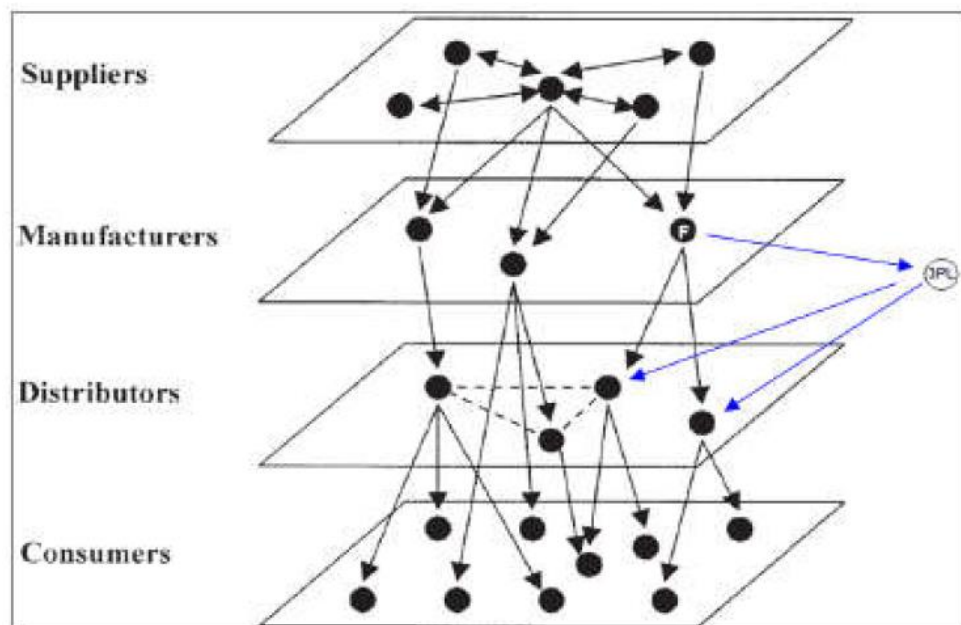


Figure 1.2 - Third-party logistics relationships

The services offered by 3PLs are constantly evolving and changing to meet new market conditions. The following Table 1.2 provides for a classification of 3PL services.

Table 1.2 - 3PL services and activities

Logistics function	Activities
1	2
Transportation	Shipping, forwarding, (de)consolidation, contract delivery, freight bill payment, household goods relocation, load tendering, brokering
Warehousing	Storage, receiving, assembly, return goods, marking and labelling

End of Table 1.2

1	2
Inventory management	Forecasting, location analysis, network consulting, layout design.
Order processing	Order entry, fulfilment
Information systems	EDI/VANS, scheduling, artificial intelligence, expert systems.
Packaging	Design, recycling.

It may seem that there is not much of a difference between the third –party logistics providers and fourth-party logistics providers. While 3PLs are mainly responsible for the logistics operations and activities, 4PLs are also responsible for the development and maintenance of all of the logistics projects. 4PLs perform the same tasks as 3PLs but in a more strategic way. They are focused on the maintenance, improvement and management of the company’s supply chain.

Fourth-Party Logistics differs from third party logistics in the following ways; 1) 4PL organization is often a separate entity established as a joint venture or long-term contract between a primary client and one or more partners; 2) 4PL organization acts as a single interface between the client and multiple logistics service providers; 3) All aspects (ideally) of the client's supply chain are managed by the 4PL organization; and, 4) It is possible for a major third-party logistics provider to form a 4PL organization within its existing structure. [47]

Fourth party logistics offer much more involvement, which may be a great advantage in comparison to other intermediaries. However, this may also mean that they have much more 'control' over company's business. This may in turn lead to loss of control, disagreement, loss of own expertise in fields performed by 4PLs and as these are usually long-term relationships they are hard to break. The following Figure 1.3 introduces the relationships of fourth party logistics providers with suppliers, manufacturers, 3PLs, distributors and customers.

When talking about fourth party logistics, it is also important to mention that they are quite often termed as lead logistics provider (LLPs). According to Supply that organizes other third party logistics partners for outsourcing of logistics

functions. An LLP serves as the client's primary supply chain management provider, defining processes and managing the provision and integration of logistics services through its own organization and those of its subcontractors. [46]

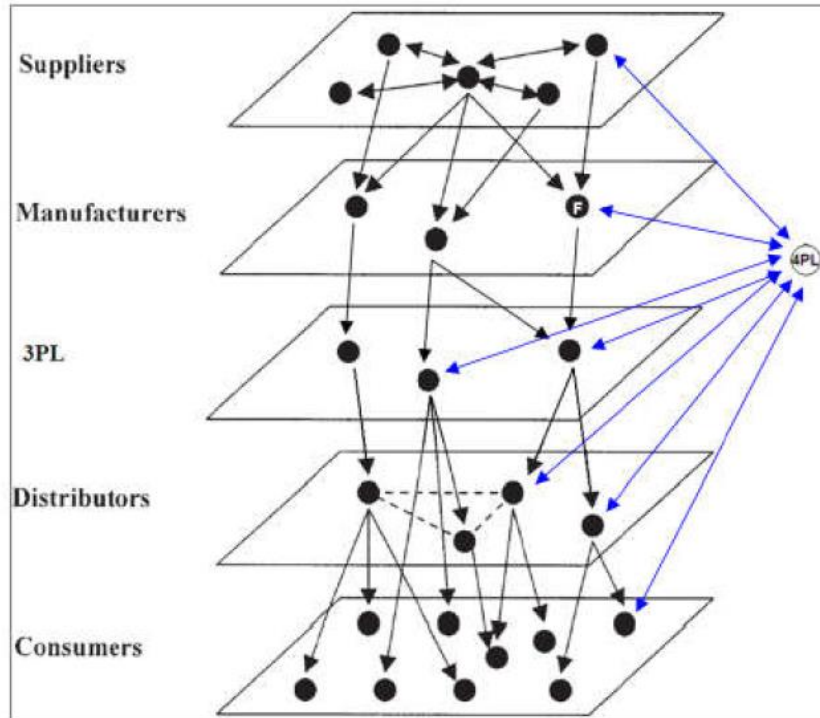


Figure 1.3 - Fourth-party logistics relationships

New trends in IT and overall international trade brought about a need for more developed service providers which lead to the emergence of the fifth-party logistics providers (5PLs). The 5PLs have not yet evolved so much in comparison to 3PLs and 4PLs, so the information on them is quite limited. According to Logistics Glossary “A fifth party logistic service provider guarantees the management of networks of supply chains. The industrial actor hires third parties for the supply of strategic, innovative logistical solutions and concepts. A fifth party logistic service provider develops and implements, preferably in close consultation with the client, the best possible supply chains or networks. Fifth party logistic is often linked to E-business.” [40]

To summarize and compare the activities (offered services) of all logistics service providers presented above, the following Table 1.3 shows the main differences and similarities between freight forwarders, 3PLs, 4PLs and 5PLs. [28]

Table 1.3 - Differences between freight forwarders, 3PLs, 4PLs and 5PLs

Intermediary	Freight forwarder	3PL	4PL	5PL
Type of service	Tactical	Tactical	Strategic	Strategic IT Supply Chain
Basic Idea	Arrange the transport and coordinate the movement of goods, prepare necessary paperwork, arrange storage and insurance	Performs multiple, or all, physical logistics functions on behalf of customer	Performs all supply chain functions for the customer; concerned with the management and improvement of the client's supply chain	Turns customer's supply chain into a function that is completely driven by technology
Resources	Usually owns few physical assets, knowledge and technology assets	May or may not own physical assets; mainly knowledge-based, technology for tracking shipments	Few physical assets, extensive knowledge and technology-based assets	Few physical assets, extensive knowledge and technology based assets
Potential Benefits	Companies, especially smaller firms, who ship internationally, arrange most cost efficient route for shipments	Companies who lack internal supply chain resources and knowledge	Companies with complex supply chains	Large companies with highly complex supply chains
Potential Drawbacks	Unknown	Focused more on moving freight than the management and efficiency of the supply chain	Loss of control and relationships with supply chain members, risk in longterm partnerships	Loss of control and relationship with supply chain members, risk in long-term partnerships

Depending on the complexity of the supply chain, each company will decide which type of logistics provider is most suitable. It means the decision will be based on the scope of needed services.

1.3 Logistics marketing planning

For logistics companies developing a marketing plan is a sequential and detailed process. There are many links that make up a dependable and efficient supply chain and many obstacles that can cause that link to sever or break. A strong marketing plan holds together all of the tactics, or links, in a company's marketing effort to help things run smoothly and guarantee success in the form of qualified leads, higher ROI and more sales. [17]

Let's describe 6 points that logistics companies should follow to develop a marketing plan.

1. Service offer definition.

It's important to have a clear offer established to avoid overpromising, and subsequently under-delivering, sellable services to clients. To define service offer properly, Brand Strategy, which will cohesively outline your positioning statement and messaging platform.

2. Determination of primary and secondary markets.

For new companies, determining markets will be dictated by capability and capacity for material handling, production, packaging, inventory, transportation, warehousing and security.

It's important to establish primary and secondary market focuses and reassess the market opportunity each year; markets shift over time and so might the demographics that need your logistics services. By reevaluating primary and secondary markets, company will be able to better adjust marketing budget and goals and in effect, increase ROI.

3. Identify competition.

As a key rule, every company has competition, regardless of how specified or niche their services or markets may be. Even if your business can't identify direct competition, contextual competition still exists. Taking the time to thoroughly

analyse any competition that may be lingering on the sidelines unnoticed can help logistics company refine its vision and focus.

4. Articulate value proposition.

It's important to determine what makes company stand out and articulate it in such a way that customers will understand. It can be lower prices, newer technology, operational efficiencies or guarantees.

For many business leaders, it's difficult to remove yourself from the day-to-day operations to think strategically about value propositions. A good way to start is by asking the question: What do our most satisfied clients say about us?

5. Allocate a marketing budget.

Company needs determining how much money they want to spend on marketing and how it will be segmented. Marketing strategy and goals depend on what primary marketing focus is, which is why it's crucial to establish a clear perspective and matching budget early on in the process.

6. Develop a tactical marketing plan.

Once company's budget is finalized, it's needed to determine what marketing channels will be used to promote value proposition to target markets.

Having a clear, agreed-upon tactical marketing plan going forward is tantamount to logistic company's success and an integrated marketing approach is most often the best way forward.

1.4 Chapter 1 summary

Today, logistics is vital component of international and domestic trade. In a broad sense logistics is defined as process of goods movement organization from the point of origin to the point of consumption, including management and controlling all related activities and services. Nowadays logistics services are very various in

different fields: transportation, warehousing, procurement, distribution, production, after-sales service, protection of natural environmental and digital transformation.

In most cases these services are provided by a logistics companies or providers and freight forwarder companies. And as for any other commercial company, it is important for such enterprises to effectively organize the sale of their services. Especially considering the fact that selling a service is much more difficult than a product: customer can't see and touch it. As long as there are consumers ready to buy the services of the company, as long as the enterprise exists. There are various sales techniques aimed at new and regular customers, to promote a new service etc. In order to understand whether sales are successful or not, it is important to measure sales effectiveness.

Sales effectiveness describes the process of finding the right sales tasks to produce the best possible sales output and outcomes. For different organizations, this could mean improved profit, revenue, sales of a new product, or something else entirely — it all depends on how company strategy defines success.

CHAPTER 2

ANALYSIS OF THE COMMERCIAL ACTIVITIES CARRIED OUT BY COMPANY “KUEHNE+NAGEL”

2.1 General characteristic of Kuehne + Nagel

With approximately 83,000 employees at some 1,400 locations in over 100 countries, the Kuehne + Nagel Group is one of the world's leading logistics companies. Its strong market position lies in the seafreight, airfreight, contract logistics and overland businesses, with a clear focus on high value-added segments such as IT-based integrated logistics solutions. [32]

The company was founded in Bremen, Germany, by August Kuehne and Friedrich Nagel in 1890. The history of Kuehne + Nagel begins in 1890 in Bremen, where Augustus Kühne and Friedrich Nagel founded a forwarding agency. [33] Initially the company was concentrated on cotton and consolidated freight. Later, in 1902, the company began its activities in the German seaport of Hamburg. In 1907, co-founder Frederick Nagel died, and August Kühne took his share in the company. In the early 1950s, Alfred Kühne initiated international expansion of the company and Kuehne + Nagel expanded its operations in Canada, opening branches in Toronto, Ontario and Montreal, Quebec. In 1963, Kuehne + Nagel bought a controlling stake in Athens and also expanded to Italy. In 1975, the company adopted a holding company called Kuehne + Nagel International AG, based in Shindellegi, Switzerland. Kuehne + Nagel also expanded through the acquisition of freight companies: Domenichelli SpA (Italy), Van Vliet BV (Netherlands), Hollis Transport Group Ltd. (UK), Transportes Tres (Spain) and other acquisitions in Denmark, Norway and Sweden. During the 1980s KN Germany operated as the biggest KN company worldwide. In 1985 KN's management devised a pan-European strategy to prepare the company for the single European market. The company's top priority was

to expand its transport, warehousing, and distribution network in Europe. This concept was called "KN Euro Logistics". In the early 2000s, Kuehne + Nagel launched in the Asia-Pacific logistics services market, when the company formed a strategic alliance with Singapore-based SembCorp Logistics. In 2001, the company acquired USCO Logistics Inc. - a logistics provider based on a warehouse in Hamden, Connecticut.

Today, the offices of Kuehne + Nagel Group are located worldwide (see Fig. 2.1). Company based in Schindellegi, Switzerland.



Figure 2.1 – Worldwide offices of the Kuehne + Nagel Group

Operating activities are carried out in the following geographic regions:

- Europe, Middle East, Central Asia and Africa (EMEA)
- North and South America
- Asian-Pacific area

Key business activities and market position of the company are presented on the Fig. 2.2.

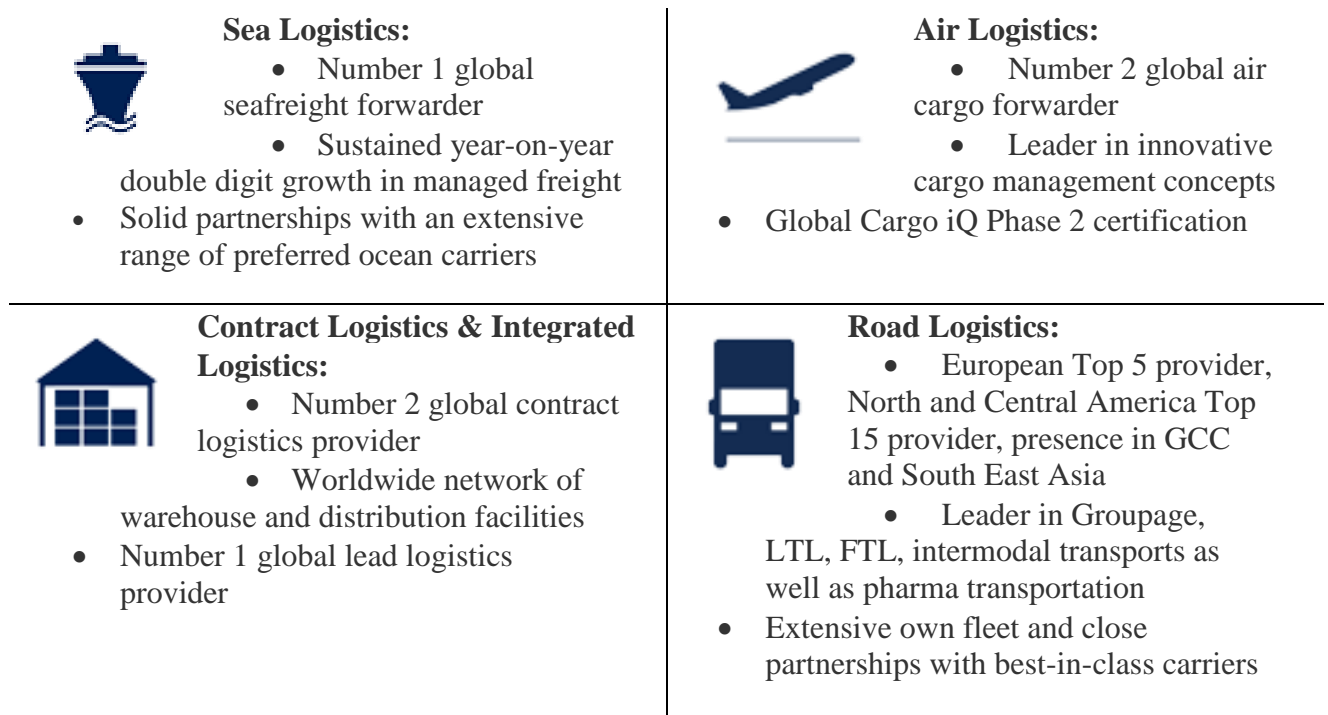


Figure 2.2 - Key business activities of the Kuehne + Nagel Group

The mission statement of Kuehne + Nagel is “the global logistics network is our strongest asset. Dedication, integration and innovation are at the heart of our business philosophy. Focused on our customers’ needs we provide integrated logistics solutions of outstanding quality and operational excellence – we are the extension of your business”.

In Ukraine Kuehne + Nagel has been operating since 1992 with approximately 450 employees at 10 locations. During this time KN built a strong team of professionals, established long-term relationship with our customers - the leading Ukrainian and international companies, which are represented in our country, created a network of branch offices in Ukraine. Head office is located in Kyiv, also offices are presented in Lviv and Odessa. [34]

Organizational structure of company is presented in the Fig. 2.3.

Business Units and Business Fields include: Sea Logistics, Air Logistics, Contract Logistics, Integrated Logistics, Overland and Insurance Brokerage.

Functional Units include: Finance + Controlling, Human Resources, Information Technology, Legal Services and QSHE.

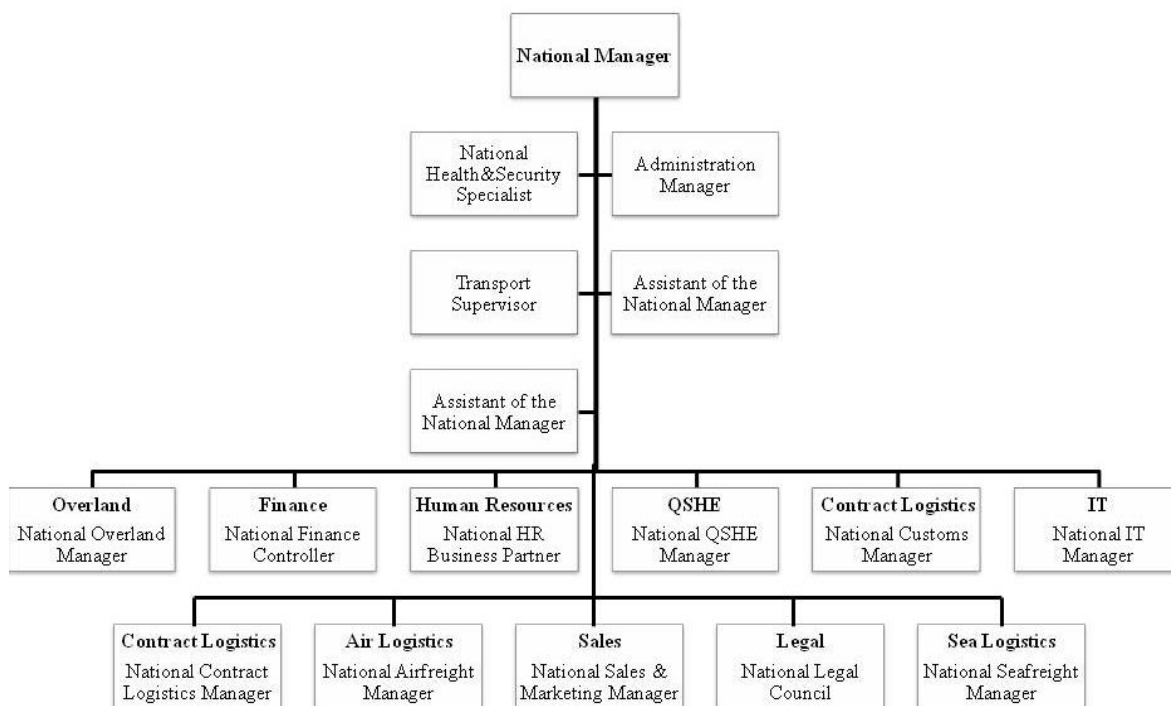


Figure 2.3 - Organizational structure of Kuehne + Nagel Ukraine

The services of Kuehne + Nagel Ukraine are provided in quite various industries: Aerospace, High-Tech, Hotel Logistics, Marine Logistics etc. (see Fig. 2.4).

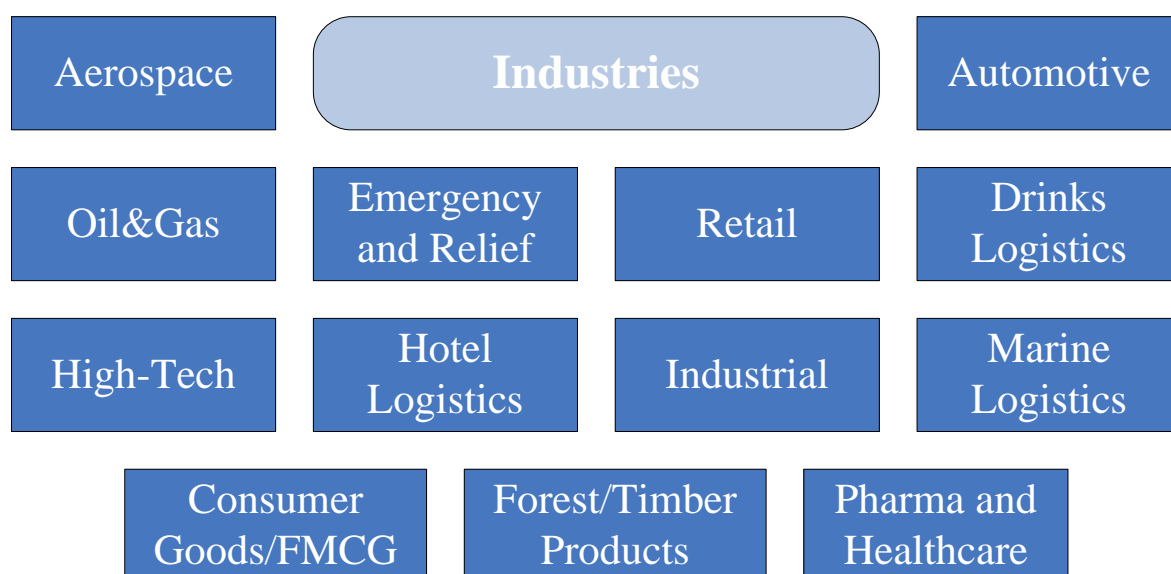


Figure 2.4 – Serviced industries by Kuehne + Nagel Ukraine

Kuehne + Nagel provides airfreight services since 2009. Services include: standard and express delivery, charters organization, transportation of outsized, dangerous and heavy cargo and shipments tracking.

Company specializes in aerospace and pharma industries and develop customized solutions for specific projects. Operations are certified in a qualifying competence of ISO 9001, GDP and IATA CEIV Pharma.

All airfreight shipments are planned, controlled and measured in accordance with Cargo iQ procedures, meaning that shipments are monitored door-to-door within our network.

In seafreight KN delivers highly flexible services through partnerships with leading carriers, as well as easy visibility and monitoring of freight movements via KN Login, global information system. KN has over 8.000 seafreight specialists throughout the world ready to help customer find the right solution, customised to meet unique requirements.

Kuehne + Nagel Ukraine offers a full range of seafreight products to meet growing demands. Since KN is a global network and extensively experienced solutions provider, company ensures efficient handling of cargos via FCL and LCL service, break bulk, project logistics and oversized transport through a wide range of ocean carriers.

KN has reliable contracts with major shipping lines and agents in port of Odessa that give the flexibility to provide clients with extra space, regular schedule, and frequent departures from all major ports.

Kuehne + Nagel offers the unique LCL shipping of goods from the region of South Asia to Ukraine and offers the special prices for cargo transportation for new customers - the first 5 m³ with 20% discount.

All goods and cargoes are consolidated at Kuehne + Nagel warehouses in Singapore and are shipped by sea to Ukraine. Cargo transportation is carried out once a week and reaches the destination in app. 45-47 days. The goods will be delivered to the Kuehne + Nagel warehouse in Kiev.

Services special features:

- Weekly LCL service delivery of goods from the Asia-Pacific region to Ukraine;
- Consolidation of cargo in Singapore;
- Delivery to Odessa or Black Sea ports;
- Container delivery under customs control from a port in Ukraine to a customs warehouse in Kiev, free storage - 3 days;
- Door-to-door delivery throughout Ukraine from a customs warehouse in Kiev (including transportation under customs control);
- Delivery time from the port of Singapore to the customs warehouse in Kiev 30-32;
- A full range of customs brokerage services.

In overland highly experienced road freight teams, supported by a premium global network, guarantee clients optimised and flexible solutions for any challenges they might face. With instant track and trace visibility as well as proactive updates, clients have everything they need to make logistics process a painless experience. KN proposes LTL and FTL services, groupage service.

Also KN has specialised solutions for specific requirements:

- Pharma & Healthcare: specialised, end-to-end secured and temperature controlled solutions.
- High-value products: end-to-end, secure solutions with maximum risk mitigation and proactive intervention.
- Exhibitions, trade fairs and other events: individual, worldwide event logistics and coordination according to your needs.

International Overland services include

- Export / Import / Transit;
- FTL, LTL, Groupage services;
- Cargo consolidation, Groupage via hubs in Europe;
- Oversized cargo transportation;
- Dangerous goods transportation;
- Liability and freight insurance;

- Precise, reliable transit time and rates providing optimal logistics planning;
- Online tracking and tracing.

Domestic Overland offer:

- Delivery all over Ukraine within 12 - 36 hours;
- Micro distribution;
- Transportation of oversized loads;
- Regular / seasonal / express delivery;
- Delivery of palletized / not palletized goods.

The Kuehne + Nagel Contract Logistics department in Ukraine operates shared and dedicated warehouses with total space 109 000 m². KN is delivering full scope of services (Warehousing, Value Added Services, Distribution) for clients.

Integrated Logistics provides industry specific end-to-end solutions and logistics management services across multiple modes and geographies. The solutions are driven with an emphasis on value created by simplifying supply chain complexity, reducing inventory and logistics costs, and maximizing service levels. Integrating these improvement solutions with collaborative concepts creates a competitive advantage for our customers within the market place. These solutions have a big potential to help Kuehne + Nagel overall to expand the business, driving innovation and by being profitable with helping customers to meet their business growth or optimization targets. Integrated logistics covers all transport and service modes across the customer's supply chain.

2.2 Analysis of the Kuehne + Nagel business indicators

According to final year report [24] Kuehne + Nagel once again improves results in 2019. Kuehne + Nagel, one of the world's leading logistics providers, has once again achieved record results in 2019. With the current state of the global economy, that's anything but a given. The estimated growth in the global economy last year

was just 2.4% due to persistently low trading and investment activities – the lowest rate of expansion since the financial crisis over ten years ago. Geopolitical tensions and disagreements over trade policy dampened international investment and caused a certain amount of uncertainty. Global trade increased by just 1.0% in 2019, compared with 3.7% in the previous year. [23]

Kuehne + Nagel’s net turnover was up 1.5% in the 2019 business year, putting it well above market growth (see Table 2.1).

Table 2.1 – Performance indicators of KN

No	Indicators	2019	2018	2019/2018
1	Turnover, CHF million	25295	24825	101,9%
3	Net turnover, CHF million	21094	20774	101,5%
4	Gross profit, CHF million	7981	7709	103,5%
5	Total expenses, CHF million	(6152)	(6500)	94,6%
6	EBITDA, CHF million	1829	1209	151,3%
7	EBIT, CHF million	1061	987	107,5%
8	EBIT in per cent of gross profit (conversion rate)	13,3	12,8	103,9%

The Company also delivered on the earnings side, with EBIT up by a very respectable 7.5%. In fact, EBIT was above the billion mark for the first time in the Company’s history. Thanks to Kuehne + Nagel’s focus on customer service and cost efficiency, on the constant improvement of its operational systems and their further digitalisation, the company managed to increase its market share again across all business units. Overall, Kuehne + Nagel once again achieved its strategic goal of growing twice as fast as the market in its transportation networks.

In 2019, the Kuehne + Nagel Group increased the number of employees year-on-year by 1,261 or 1.5 per cent from 81,900 to 83,161 employees. The number of full time equivalents of employees reached 78,448 versus 77,416, which is an increase of 1,032 or 1.3 per cent.

Seafreight volumes increased by 3,6 percent to 4,861,000 TEUs (see Table 2.2). Services for temperature controlled cargo in reefer containers and order management business have significantly contributed to the growth. Customers from the pharma and healthcare industry use Kuehne + Nagel to handle temperature-sensitive

products. The exports from Asia to Europe and the US as well as the intra-Asia trade contributed to the strong volume growth. In 2019, EBIT increased by 9,1 per cent compared to the previous year, while the ratio of EBIT to gross profit (conversion rate) increased to 29,6 per cent (2018: 28,2 per cent).

Table 2.2 – Performance indicators of KN Seafreight

No	Indicators	2019	2018	2017	2016
1	Turnover, CHF million	9751	9366	8805	7981
3	Gross profit, CHF million	1539	1482	1416	1416
4	Total expenses, CHF million	(1054)	(1041)	(979)	(951)
5	EBITDA, CHF million	485	441	437	465
6	EBIT, CHF million	456	418	414	445
7	EBIT in per cent of gross profit (conversion rate)	29,6	28,2	29,2	31,4
8	Number of operating staff	10535	10025	9543	9154
9	TEUs, thousands	4861	4690	4355	4053

Due to the global reduction in Airfreight volumes, the Group had to record decreased volumes by 5,7 per cent to 1,643,000 tons, therewith holding the number two position as global airfreight provider (see Table 2.3). EBIT-to-gross-profit margin decreased to 25,0 per cent in 2019 (2018: 29,5 per cent). EBIT declined by 7,3 percent compared to the previous year.

Table 2.3 – Performance indicators of KN Airfreight

No	CHF Million	2019	2018	2017	2016
1	Turnover , CHF million	5465	5620	4759	3935
2	Net turnover, CHF million	4653	4870	4080	3347
3	Gross profit, CHF million	1317	1202	1036	964
4	Total expenses, CHF million	(923)	(822)	(703)	(649)
5	EBITDA, CHF million	394	380	333	315
6	EBIT, CHF million	329	355	313	298
7	EBIT in per cent of gross profit (conversion rate)	25,0	29,5	30,2	30,9
8	Tons, thousands	1643	1743	1570	1304

In 2019 the Group was leveraging the industry-specific expertise acquired through Quick International Courier (as per 31.12.2018) and gained a substantial new customer base. Quick International Courier is a global market leader in time critical

shipments and serves mainly the pharma and healthcare as well as the aerospace industry.

The Group has developed world class expertise in industry- and product-specific supply chain services through various strategic programs. Organic growth in areas such as perishables, pharma, and aerospace logistics, together with selected bolt-on acquisitions, continue to ascertain the Group’s leading position.

Visualization of seafreight and airfreight volume development gives us possibility to see growth or decline rate (Fig. 2.5).

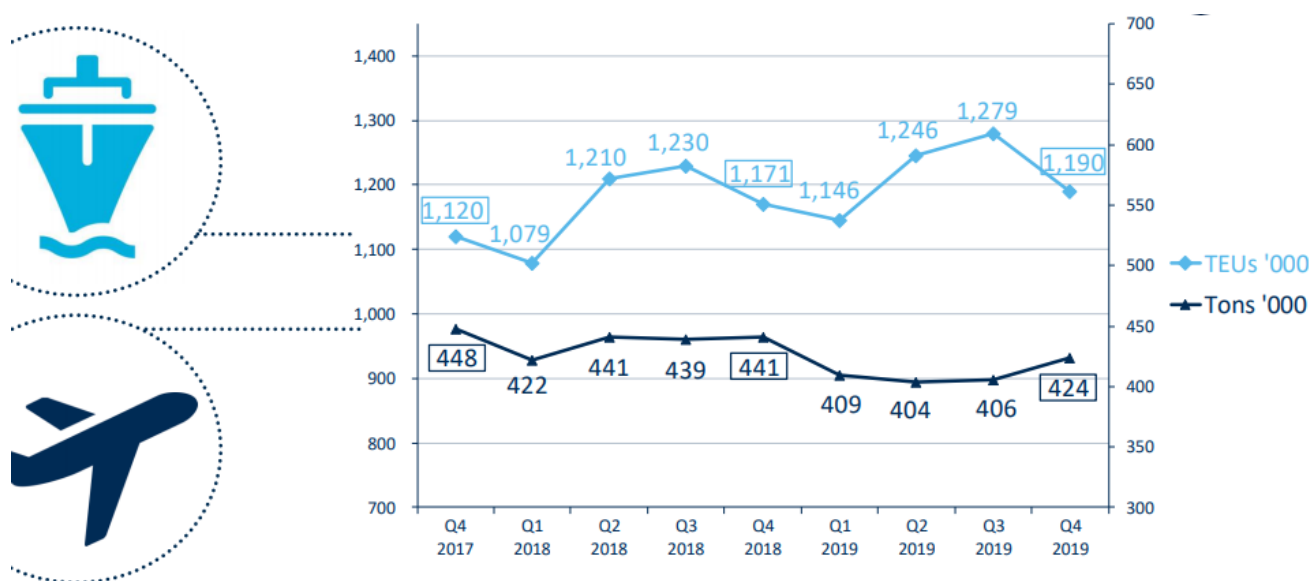


Figure 2.5 – Volume development of seafreight and airfreight

On the other hand the year-on-year unit profit of seafreight and airfreight are approximately the same (see Fig. 2.6, 2.7).

Overland increased its net turnover by 1,7 percent in 2019, with a strong performance of its land transport activities in Europe (see Table 2.4). The Group continues to expand its service offering through the acquisition of the Joebstl Group in Austria strengthening the access to the eastern European market and the acquisition of Rotra in Belgium and the Netherlands to further intensify the Europe-wide Overland transportation.

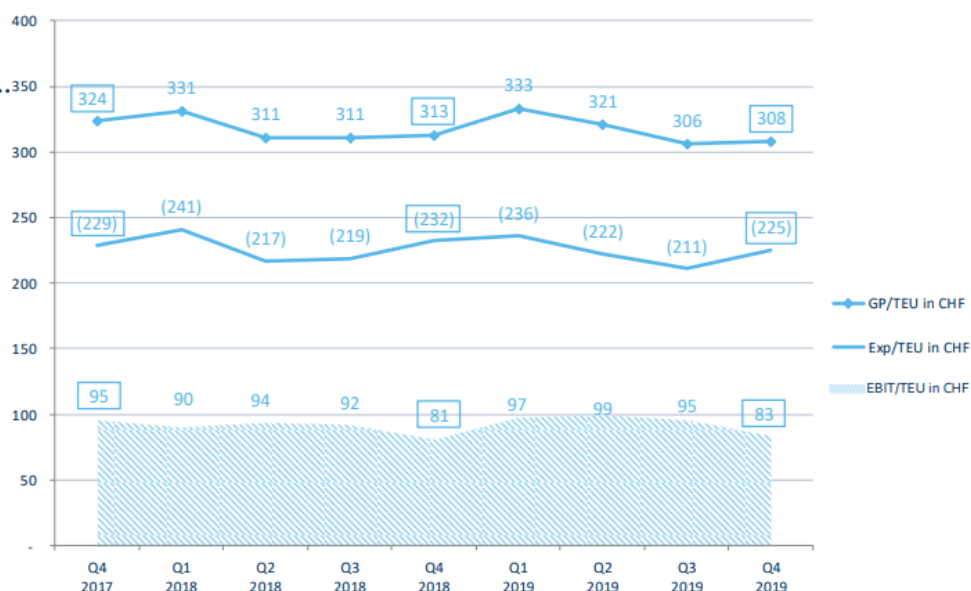


Figure 2.6 – Increased unit profit of sea freight

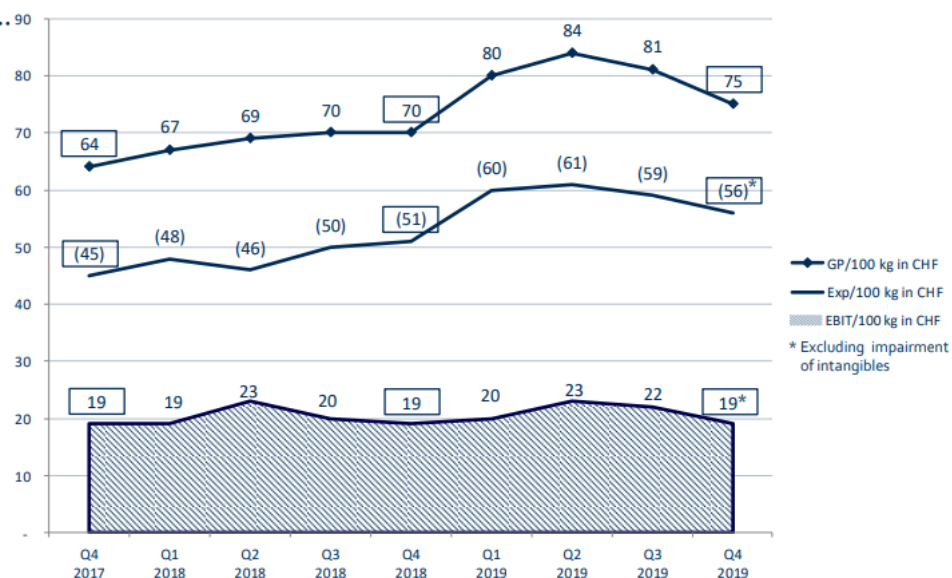


Figure 2.7 – Unit margins and profits resilient of airfreight

Table 2.4 – Performance indicators of KN Overland

Nº	Indicators	2019	2018	2017	2016
1	2	3	4	5	6
1	Turnover, CHF Million	4102	4009	3356	3130
2	Net turnover, CHF Million	3586	3526	3117	2898
3	Gross profit, CHF Million	1121	1088	952	895
4	EBITDA, CHF Million	136	118	92	70
5	EBIT, CHF Million	78	76	49	28
6	EBIT in per cent of gross profit (conversion rate)	7,0	7,0	5,1	3,1
7	Number of operating staff	8781	8456	8040	7894

The key performance indicator EBITDA to net turnover margin improved to 3,8 percent from previous year's 3,3 percent. EBIT increased to CHF 78 million (2018: CHF 76 million). The dynamic by quarters is presented on the Fig.2.8. With the expansion of services to industry-specific solutions, Overland has significantly contributed to the success of the Group's integrated logistics offering.

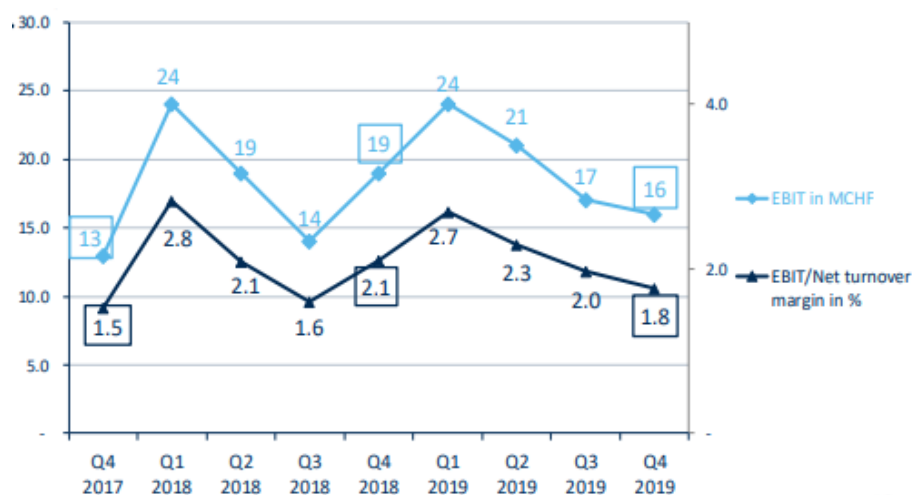


Figure 2.8 – Overland performance dynamic by quarters

The focus on specialised end-to-end solutions for industries such as automotive, high-tech, consumer goods, aerospace, pharmaceuticals, healthcare, and e-commerce fulfilment led to numerous new customer contracts. This resulted in a (net of currency impact) net turnover growth of 5,8 percent for 2019 (see Table 2.5).

Table 2.5 – Performance indicators of KN Contract Logistics

Nº	Indicators	2019	2018	2017	2016
1	2	3	4	5	6
1	Turnover, CHF Million	5977	5830	5300	4939
2	Net turnover, CHF Million	5398	5249	4814	4466
3	Gross profit, CHF Million	4004	3937	3619	3275
4	EBITDA ¹ , CHF Million	814	270	288	260
5	EBIT, CHF Million	198	138	161	147
6	EBIT in per cent of gross profit (conversion rate)	4.9	3,5	4,4	4,5
7	Number of operating staff	43661	43694	39957	35866
8	Warehousing and logistics space in sqm	11388643	11587597	10631779	10021688

End of the Table 2.5

1	2	3	4	5	6
9	Idle space in sqm	336696	343081	283690	364035
10	Idle space in percent	3,0	3,0	2,7	3,6

¹2019 includes one-off and IFRS 16 impact of CHF 556 million at EBITDA and one-off and IFRS 16 impacts of CHF 77 million at EBIT level

Visualization of operational performance dynamic is presented on the Fig. 2.9.

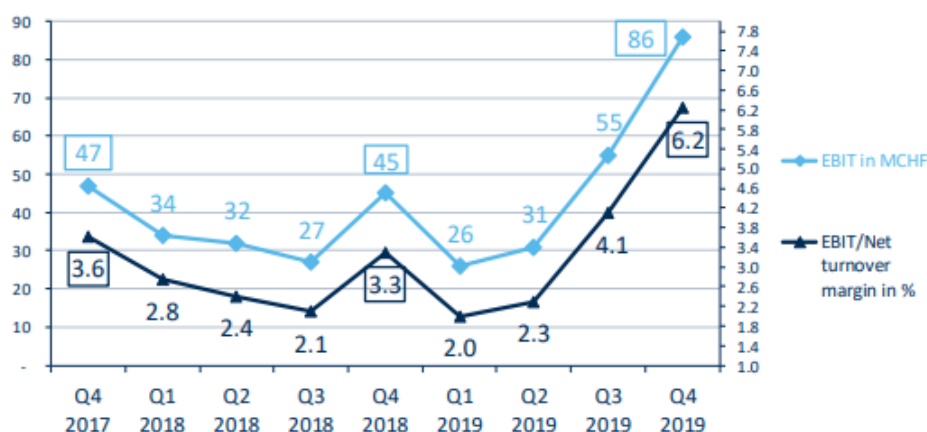


Figure 2.9 - Operational performance dynamic of contract logistics

More than 100 new logistics projects were implemented for customers in 2019, enabling the Company to manage 11,4 million square meters of warehouse and logistics space worldwide. At the same time the Group has focused on a customer portfolio that allows leveraging the other business units and makes use of scalable and sustainable logistics solutions. This has led to the reshaping of business size in some European countries including adaption of the real estate footprint. This initiative will continue in the years 2020 and 2021. The restructuring of the product, real estate, and customer portfolio as well as the impact from the new accounting standard IFRS 16 Leases in 2019 led to an increase of the EBITDA to net turnover margin to 15,1 percent versus 5,1 percent in 2018; EBIT increased by 43,5 per cent.

Kuehne + Nagel further strengthened its global leading position in the field of integrated logistics. The Group offers specialised end-to-end supply chain management solutions, which are managed from Logistics Control Towers and performed in seamless operation with other business units, supporting customers to

improve their value chain. Integrated logistics experts develop, implement and manage solutions that streamline the customer's supply chain to make it lean, agile and demand-driven.

According to the results of the first quarter, the Kuehne + Nagel stated significantly reduced volumes in all business units and increased volumes of pharma and e-commerce due Covid-19. As a result of the coronavirus pandemic, business volumes declined sharply in the first quarter of 2020. Kuehne + Nagel Group's net turnover, gross profit and earnings were significantly below last year's levels. Furthermore, currency fluctuations had a significant negative impact.

Net turnover of Q1 2020 is 4912 CHF million, decrease compared to the Q1 2019 by 325 CHF million (6,2%). Gross profit of Q1 2020 is 1878 CHF million, decrease compared to the Q1 2019 by 100 CHF million (5,1%). EBIT of Q1 2020 is 184 CHF million, decrease compared to the Q1 2019 by 58 CHF million (24,0%) (see Table 2.6).

Table 2.6 – Performance indicators of KN Q1 2020

No	Indicators	Q1 2020	Q1 2019	Change
1	Net turnover, CHF Million	4912	5237	(6,2%)
2	Gross profit, CHF Million	1878	1978	(5,1%)
3	EBITDA, CHF Million	378	418	(9,6%)
4	EBIT, CHF Million	184	242	(24,0%)
5	Earnings for the period	139	181	(23,2%)

In the KN business units such processes were observed in the first quarter:

- Sea Logistics: reduced exports from Asia;
- Air Logistics: special charters partially compensated volume decline;
- Road Logistics: lower demand in Europe and North America;
- Contract Logistics: restructuring progressed successfully.

With a significant double-digit decline in volume demand to and from China, the business unit Sea Logistics was affected by the impacts of the coronavirus crisis at an early stage. On the other hand, reefer shipments (pharma, amongst others) and export volumes from Latin America (perishables in particular) developed well. With

1,075 million standard containers (TEU), 71,000 fewer units were transported in the first quarter than in the same period last year (-6.2%) (see Fig. 2.10).

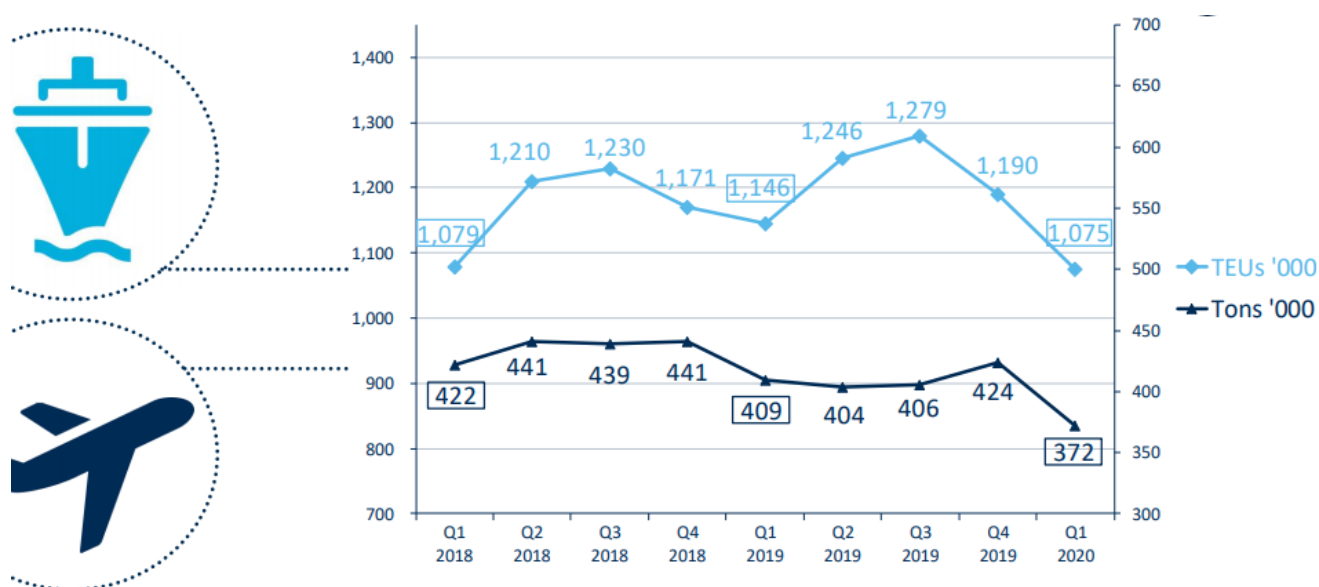


Figure 2.10 – Volume of Sea and Air Logistics by quarters

Accordingly, the business unit’s net turnover fell by 6,9% to CHF 1,7 billion and gross profit by 9,9% to CHF 344 million. EBIT fell by 29,5% to CHF 79 million. Exchange rate effects had a negative impact of 5,3% (net turnover) and 3,6% (EBIT) (see Table 2.7).

Even in the current environment, customer interest in CO2-neutral Sea Logistics solutions remained high. As part of Kuehne + Nagel's Net Zero Carbon programme, all CO2 emissions from less-than-container shipments (LCL) have been offset since the beginning of the year.

Table 2.7 – Performance indicators of KN Seafreight Q1 2020

Nº	Indicators	Q1 2020	Q1 2019	Change
1	Net turnover, CHF Million	1724	1852	(6,9%)
2	Gross profit, CHF Million	344	382	(9,9%)
3	EBIT, CHF Million	79	112	(29,5%)

The business unit Air Logistics was particularly affected by the coronavirus pandemic from March onwards, when a large number of passenger flights were

cancelled on the supply side. Global airfreight capacity fell by around 60% in just a few weeks. On the demand side, the lockdowns in China, Europe and finally America led to a sharp drop in consumption resulting in lower airfreight volumes. In contrast, short-term charter solutions for pharma and time-critical transports were in greater demand.

At 372,000 tonnes (see Fig. 2.10), airfreight volume in the first quarter was 9% below the same period of the previous year. Less pronounced was the 6,8% decline in net turnover to CHF 1,1 billion and the 5,8% decline in gross profit to CHF 307 million. EBIT fell by 11,3% to CHF 71 million. Currency effects had a negative impact of 5,0% on both net turnover and EBIT (see Table 2.8).

Table 2.8 – Performance indicators of KN Airfreight Q1 2020

No	Indicators	Q1 2020	Q1 2019	Change
1	Net turnover, CHF Million	1091	1170	(6,8%)
2	Gross profit, CHF Million	307	326	(5,8%)
3	EBIT, CHF Million	71	80	(11,3%)

Significant progress was made in the implementation of the Group's own Transport Management Solution AirLOG and other digital platforms.

The business unit Road Logistics had a solid start into the new business year. From March onwards, however, volumes in Europe (especially France, Great Britain and Italy) and North America (primarily the intermodal business) declined significantly. All sectors were affected, with the exception of e-commerce and pharma.

In the first quarter of 2020, the business unit's net turnover fell by 4,2% year-on-year to CHF 863 million and gross profit declined by 1,4% to CHF 281 million. EBIT fell to CHF 17 million (see Fig.2.11). Currency effects had a negative impact of 4,8% on net turnover and 4,2% on EBIT (see Table 2.9).

In Europe, the two acquisitions Rotra (Belgium and Netherlands) and Joebstl (Austria and Eastern Europe) were integrated as planned. Performance in Asia

remained encouraging, with Kuehne + Nagel reporting increased demand for its digital platform solution eTrucknow.

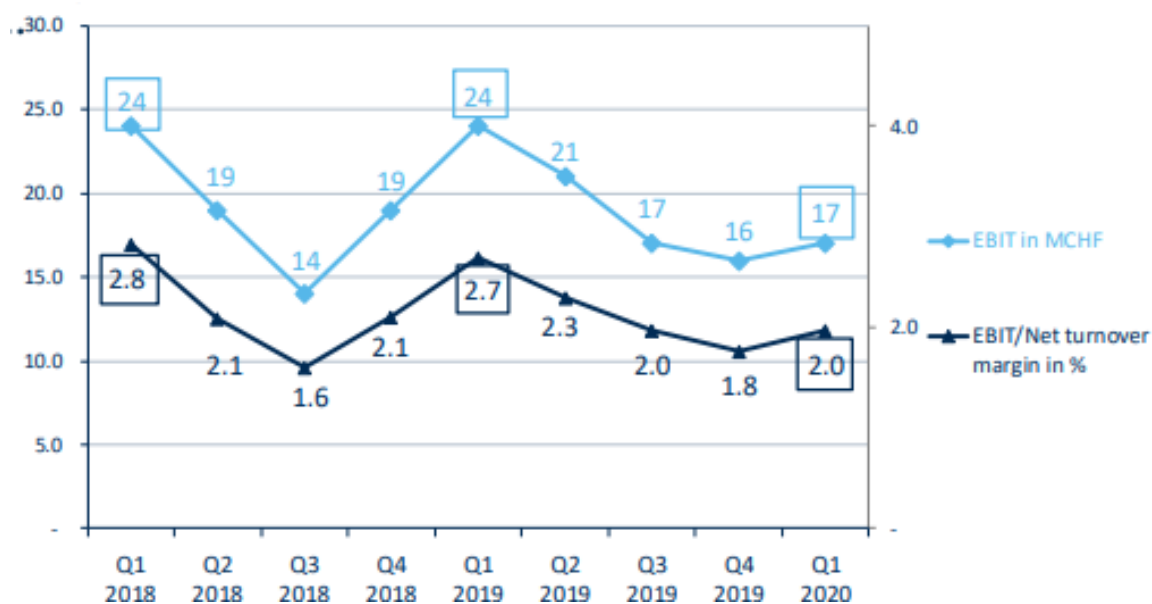


Figure 2.11 – EBIT dynamic of KN Overland by quarters

Table 2.9 – Performance indicators of KN Overland Q1 2020

No	Indicators	Q1 2020	Q1 2019	Change
1	Net turnover, CHF Million	863	901	(4,2%)
2	Gross profit, CHF Million	281	285	(1,4%)
3	EBIT, CHF Million	14	24	(29,2%)

In the business unit Contract Logistics, the supply of automotive production and retail was particularly affected by the impacts of the coronavirus. However, demand for basic goods, pharma and e-commerce services increased.

In the first quarter of 2020, the business unit’s net turnover fell by 6,1% to CHF 1,2 billion compared with the same period of the previous year, gross profit by 4,0% to CHF 946 million and EBIT by 34,6% to CHF 17 million. Currency effects had a negative impact of 4,9% on net turnover and 3,8% on EBIT (see Table 2.10, Fig. 2.12).

Table 2.10 – Performance indicators of KN Contract Logistics Q1 2020

No	Indicators	Q1 2020	Q1 2019	Change
1	2	3	4	5
1	Net turnover, CHF Million	1234	1314	(6,1%)
2	Gross profit, CHF Million	946	985	(4,0%)
3	EBIT, CHF Million	17	26	(34,6%)

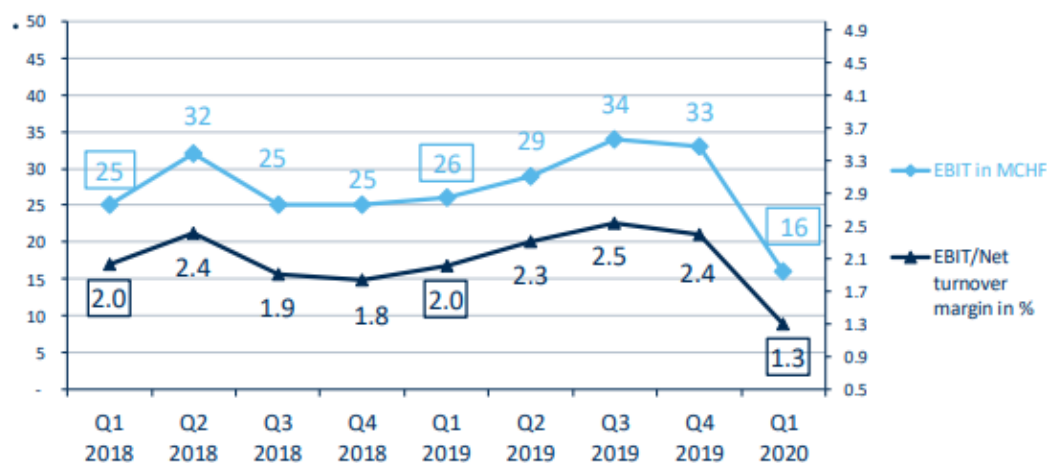


Figure 2.12 - EBIT dynamic of KN Contract Logistics by quarters

The environment required a rapid and comprehensive adjustment of resources, with added support from further progress in restructuring Contract Logistics. Over the quarter, 90% of all Kuehne + Nagel distribution centres worldwide operated without interruption.

2.3 The place of Kuehne + Nagel on the logistics services market

The freight forwarding market worldwide shows steady growth (see Fig. 2.13) [25]. With supply chains becoming more complex, shippers will increasingly need to outsource their logistics operations, rather than investing in new logistics technology to bring those functions in house. [26]

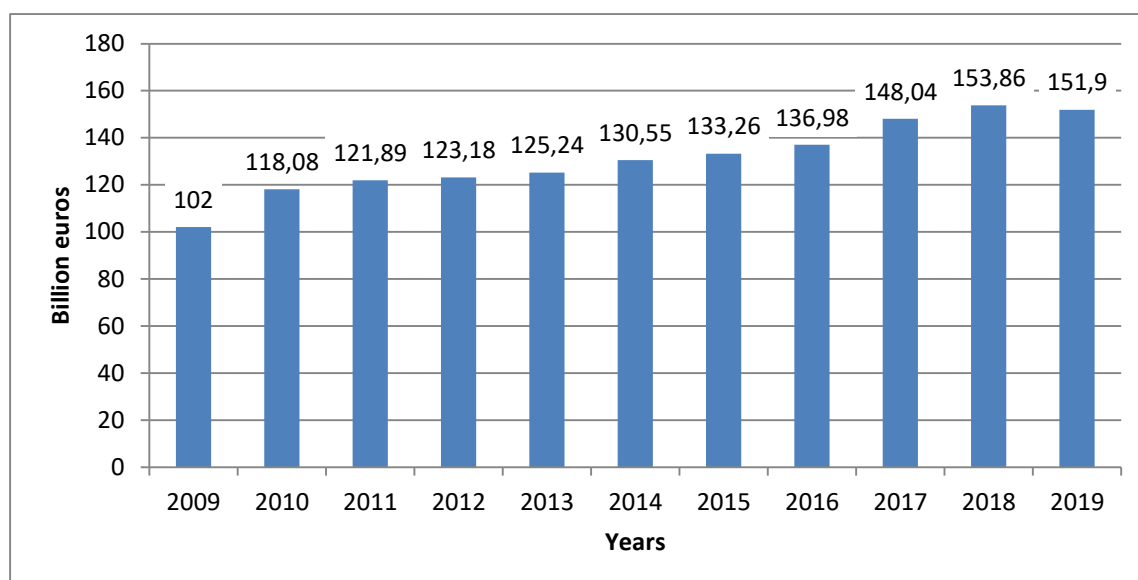


Figure 2.13 – Size of freight forwarding market worldwide from 2009 to 2019

In 2018 three-top freight forwarding companies were DHL Supply Chain & Global Forwarding, Kuehne + Nagel and DB Schenker (see Table 2.11).

Table 2.11 - Global Freight Forwarders List, ranked by 2018 Logistics Gross Revenue/Turnover and Freight Forwarding Volumes [16]

Rank	Provider	Gross Revenue, US\$ Millions	Ocean, TEUs	Air, metric tons
1	2	3	4	5
1	DHL Supply Chain & Global Forwarding	28,120	3,225,000	2,150,000
2	Kuehne + Nagel	25,320	4,690,000	1,743,000
3	DB Schenker	19,968	2,203,000	1,304,000
4	DSV	12,411	1,442,348	689,045
5	Sinotrans	10,549	3,740,000	530,100
6	Expeditors	8,138	1,167,820	1,011,563
7	Panalpina	6,156	1,484,100	1,038,700
8	Nippon Express	18,781	686,206	899,116
9	UPS Supply Chain Solutions	9,814	600,000	935,300
10	Bolloré Logistics	5,415	873,000	690,000
11	C.H. Robinson	16,631	1,000,000	225,000
12	CEVA Logistics	7,356	786,600	476,600
13	Kerry Logistics	4,875	1,196,607	409,127
14	GEODIS	6,645	798,173	363,451
15	Hellmann Worldwide Logistics	3,646	901,698	578,007
16	Kintetsu World Express	5,310	700,043	600,849
17	Yusen Logistics/NYK Logistics	4,715	815,000	380,000
18	Agility	4,400	710,000	415,000
19	DACHSER	7,602	536,900	344,900

End of Table 2.11

1	2	3	4	5
20	Hitachi Transport System	6,283	532,000	300,000
21	Damco/Maersk Logistics	6,082	639,132	175,502
22	Toll Group	5,980	503,400	106,600
23	XPO Logistics	10,850	131,500	72,600
24	Logwin	1,346	600,000	180,000
25	Mainfreight	2,038	342,741	127,418

Traditionally, logistic companies in Ukraine are present mainly in Kiev and occupy large areas, but in the regions this trend is represented by much lower indicators of both the area and the diversity of companies themselves. This is primarily due to the weaker development of regional markets.

As for Ukrainian logistics market main competitors are such companies as DHL Ukraine, Zammler, Raben, Ekol, FM Logistic, Logistic Plus.

KN works with clients in B2B mode, so company provides services to other businesses, not ultimate consumers. This field of activity is focused on obtaining benefits (profits) from the provision of services or the sale of goods, where the “objects” are services or goods, and the “subjects” are organizations that interact in the market field. Here organizations and (or) individual entrepreneurs act as a “seller” and “buyer” of services or goods.

Top-clients are such companies as Mondelez Corporation, Toyota Ukraine, Auchan, Lenovo, Budpostach, Indar, Indesit, Bosh, JTI, B.A.T. – Prulucky, Kraft foods, H&M, Samsung, Jacobs, Loreal, Inditex, Intertop, Claas, BIC, Leroy Merlin and others.

2.4 Chapter 2 summary

In second chapter of bachelor thesis was analysed activity of logistics provider Kuehne + Nagel. This is big international enterprise that has lead position on the freight forwarding and logistics market. Company has 130 years business history and

over the years has accumulated tremendous experience. Branches of Kuehne + Nagel are presented worldwide in over 100 countries and the number of employees is approximately 83,000 persons. Kuehne + Nagel specializes in seafreight, airfreight, contract logistics and overland businesses.

Services are provided by Kuehne + Nagel lies in various industries: aerospace, automotive, oil&gas, emergency and relief, retail, drink logistics, hotel logistics, consumer goods/FMCG, pharma and healthcare, industrial, marine logistics and forest products. In Ukraine Kuehne + Nagel started working in 1992 and now company has achieved strong position on the market. Head office is located in Kyiv, also offices are presented in Lviv and Odessa. Competitors in the market are DHL Ukraine, Zammler, Raben, Ekol, FM Logistic, Logistic Plus.

Analysis of Kuehne + Nagel business and financial activity has shown stable growth till 2019. In all business units such indicators as net turnover, gross profit EBITDA and EBIT increased in compare with previous years. First quarter of 2020 was hard for all world due pandemic of COVID-19. A lot of companies met challenges for their activities: volume decline of sea, air and road logistics due industrial production and trade volumes weakened significantly. As a result Kuehne + Nagel Group's net turnover, gross profit and earnings were significantly below last year's levels. In UK was sold major part of contract logistics to XPO Logistics.

But in this crisis situation, Kuehne + Nagel maintained its operational performance, closely managed a number of specialty businesses and won new customers. In the case of basic commodities and pharmaceuticals, transport volumes were maintained at a respectable level. Company will face major challenges in the coming months, but is well positioned in view of its customer proximity, agility and digital offerings. A high level of liquidity characterises the company's solid financial strength.

CHAPTER 3

DEVELOPMENT OF PROPOSALS FOR THE IMPLEMENTATION OF BLOCKCHAIN TECHNOLOGY TO IMPROVE THE QUALITY OF LOGISTICS SERVICES

3.1 Sales process organization in Kuehne + Nagel

When organizing the sale of logistics services, there are several key points that ensure the efficiency of the process [5]. The first key point is sales staff. A good sales manager does not need additional motivation, all he needs is to set clear goals and determine his responsibilities. In the case of logistics services sales, the goal is a sales plan for the year, which is divided by month. It may not be flexible in a turbulent market environment, but in the most cases 3PL companies work with B2B clients, which will not easily restructure its business processes. Based on an understanding of how customers build a business, sales department applies specific approaches to planning and management.

Dynamic stability sufficient for growth is maintained. This conditional stability allows us to lay out the large-scale goals of the company into comprehensible components for each seller. Therefore, sales managers, knowing their plans for the year and being self-motivated individuals, need only provide them with critical tools: mobile connection, flexible work hours, a corporate car and a laptop. Supporting the corporate spirit and team-building activities, which are often discussed at trainings on sales development, are achieved by creating and supporting a favorable background in the team through comfortable working conditions, with healthy competition among colleagues and attentive leadership. Salesmen are creative people, “stars” who need faith in them, factors that would inspire and motivate them. Leadership in such an environment should definitely be inspirational. In addition, it is necessary to observe flexible working conditions, focused on monitoring the result, not the process.

Also, in sales process performance indicators and salaries are important. The main goal is sales through personal contact with customers. In the context of the specifics of the logistics services sale, it is not effective to build a sales funnel. It makes no sense to fulfill the plan for calls per day if the seller is planning a major deal. Let him spend time signing a contract with a real customer, rather than fulfilling the indicators of a sales funnel in terms of quantity.

The sales structure in the transport and logistics company depends on the goals, strategies and approaches. You can assign VIP customers to individual sales managers who will guide him on all matters from freight rates to analytics at points of sale. In Kuehne + Nagel company, the sales structure is arranged in a slightly different way: there is a sales department and a customer service department. Two of these structures work in a tight bond. The sales department is responsible for new sales. The customer service department is responsible for customer service and support. A company's customer service department is often the only personal contact a customer will have with a business.

Sellers find customers and are "responsible" for customers throughout the calendar year from the start of cooperation. That is, what the seller sold automatically goes to the customer service department, where employees deal with the client's operational issues: accept applications, issue invoices, and communicate with him on certain operational issues. This approach is optimal and gives in practice maximum efficiency. Otherwise, if the seller begins to conduct operational and technical issues of the client, he will not have time to sell in full, and most importantly - to bring a new business to the company.

The main KPIs are calls, meetings, signed contracts, replenishment of the CRM database with new contacts. On average, from 20 to 30 customers each seller has in his active portfolio of projects. In addition, each seller has his own, so-called "Dreamalist", consisting of A, B-category customers. Sellers should have 10 potential customers whose activity they monitor, pay attention to, invite to various events that our company organizes, in simple terms - they are in constant contact with such customers in order to timely respond to customer needs another form of service.

The competition in the logistics market is quite high, and this way of communicating with customers in the future gives its results. Everyone knows that you need to set clear KPIs and then everything will be transparent and doable. But in the case of a transport and logistics company, strict KPI regulation may turn out to be inoperative. All again, so it depends on the goals that we set for one or another seller. If this is project sales, sales to large complex customers, then in this case it is very important to concentrate on a large amount of information (tender documentation, preparation of cost estimates), therefore, it is simply unreasonable to require the seller to perform quantitative indicators in full.

A very important factor is providing the company with a decent salary for the sales manager. There should be no bias towards intangible motivation. A good atmosphere in the team, clear goal-setting, attention to personality and growth opportunities should only complement the basis of the “employer-employee” relationship, but not prevail. If we are more concerned about the favorable climate in the team and the control of quantitative indicators of KPI, but we absolutely cannot provide decent market income for the employee, the company will definitely lose its personnel. Sales managers this is the category of personnel that is most susceptible to rotation.

One more important point is competition and growth opportunity. Growth opportunities should be tangible to employees. When a new employee arrives, it correlates with the developed portrait of the seller. He must maintain a corporate culture, values, ideology, be active, flexible enough to build relationships, both with internal and external clients, capable of implementing sales schemes within the company's capabilities. If the company cannot show the employee the possibility of realizing his potential in the future, then he will leave the company quickly enough. Such people feel within themselves the strength to achieve more. At the beginning of a career, when newcomers come to the position of sales assistant, they are given a clear understanding of their implementation opportunities and growth prospects. They can grow to a specialist, coordinator, department head, department director. The applicant should see real examples of such opportunities. Therefore, when an

assistant is taken, he is immediately considered as a future specialist. It is very effective when the heads of departments become personnel who have grown within the company.

You should always pay attention to the burnout of employees and clearly understand the role of a leader. Of great importance is respect for employees, ownership of a common cause. Any person is pleased when they are interested in him, they see in him not just an employee of the organization, but a personality. You don't have to do much to ask how you spent the weekend, what mood, hobbies, family. Another approach that works great is to be interested in the opinion of sellers on a particular working issue. If manager is interested in seller's opinion, it gives seller a sense of self worth.

Burnout is more than just a feeling of stress at the job in that it tends to follow you from day to day, presenting itself as a feeling of dread on Sunday night (if you know you have to work again on Monday), a feeling of being unable to muster any enthusiasm or motivation for your work and a lack of pleasure in what you do. It can feel scary because you may not know how to get yourself out of this place once you're feeling burned out.

Prevention strategies against burnout [21]:

- provide clear expectations for all employees and obtain confirmation that each employee understands those expectations;
- make sure that employees have the necessary resources and skills to meet expectations;
- Provide ongoing training to employees to maintain competency;
- help employees understand their value to the organization and their contributions to the organization's goals;
- enforce reasonable work hours, including, if necessary, sending employees without good boundaries home at the end of their regular work day;
- help assess workload for those who feel pressured to remain working beyond normal business hours;

- set reasonable and realistic expectations. Organizations should be clear as to which activities require the highest standards and when it is okay to lower the bar and still meet business needs;
- encourage social support and respect within and among work teams;
- strongly encourage the taking of breaks away from the work environment.

3.2 Implementing the blockchain technology in the company's activity

Blockchain is a rule-built, continuous series of blocks containing information. In other words, it is a distributed database in which storage devices are not connected to a single server [18]. This database stores an ever-growing list of ordered records called blocks. Each block contains a timestamp and a link to the previous block. By allowing digital information to be distributed but not copied, blockchain technology has formed the basis for a new kind of Internet. The concept of block chains was proposed in 2008 by Satoshi Nakamoto. It was first implemented in 2009 as a component of digital currency - bitcoin, where blockchain plays the role of a common registry for all bitcoin transactions.

A blockchain is a special type of database [29]. Transactions are not governed by a single party, but rather the entire transaction history is recorded in a decentralised, distributed ledger. Blockchain technology is safe and robust and thus ideal for storing and processing sensitive information. The revolutionary aspect behind blockchain is that processes are not completed by one, but by many computers, simultaneously.

Bitcoin is a typical application. Trust in Bitcoin is secured through a decentralised, immutable ledger that is not run by a single company or government but by an independent community of computers all around the world.

The scheme of blockchain and how does it work is shown on the Fig. 3.1.

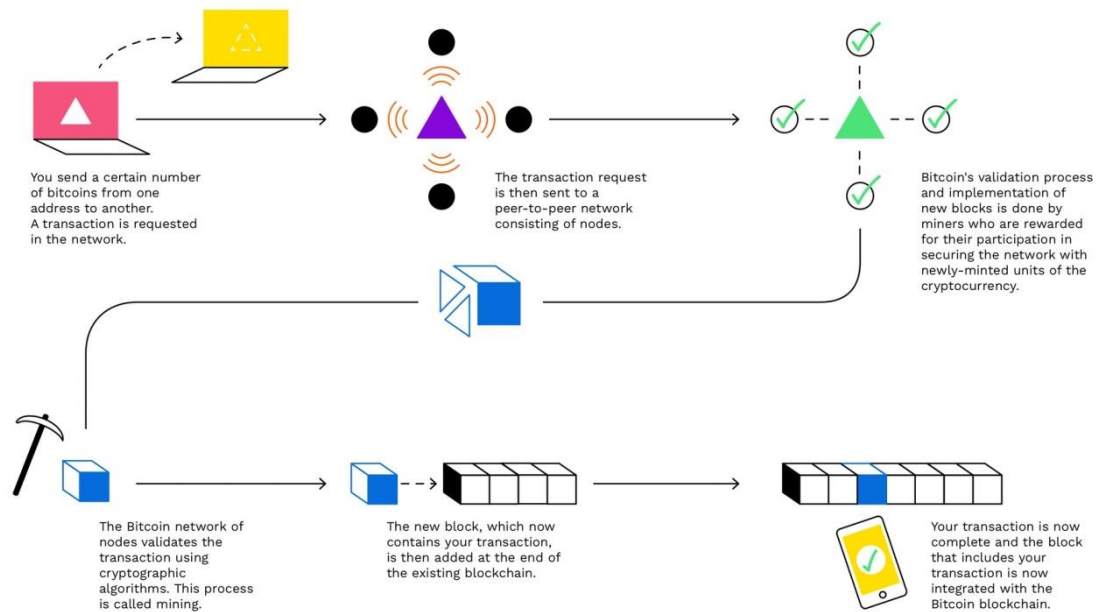


Figure 3.1 – The scheme of blockchain

Logistics is a rather complicated industry, in which there are many contractors, long supply chains, cumbersome workflow and a large impact of the human factor. Blockchain technology can make the logistics system more efficient and simple. There are seven key processes which will benefit most from implementing blockchain technology in supply chains and logistics (see Fig. 3.2).

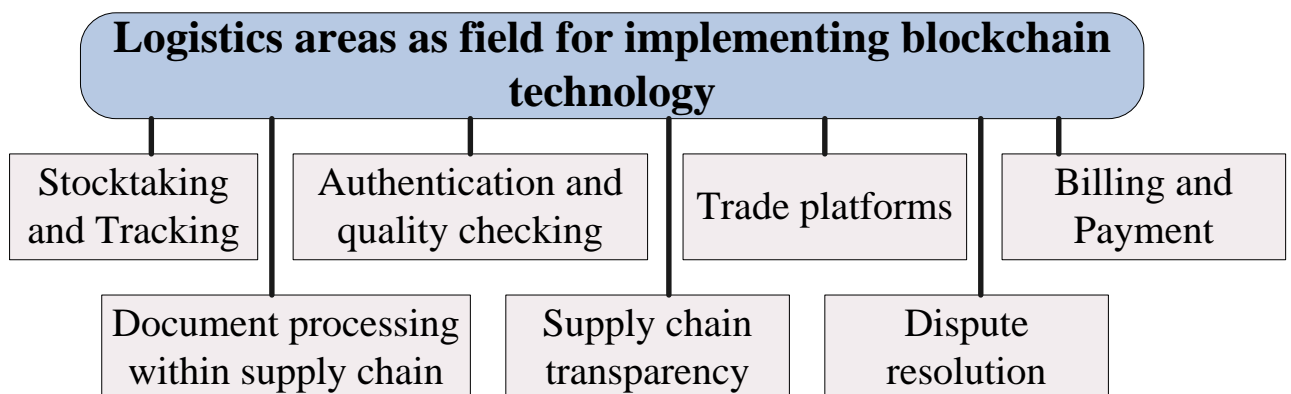


Figure 3.2 – The areas for Implementing blockchain technology

1. Stocktaking and Tracking. International logistics, which accounts for 90% of world trade uses all types of transport: rail, road, air and sea. Moreover, each participant in the supply chain uses its own local accounting system, for example,

CRM, BPM, EDM, ERP or another. Communication between these systems is usually carried out on the analog (i.e. traditional) method associated with paper documents: couriers, mail, face-to-face meetings [9]. This approach creates a lot of problems:

- a significant portion of goods, containers and vehicles are lost or not used due to the fact that they are “out of sight” of accounting systems;
- when Walmart introduced blockchain into its logistics, they monitored the traceability of mangoes from the shelf in the store to the farm on which this fruit grew. It took 6 days 18 hours and 26 minutes (with blockchain - 2 seconds);
- correcting inaccuracies in accounting requires a lot of time and money.

It is impossible to solve these problems with the traditional approach, since complex interactions and paperwork are necessary to confirm the truth of information in accounting systems and at the legal level. The blockchain technology can be used to create a unified system of digital document management in the cloud, which will allow participants in the supply chain in real time to track the location of vehicles, goods and their products, even at micro levels.

2. Authentication and quality checking. According to the Organization for Economic Co-operation and Development [48], in 2018 the global market for counterfeit products reached \$ 450 billion, which is more than the GDP of countries such as Austria or Israel. Other studies show an annual loss of 1,6 billion tons of food (worth about \$ 1,2 trillion), 40% of which is spoilage during transportation. At the same time, according to the Centers for Disease Control and Prevention estimates [22], a significant part of this spoilage falls on the consumer’s table, which in the USA alone leads to 130 thousand hospitalizations and 3 thousand deaths. Blockchain technologies allow you to track the origin of goods from the counter in the store to a specific manufacturer: factory, farm, enterprise, person. And this data has a large degree of truth, since each consignment of goods (or each individual product, if it is something large and / or expensive) is equipped with an RFID tag that constantly monitors the location of the product and the interaction between participants in the supply chain.

3. Document processing within supply chain. A typical delivery scenario involves about 30 parties: shippers and consignees, 3PL, carriers, government services, banks, insurers and others. Moreover, during the delivery of only one consignment of goods, they exchange more than 200 paper messages: POD (delivery confirmation), invoices, BOL (bills of lading). The cost of servicing this paper work is \$ 300, or 10-15% of the cost of transportation. According to the World Economic Forum, reducing bureaucratic barriers to trade in logistics and supply chains will increase global GDP by 5% and global trade by 15%. Smart contracts automate most of the workflow and business processes. In addition, the distribution registry will reduce errors, shorten delivery times, and detect fraud.

4. Billing and Payment. the shipment of goods from one country to another creates a supply chain in which about 30 organizations participate, interacting with each other more than 200 times. A significant part of these interactions is billing and payment. In the traditional approach, these financial transactions are complex, require a lot of time and bureaucratic efforts, which creates the conditions for manipulation, fraud and generates a lot of mistakes. The technology allows you to automate the billing and payment process by linking these calculations to a specific action, for example, making an entry about the completion of the shipment of goods or the passage of a vessel, container and / or cargo through the border of a country or port. IoT sensors are responsible for tracking actions, and smart contracts are responsible for process automation.

5. Trade platforms. In the current state, the freight market is inefficient and incomprehensible. There are no clear standards and rules that would address the issues of liability of the parties for compliance with transactions and explicit or implicit fraud. In addition, this market is opaque, which quite often leads to unpredictable changes in freight costs, despite the absence of significant changes in supply and demand. Blockchain technology and smart contracts can be used to create a fair trading platform where companies can hire carriers in the shortest possible time on understandable and transparent conditions. At the same time, since all the terms of the contracts will be pre-registered in smart contracts, the level of responsibility of

companies will increase, so it will occur immediately automatically, and not after long negotiations and / or a decision of an arbitration court.

6. Supply chain transparency. A big problem in the supply chain is the low level of reliability of the information being verified, which is a direct result of the lack of transparency in the industry. For example, due to the lack of transparency in the formation of the cost of transportation (purchase, transportation, storage), many companies overpay for the delivery of their goods to the consumer, and due to the lack of the shipper's ability to control the delivery process, “gray” schemes and smuggling flourish in the market and counterfeit. Since all data is stored on the blockchain, each participant in the supply chain can at any time check the information for each vessel, container and / or cargo, which reduces the likelihood of discrepancies in the documentation of different parties.

7. Dispute resolution. Every day, due to disputes about payments in the logistics industry, operations totaling more than \$ 140 billion are “frozen”. For example, this happens when the shipper informs the transport company that it sent the wrong invoice or when the parties forgot to indicate who pays certain fees. Such discrepancies bind cash flows, increase the costs of companies and reduce their liquidity. To solve them, they usually involve independent auditors who find out all the circumstances and give their recommendations, which usually drags on the process to 42 days. If all the conditions and actions are recorded on the blockchain, then this eliminates most of the problems in the event of a dispute. Participants in the conflict can verify the necessary data on the blockchain and, in accordance with the contract (or the User Agreement), decide who is right and what to do.

Implementing of blockchain technology can be considered not only from the point of view of increasing the efficiency of processes, but also from the point of view of sales management. Sales management in a logistics company is more about working with customers, retaining them as regular customers. For this, the company is working to optimize processes so that the client receives a quality service at a competitive and affordable price. By introducing technology that will help reduce costs in the supply chain, we will not only be able to increase our profits, but also

offer the client a better price. In addition, by increasing transparency in the supply chain, the logistics company recommends itself as a reliable partner, thereby increasing customer loyalty.

In the Kuehne + Nagel company blockchain technology was launched in 2018 in the field of seafreight (Europe). The main goal of this project was to digitize more than 20 different documents that were previously used exclusively in paper form and to find out how this affects the movement of goods from the shipper to the consignee. The results were more than positive. The solution allows you to speed up the entire flow of transport documents, reduce the need for data entry by 80%, simplify changes to the delivery process, simplify the verification required for cargo, and reduce the burden and risk of fines for compliance with customs rules charged to customers

In Ukraine, it is advisable to start implementing this technology in the field of seafreight, as the company already has experience in other offices. Based on the results of this project, it will be possible to consider the blockchain implementing in contracted logistics.

Like any project, the implementation of blockchain technology can be logically divided into several stages (see Fig. 3.3).

At the first stage, the project and its goals are described in detail, the financial, time and human resources necessary for its implementation are evaluated. Project outcomes correlate with potential risks. If necessary, appropriate changes are made to the project and after that the project is finally recommended for implementation.

The second stage includes the main part of the implementation process. At this stage, the team is developing and publishing a test version of the blockchain project. A special personal account for programmers is being formed, where standard blockchain algorithms, a single development environment, as well as an automated error checking and detection system will become available to specialists. At this stage, a full-fledged project functionality is being formed, where, along with a preliminary assessment of the characteristics of the implementation of the blockchain, enterprises will be able to form orders for the implementation of the blockchain and get the first results as part of the test mode of the project.

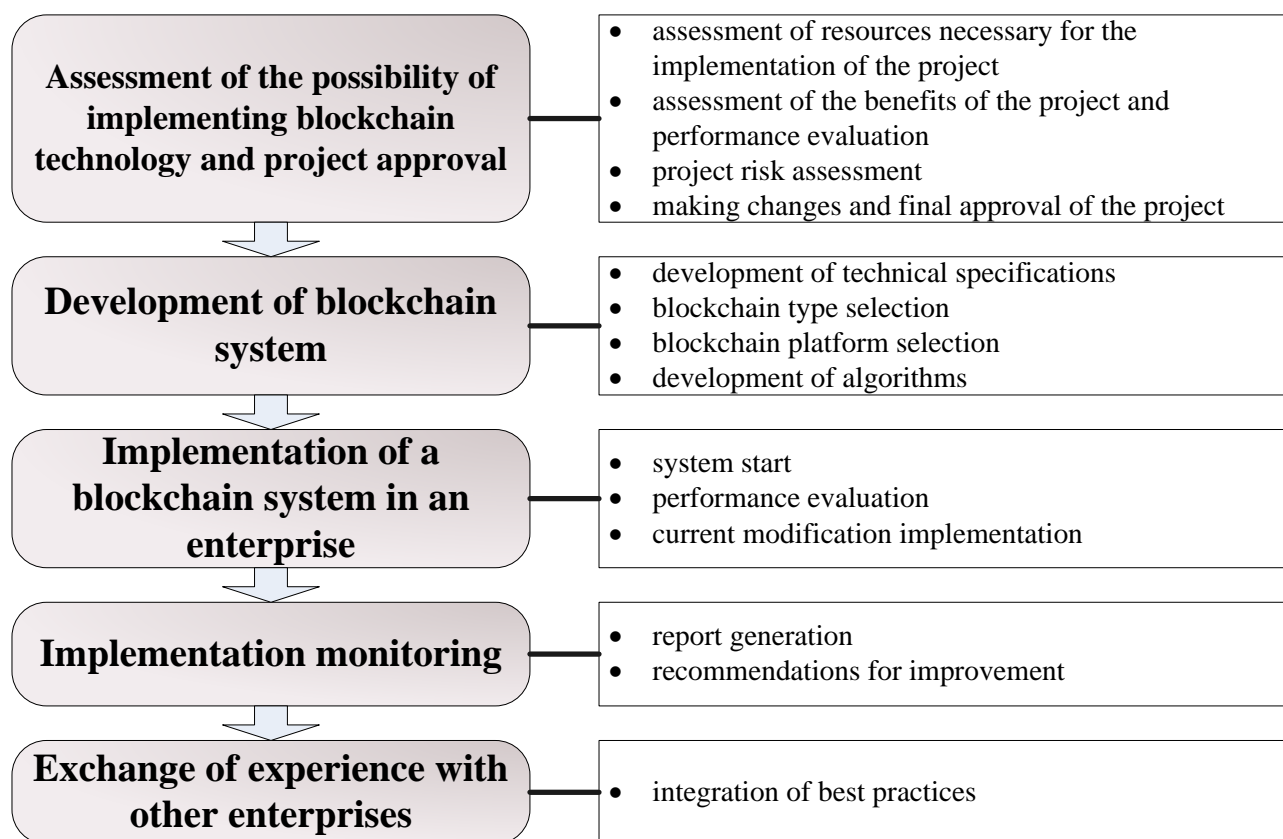


Figure 3.3 – Blockchain implementation stages

The third stage of implementation includes the approval and testing process. Based on the results of the discussion, a weekly agenda is formed to adjust the platform, complement work mechanisms and introduce improvements and additions. Typical algorithms are complemented by individual solutions. In addition, a system for the operational adjustment of customer blockchain projects will begin to function based on the operation of the feedback system and daily project evaluation during implementation. This will maximize the compliance of the implemented algorithm with the real priorities of the customer.

At the fourth stage, the project is further debugged based on feedback, processing the results of the implementation of blockchain projects at the enterprise.

Selected blockchain type which is recommended for implementation in Kuehne + Nagel Ukraine is Public Permissioned blockchain. These are such blockchains that anyone can connect to view, but a participant can add information or connect his site only with the permission of other participants. Such blockchains are built by organizations in order to increase customer confidence.

3.3 Calculation of the economic efficiency of the blockchain implementation

At the first stage of calculating the economic efficiency of the project, it is necessary to determine the possible financial costs. Such financial flows can be one-time in the form of investments, or constant (support and maintenance costs). The possible investments in the project of blockchain implementation are shown in the Table 3.1.

Table 3.1 – Possible costs for the implementation of blockchain technology at the enterprise, USD

№	Name of the cost item	1 year	2 year	3 year	4 year	5 year	Total
1	2	3	4	5	6	7	8
1	Adaptation of existing technology (accordingly to design, marketing, legislation and a business plan)	50000	0	0	0	0	50000
2	Smart contract development	27000	0	0	0	0	27000
3	System equipment for nodes	15000	0	0	0	0	15000
4	Marketing services, PR campaign	5000	0	0	0	0	5000
5	Security audit	0	11000	0	0	0	11000
6	Cybersecurity specialist	3000	3000	3000	3000	3000	15000
7	Transaction costs	1000	1200	1400	1600	1800	7000
8	Training of system users	800	0	0	0	0	800
9	Total	101800	15200	4400	4600	4800	130800

The purpose of evaluating any project is to answer the question: do future project revenues justify current costs.

The theory of investment analysis involves the use of a certain system of analytical methods and indicators, which together allow to reach a fairly objective conclusion about the effectiveness of the project [49]. The five main methods are most commonly used. In turn, they can be combined into two groups:

1. Methods based on the application of discounting:

- the method of determining the net present value;
- method of calculating return on investment;
- method of calculating the internal rate of return.

2. Methods that do not involve the use of the concept of discounting (simple methods):

- method of calculating the payback period of investments;
- method of determining the return on investment.

A prerequisite for evaluation is also the assumption that all costs and all results that will be associated with the analyzed investment projects are of a monetary nature.

Net Present Value (NPV). This is the most famous and most used criterion [43]. There is other names in the literature discounted net benefits.

NPV is the difference between the future value of the expected benefit stream and the current value of the current and subsequent costs of the project throughout its cycle. NPV is the discounted value of the project (current value of income or benefits from investments).

In order to calculate the NPV of the project, it is necessary to determine the discount rate, use it to discount the flow of costs and benefits and summarize the discounted benefits and costs (costs with a minus sign). When conducting a financial analysis, the discount rate is usually the cost of capital for the firm. In economic analysis, the discount rate is the underlying cost of capital, i.e. the profit that could be obtained by investing the most profitable alternative projects.

If the NPV is positive, then the project can be recommended for funding. If the NPV is zero, then the proceeds from the project will be enough only to restore the invested capital. If the NPV is less than zero - the project is not accepted. The calculation of NPV is done according to the following formula:

$$NPV = \sum_{t=1}^n \frac{I_t - O_t}{(1+r)^t} \quad (3.1)$$

where I_t , - income flows of the project in year t;

O_t , - outcome flows of the project in year t;

r - discount rate;

n - duration (life) of the project.

Calculations of net present value on the presented project of the blockchain implementation at the company Kuehne + Nagel Ukraine will be presented in the form of Table. 3.2.

Table 3.2 – NPV calculation of the project, USD

№	Years	Incomes	Outcomes	Cash Flow	Discount coefficient r=10%	Discounted Cash Flow	Discount coefficient r=20%	Discounted Cash Flow
1	1	2	3	4	5	6	7	8
2	t	I_t	O_t	CF_t	$1/(1+r)^t$		$1/(1+r)^t$	
3	Pessimistic forecast							
4	1	17850	101800	-83950	0,909	-76310,6	0,833	-69958,3
5	2	27200	15200	12000	0,826	9912	0,694	8333,3
6	3	33150	4400	28750	0,751	21591,25	0,579	16637,7
7	4	38250	4600	33650	0,683	22982,95	0,482	16227,8
8	5	45050	4800	40250	0,621	24995,25	0,402	16175,6
9					NPV	3170,9	NPV	-12583,9
10	Realistic forecast							
11	1	21000	101800	-80800	0,909	-73447,2	0,833	-67333,3

End of the Table 3.2

1	1	2	3	4	5	6	7	8
12	2	32000	15200	16800	0,826	13876,8	0,694	11666,7
13	3	39000	4400	34600	0,751	25984,6	0,579	20023,1
14	4	45000	4600	40400	0,683	27593,2	0,482	19483,0
15	5	53000	4800	48200	0,621	29932,2	0,402	19370,5
16					NPV	23939,6	NPV	3210,0
17	Optimistic forecast							
18	1	23100	101800	-78700	0,909	-71538,3	0,833	-65583,3
19	2	35200	15200	20000	0,826	16520	0,694	13888,9
20	3	42900	4400	38500	0,751	28913,5	0,579	22280,1
21	4	49500	4600	44900	0,683	30666,7	0,482	21653,2
22	5	58300	4800	53500	0,621	33223,5	0,402	21500,5
23					NPV	37785,4	NPV	13739,3

In most cases, the amount of discounted net values has a positive value - the net present value is positive, which characterizes the project as one that will have a positive impact on the company and can be recommended for implementation.

Also an important criterion for assessing the effectiveness of the project is the Internal Rate of Return – IRR [30]. The IRR of the project is equal to the discount rate at which the total discounted benefits are equal to the total discounted costs, ie the IRR is the discount rate at which the NPV of the project is zero. The IRR is equal to the maximum interest on loans that can be paid for the use of the necessary resources, while remaining at a break-even level.

The calculation of the IRR is performed by the method of successive approximations of the value of NPV to zero at different discount rates. Calculations are made according to the formula:

$$IRR = A + \frac{a(B - A)}{(a - b)} \quad (3.2)$$

where A is the value of the discount rate at which the NPV is positive;

B is the value of the discount rate at which the NPV is negative;

a is the value of the positive NPV, under discount rate A ;

b is the value of the negative NPV, under discount rate B .

Pessimistic forecast. Discount rate at which the NVP begins to be negative is 12% (-701,2). Carry out calculation of IRR:

$$IRR = 10\% + \left(\frac{3170.9 \cdot (12 - 10)}{3170.9 - (-701.2)} \right) \% = 11.64\%.$$

Realistic forecast. Discount rate at which the NVP begins to be negative is 23% (-1221,7). So, IRR will be equal:

$$IRR = 10\% + \left(\frac{23939.6 \cdot (23 - 10)}{23939.6 - (-1221.7)} \right) \% = 22.37\%.$$

Optimistic forecast. Discount rate at which the NVP begins to be negative is 30% (-1050,4). Calculation of IRR is following:

$$IRR = 10\% + \left(\frac{37785.4 \cdot (30 - 10)}{37785.4 - (-1050.4)} \right) \% = 29.50\%.$$

Also, IRR can be find out in a graphical way. The accumulation of NPV at the discount rate is shown in Fig. 3.4.

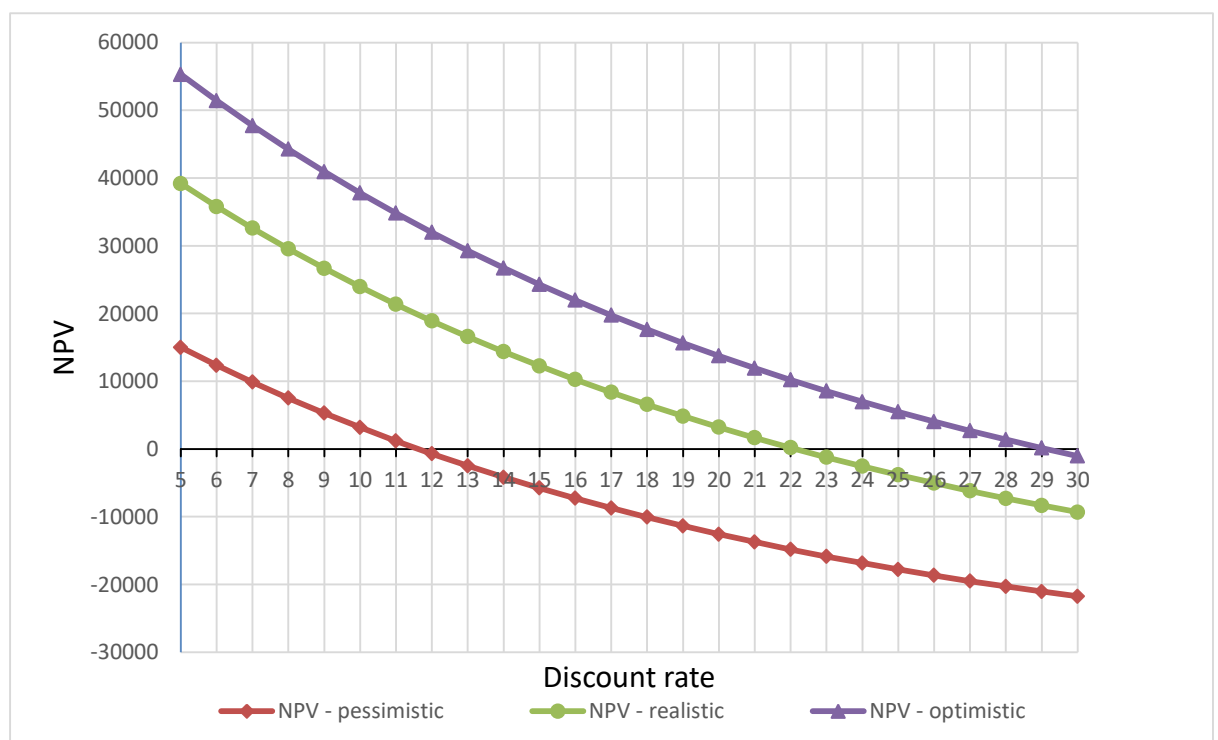


Figure 3.4 – Graphical calculation of IRR

The graph shows that in the pessimistic scenario of the project, the NPV line crosses the X axis near 12, in the realistic scenario – near 22 and in the optimistic scenario – near 29.

The current indicator of evaluating the effectiveness of the project is Payback Period, PP [44]. The entire minimum period of time is the change of the investment in the investment project, and it will be in-process investment. Terminology is the key indicator of the assessment of the investment and privatization of the business plan, the project of anyway, the basic investment plan. The payback period is indicated by the formula:

$$PP = \min n \text{ under which } \sum_{i=1}^n CF_i > IC \quad (3.3)$$

where *IC* (Invest Capital) - the initial investment costs in the project,

CF_i (Cash Flow) - cash flow of the project in the *i* period of time, less current costs,

n is the number of time periods.

Calculate the payback period of investment in the project (Table 3.3).

Table 3.3 – Calculation of the project payback period

№	Time period (year), T	Initial investment costs, IC	Cash Flow, CF	Cash flow cumulative total
1	2	3	4	5
1	Pessimistic forecast			
2	1	97800	13850	13850
3	2	97800	12000	25850
4	3	97800	28750	54600
5	4	97800	33650	88250
6	5	97800	40250	128500
7	Realistic forecast			

End of the Table 3.3

1	2	3	4	5
8	1	97800	17000	17000
9	2	97800	16800	33800
10	3	97800	34600	68400
11	4	97800	40400	108800
12	5	97800	48200	157000
13	Optimistic forecast			
14	1	97800	19100	19100
15	2	97800	20000	39100
16	3	97800	38500	77600
17	4	97800	44900	122500
18	5	97800	53500	176000

Cash flow over time was defined as the difference between the expected benefits and current expenses, which expected 4000 USD in 1st year, 15200 USD in 2nd year, 4400 USD in 3rd year, 4600 USD in 4th year and 4800 USD in 5th year. Capital investments at the beginning of the project amounted to 97800 USD. Based on the calculations, we construct graphs to more conveniently reflect the moment of the beginning of the prevalence of cash flows over capital investments (Fig. 3.5).

According to the calculations we can see that the payback period of the project comes after 3,5 years of the project for a realistic and optimistic forecast and after the 4th year of the project for a pessimistic forecast.

Discounted Payback Period (DPP) is the payback period based on the time value of money (discount rate). The main difference from the simple payback formula is the discounting of cash flows and bringing future cash inflows to the current time. Calculated by the formula:

$$DPP = \min n \text{ under which } \sum_{t=1}^n \frac{CF_t}{(1+r)^t} > IC \quad (3.4)$$

where r is the discount rate.

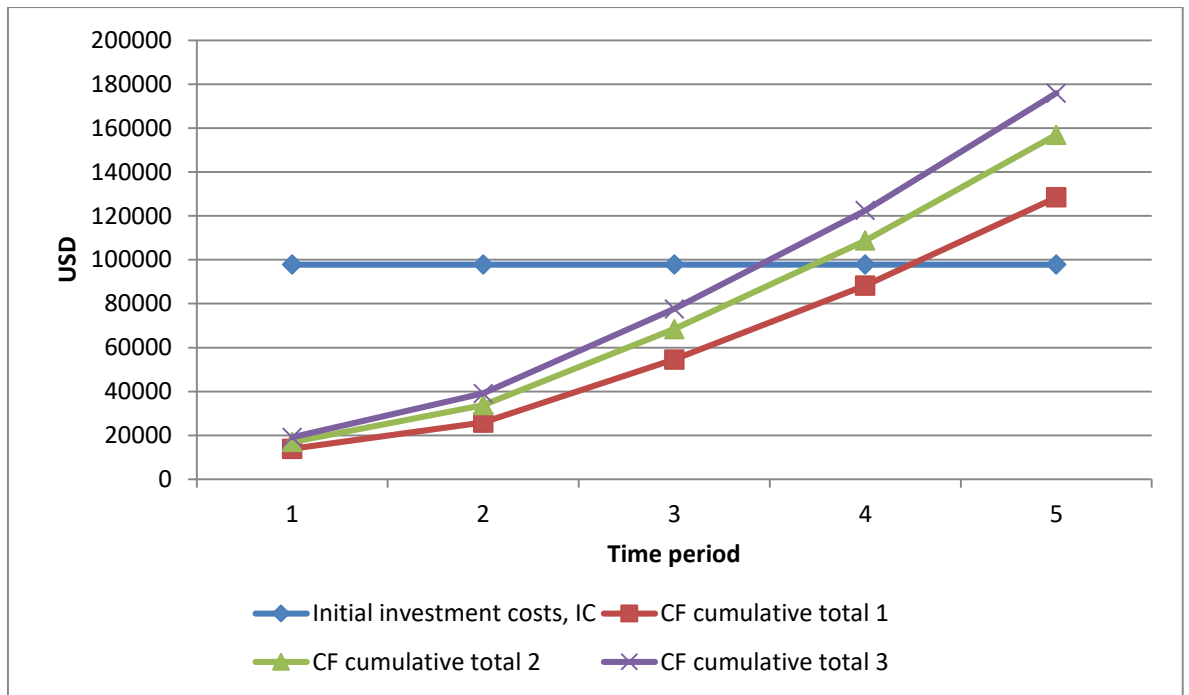


Figure 3.5 - Graphical display of the project payback period

Let's make the necessary calculations of discounted payback period and bring results to the table (Table 3.4).

Table 3.4 - Calculation of the project discounted payback period

No	Time period (year), T	Initial investment costs, IC	Cash Flow, CF	Discounted CF, $r=10\%$	Cash flow cumulative total	Discounted CF, $r=20\%$	Cash flow cumulative total
1	2	3	4	5	6	7	8
1	Pessimistic forecast						
2	1	97800	13850	12589,65	12589,7	11541,7	11541,7
3	2	97800	12000	9912	22501,7	8333,3	19875,0
4	3	97800	28750	21591,25	44092,9	16637,7	36512,7
5	4	97800	33650	22982,95	67075,9	16227,8	52740,5
6	5	97800	40250	24995,25	92071,1	16175,6	68916,1
7	Realistic forecast						

End of the Table 3.4

1	2	3	4	5	6	7	8
8	1	97800	17000	15453	15453	14166,7	14166,7
9	2	97800	16800	13876,8	29329,8	11666,7	25833,3
10	3	97800	34600	25984,6	55314,4	20023,1	45856,5
11	4	97800	40400	27593,2	82907,6	19483,0	65339,5
12	5	97800	48200	29932,2	112840	19370,5	84710,0
13	Optimistic forecast						
14	1	97800	19100	17361,9	17361,9	15916,7	15916,7
15	2	97800	20000	16520	33881,9	13888,9	29805,6
16	3	97800	38500	28913,5	62795,4	22280,1	52085,6
17	4	97800	44900	30666,7	93462,1	21653,2	73738,8
18	5	97800	53500	33223,5	126686	21500,5	95239,3

Graphic interpretation of the discounted payback period calculation is given in the chart (Fig. 3.6, 3.7).

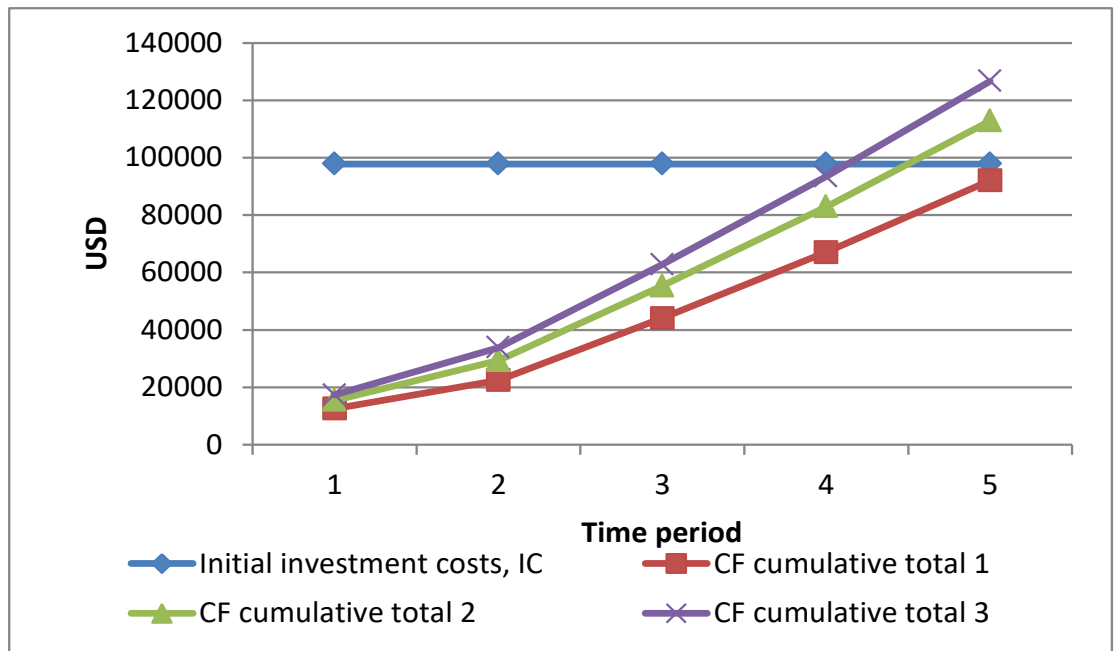


Figure 3.6 – Calculation discounted payback period under 10% discount rate

The graph shows that discounted payback period under 10% discount rate comes after 4th year in optimistic and realistic scenario and after 5th year in pessimistic scenario.

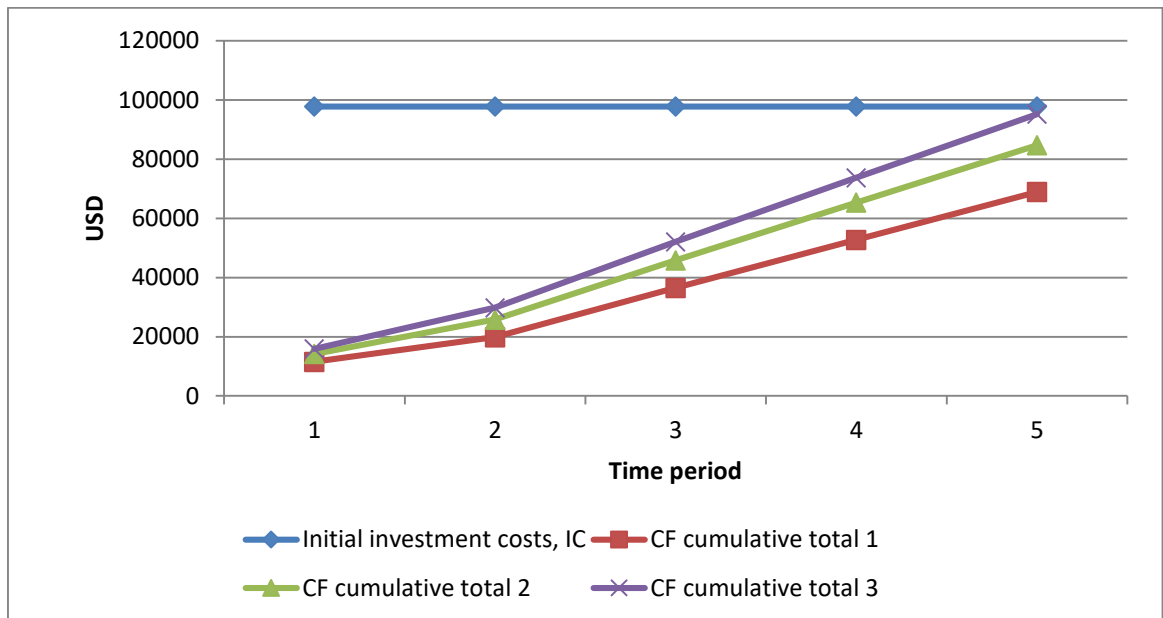


Figure 3.7 - Calculation discounted payback period under 20% discount rate

If discount rate equal 20%, discounted payback period will come after 5th year in all scenarios.

3.4 Chapter 3 summary

In the third chapter of thesis the purposes of sales department and the ways of logistics services improving were considered. The sale of logistics services has a number of features that distinguish it from the sale, for example, of goods. If the client sees the goods immediately and understands what he pays for, then the service is a certain process that will happen in the future and it is difficult for the client to evaluate it. When deciding to order a service, the client focuses not only on the price, but also on the image of the company, takes into account his experience and reviews

of other clients. Accordingly, the price of the service and its quality are two equivalent factors for making a purchase decision.

A company that sells logistics services always wants that a new customer to become a regular customer. This is possible if the client has a permanent activity that needs logistics services and if the client has formed a positive opinion about the logistics provider after the service has been provided. Now many companies see great potential in blockchain technologies and their application in logistics. This technology allows you to track the location of the goods on all parts of the supply chain, quickly monitor product quality, automate workflow and reduce errors. It is also possible to automate financial settlements, increase supply chain transparency and simplify conflict resolution.

In the thesis the proposal of blockchain implementation in the activity of Kuehne + Nagel Ukraine was developed. Kuehne + Nagel has already tested blockchain technology in the field of sea transport in Europe. We proposed to apply this technology in Ukraine also in sea freight. For this, a project for implementation was developed and its stages described. To justify the economic efficiency of the project, indicators such as Net Present Value, Internal Rate of Return, Payback Period and Discounted Payback Period were calculated. Almost all indicators (in realistic and optimistic scenario) were positive and project could be recommended for implementation. Payback period will come after 4-5 years.

CONCLUSIONS AND RECOMMENDATIONS

Any commercial enterprise operates for making a profit. For the existence of the company, the vital question is whether the customer will buy goods or services, or no. The following question follows from this: how to motivate a client to buy a product or service from us, and not from a competitor. From this point of view, the organization of sales of logistics services is considered not only as management of the sales process, but also the impact on what we sell. The logistics operator sells a logistics service, and if he wants this service to be sold many more times, he sets the goal of making the service quality. Blockchain is one of the new technologies that can improve logistics processes.

Today, logistics is vital component of international and domestic trade. In a broad sense logistics is defined as process of goods movement organization from the point of origin to the point of consumption, including management and controlling all related activities and services. Nowadays logistics services are very various in different fields: transportation, warehousing, procurement, distribution, production, after-sales service, protection of natural environmental and digital transformation.

In most cases these services are provided by a logistics companies or providers and freight forwarder companies. And as for any other commercial company, it is important for such enterprises to effectively organize the sale of their services. Especially considering the fact that selling a service is much more difficult than a product: customer can't see and touch it. As long as there are consumers ready to buy the services of the company, as long as the enterprise exists. There are various sales techniques aimed at new and regular customers, to promote a new service etc. In order to understand whether sales are successful or not, it is important to measure sales effectiveness.

Sales effectiveness describes the process of finding the right sales tasks to produce the best possible sales output and outcomes. For different organizations, this

could mean improved profit, revenue, sales of a new product, or something else entirely — it all depends on how company strategy defines success.

In second chapter of bachelor thesis was analysed activity of logistics provider Kuehne + Nagel. This is big international enterprise that has lead position on the freight forwarding and logistics market. Company has 130 years business history and over the years has accumulated tremendous experience. Branches of Kuehne + Nagel are presented worldwide in over 100 countries and the number of employees is approximately 83,000 persons. Kuehne + Nagel specializes in seafreight, airfreight, contract logistics and overland businesses.

Services are provided by Kuehne + Nagel lies in various industries: aerospace, automotive, oil&gas, emergency and relief, retail, drink logistics, hotel logistics, consumer goods/FMCG, pharma and healthcare, industrial, marine logistics and forest products. In Ukraine Kuehne + Nagel started working in 1992 and now company has achieved strong position on the market. Head office is located in Kyiv, also offices are presented in Lviv and Odessa. Competitors in the market are DHL Ukraine, Zammler, Raben, Ekol, FM Logistic, Logistic Plus.

Analysis of Kuehne + Nagel business and financial activity has shown stable growth till 2019. In all business units such indicators as net turnover, gross profit EBITDA and EBIT increased in compare with previous years. First quarter of 2020 was hard for all world due pandemic of COVID-19. A lot of companies met challenges for their activities: volume decline of sea, air and road logistics due industrial production and trade volumes weakened significantly. As a result Kuehne + Nagel Group's net turnover, gross profit and earnings were significantly below last year's levels. In UK was sold major part of contract logistics to XPO Logistics.

But in this crisis situation, Kuehne + Nagel maintained its operational performance, closely managed a number of specialty businesses and won new customers. In the case of basic commodities and pharmaceuticals, transport volumes were maintained at a respectable level. Company will face major challenges in the coming months, but is well positioned in view of its customer proximity, agility and

digital offerings. A high level of liquidity characterises the company's solid financial strength.

In the third chapter of thesis the purposes of sales department and the ways of logistics services improving were considered. The sale of logistics services has a number of features that distinguish it from the sale, for example, of goods. If the client sees the goods immediately and understands what he pays for, then the service is a certain process that will happen in the future and it is difficult for the client to evaluate it. When deciding to order a service, the client focuses not only on the price, but also on the image of the company, takes into account his experience and reviews of other clients. Accordingly, the price of the service and its quality are two equivalent factors for making a purchase decision.

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