

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ

**ХАРКІВСЬКИЙ НАЦІОНАЛЬНИЙ ЕКОНОМІЧНИЙ УНІВЕРСИТЕТ
ІМЕНІ СЕМЕНА КУЗНЕЦЯ**

**Методичні рекомендації
до комплексного
професійного тренінгу
для здобувачів вищої освіти
спеціальності 073 "Менеджмент"
освітньої програми "Логістика"
першого (бакалаврського) рівня**

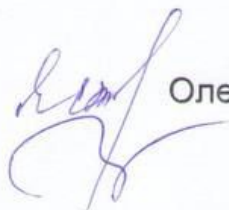
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**SIMON KUZNETS KHARKIV NATIONAL UNIVERSITY
OF ECONOMICS**

**Guidelines
to comprehensive professional training
for students of higher education, specialty 073
"Management" of the educational program "Logistics"
of the first (bachelor's) level**

**Kharkiv
S. Kuznets KhNEU
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Guidelines to comprehensive professional training are presented which will help applicants master practical organizational skills, technological, technical and information support of basic functions logistics

Recommended for students specialty 073 "Management" of the educational program "Logistics" of the first (bachelor's) level.

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Introduction

Today, it is very important in higher education to use methods based on the use of modern educational technologies, which increase the quality of student training and the development of their abilities and independence in solving industrial problems. Training forms provide for the identification of students' creative potential and independence, information exchange, business communication skills, and development of the skills of a modern logistics specialist.

The purpose of the training is to master the practical skills of organizational, technological, technical and information support of the basic functions of logistics.

To achieve the goal, the following tasks have been defined:

to carry out operational and current management of individual links of logistics chains and performance of individual logistics functions, using knowledge of functional areas of logistics;

to systematically connect the procurement of material resources with the production and sale of finished products, the formation of stockpiles of goods and material values, storage, transportation, cargo processing and information support, using the principles of logistics.

The proposed training is comprehensive and is aimed at consolidating knowledge and practicing skills to form future specialists modern theoretical knowledge and practical skills in using the principles and methods of logistics in the general management system of the enterprise.

The results of training and competence formed by comprehensive professional training are defined in the table. 1.

Table 1

Learning outcomes and competence

Learning outcomes	Competences that must be mastered by a student of higher education
LO3	GC9, SC5
LO 8	SC7
LO 15	SC6
LO 16	GC 9, GC 11
LO 17	GC 3, GC 10, GC 11, GC 14, SK9
LR 18	GC 4, GC 5, SC2, SC16

where GC 3. Ability to abstract thinking, analysis, synthesis.

GC 4. Ability to apply knowledge in practical situations

GC 5. Knowledge and understanding of the subject area and understanding of professional activity.

GC 9. Ability to learn and master modern knowledge.

GC 10. Ability to conduct research at an appropriate level.

GC 11. Ability to adapt and act in a new situation.

GC 14. Ability to work in an international context.

SC 2. The ability to analyze the results of the organization's activities, to compare them with the factors of influence of the external and internal environment.

SC5. The ability to manage the organization and its divisions through the implementation of management functions.

SC6. The ability to act socially responsibly and consciously.

SC7. Ability to choose and use modern management tools.

SC9. Ability to work in a team and establish interpersonal interaction when solving professional tasks.

SC16. The ability to form a comprehensive program to increase the company's competitiveness on the national and international markets from the point of view of logistics as a new paradigm of entrepreneurial activity.

LO3. Demonstrate knowledge of theories, methods and functions of management, modern concepts of leadership.

LO 8. Apply management methods to ensure the effectiveness of the organization.

LO 15. Demonstrate the ability to act in a socially responsible and socially conscious manner based on ethical considerations (motives), respect for diversity and interculturality .

LO 16. Demonstrate the skills of independent work, flexible thinking, openness to new knowledge, be critical and self-critical.

LO 17. Conduct research individually and/or in a group under the guidance of a leader.

LO 18. Use the principles and methods of logistics in the general management system of the enterprise to reduce costs and optimize logistics flows and processes of organizations.

LO 19. To apply a logistic approach to the management of

organizations' resources and to ensure an increase in their competitiveness. Demonstrate skills in optimizing the organizational and technological aspects of the main functions of logistics using communication and information support.

Comprehensive training "Functional areas of logistics "

Stage No. 1 "Choosing a supplier of material resources" (6 hours)

The purpose of the stage is to systematize students' knowledge of the conditions of supply and conclusion of contracts for the supply of resources, the development of negotiation skills, the development of strategies and tactics for the negotiation process with a potential supplier, and decision-making on the selection of a supplier of material resources

Content of the stage and methodical recommendations for implementation

"Souvenir" LLC, Kyiv, produces souvenir Darts games, which it sells throughout Ukraine.

For the production of finished products LLC "Souvenir" requires:

1) product A - various components that have a higher priority, they must be delivered twice a week;

2) product B - components, the absence of which may cause difficulties at the final stage of assembly of finished products, they must be delivered within six working days.

LLC "Souvenir" decided to conclude a contract for the supply of products A and B with only one supplier company. After a preliminary review of approximately 20 qualified suppliers, "Souvenir" LLC settled on two suppliers operating throughout Eastern Europe, with whom it had previously cooperated.

Both companies have proven themselves well and have a stable financial position. One of them, the "Dartboard" company, is located in Latvia, the second, the "Emka" company, is located in Poland.

"Souvenir" LLC plans to discuss the terms of the contract with each supplier, and then choose the one whose terms will be the most acceptable and profitable. There are a number of issues that should be discussed during the negotiations.

"Souvenir" LLC, "Dartboard" and "Emka" companies have all the necessary information: despite the fact that both competing suppliers did not directly exchange strategic information, they were involved in the general discussion on pricing, so they have some information about costs and each other's strategies.

The most important issues to be discussed during the conclusion of contracts are listed with some explanations of the positions of "Souvenir" LLC, "Dartboard" and "Emka" firms in the table. 2.

It is necessary to study the positions of the parties before negotiations.

1. Grouping of students into three subgroups: each subgroup represents the interests of one of three companies: the manufacturing company "Souvenir", the component supplier companies "Dartboard" and "Emka". You can use different methods of grouping into subgroups.

2. Determination of the main stages and tactics of negotiations: the participants and interests of the parties in the negotiations are determined, which must be conducted in accordance with the conditions of the proposed situation. Tactics and stages of negotiations are considered. It is necessary to discuss the degree of trust between the parties, and if it is high and the parties are not inclined to consider their interests as mutually exclusive, then the negotiation process can be reduced to the highest form of cooperation - "brainstorming".

The parties may use the principled negotiation method, according to which:

1) primary are not the positions of the parties, but their interests, which must be considered taking into account the entire spectrum of possible positions;

2) before the start of the negotiations, it is necessary to formulate the principles on the basis of which the acceptability of a specific version of the contract will be evaluated.

Table 2

Positions of the parties before negotiations

Item of the contract	Position of "Souvenir" LLC	Position of the firm " Dartboard "	Position of the firm " Emka "
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1	2	3	4
Basis deliveries	wants conclude contract on conditions	ready to conclude contract on conditions	ready to conclude contract on conditions
Annual amount of deliveries	wants to conclude contract for product delivery in quantity: product A – 900 kg; product B – 680 kg with deviation +/- 10 %	agree to conclude contract fo supply products in quantity: product A – 800 t; product B – 680 t with deviations +/-10 %, with penalties sanctions in case smaller volume deliveries	agree to conclude contract on delivery products in quantity: product A – 800 t; product B – 680 t with additional payment in case larger supplies volumes, what provided for contract
Price of products	Maximum price of 1 kg product A may be 3 cond. unit product B – 1 cond. unit	Price product A maybe from 2 up to 3 cond. unit per kg, product B – from 1 to 2 cond. unit by kg	Price product A maybe from 3 to 4 cond. unit by kg, product B – from 0.5 to 1.5 cond. unit by kg
Losses and damage	Product A is subject to petty theft and injuries. Last year, cooperating with suppliers, "Souvenir" LLC filed claims for losses and damages in the amount of 8 thousand. unit Product B is not subject to theft. "Souvenir" LLC wants the claims to be paid in case of theft Immediately.	ready admit what in case losses and claim damages will be paid immediately	Lawsuits agree pay only in size not more 5 thousand cond. unit Wants LLC "Su-veneer" accepted on himself risks to certain quantity what will allow exclude extra paper work

Continuation of table 2

1	2	3	4
insurance conditions	Wants vendors to take out insurance with a third-party firm on the terms "with responsible responsibility for all risks"	agree to conclude an insurance contract on the terms "with responsibility for a private accident"	agree to conclude an insurance contract on the terms "without responsibility for damage"
Schedule of payments	Wants to postpone payments, because the income of working capital is 1.5% on month	Prefers immediate payment with penalties sanctions for delay of payments	Prefers immediate payment with a discount for an earlier one payment
Packaging	The products purchased so far are packed in accordance with ISO standards. Wants to get a new one contract packaging was cheaper.	Never encountered other types of packaging for this product. Concerned about the possibility of additional damage claims products in the case the use of this type of packaging	concerned filing lawsuits for damages in case of using non-standard packaging
Deadlines deliveries	Product A needs to be delivered twice per week, product B - once a week, with fines, in case of non-fulfillment of this condition, these fines should be larger, considering the losses from lost sales	agree with this condition, except when the cause of the delay is not under the control of the supplier.	The company's position is similar to the position of the "Dartboard" company
Component delivery windows	Want to set a one-hour window during which they must arrive accessories This is necessary for drawing up the company's work schedule. Wants to establish penalties in case components arrive earlier or later than the established one-hour window.	Agrees to such conditions with reluctance. Wants to use penalties only in case of late delivery by a certain time. Does not recognize fines, if the reason for the delay is beyond the supplier's control.	Agrees to such conditions with great reluctance. Wants to use penalties only in the case of a certain quantity delivery delays month. Does not recognize penalties if the reason for the delay is beyond control of supplier

1	2	3	4
Special supply of products	If necessary, I would like the supplier to make an additional one supply of products: in addition to the contract and the compiled schedule	Gives consent to a certain number of "free" deliveries per month, by agreement, an additional price is set above this number	Establishes a fee for additional unscheduled deliveries, if the delivery volume does not exceed of a certain value

3. Grouping of students into three subgroups: each subgroup represents the interests of one of three companies: the manufacturing company "Souvenir", the component supplier companies "Dartboard" and "Emka". You can use different methods of grouping into subgroups.

4. Determination of the main stages and tactics of negotiations: the participants and interests of the parties in the negotiations are determined, which must be conducted in accordance with the conditions of the proposed situation. Tactics and stages of negotiations are considered. It is necessary to discuss the degree of trust between the parties, and if it is high and the parties are not inclined to consider their interests as mutually exclusive, then the negotiation process can be reduced to the highest form of cooperation - "brainstorming".

The parties may use the principled negotiation method, according to which:

primary are not the positions of the parties, but their interests, which must be considered taking into account the entire range of possible positions;

before the start of the negotiations, it is necessary to formulate the principles on the basis of which the acceptability of a specific version of the contract will be evaluated.

The following sequence of stages of the negotiation process is appropriate: exploratory; arguments; harmonization; formulation of the decision.

It is necessary for the negotiation process to go through all the stages, otherwise, instead of finding a solution that would satisfy the interests of both parties as much as possible, the negotiations can be reduced to positional bargaining or turn into a "war" between the parties.

5. Preparation of subgroups for negotiations: each subgroup should:

- 1) determine the purpose of negotiations;
- 2) determine the interests of the parties;

- 3) develop acceptable areas of agreement;
- 4) argue the position;
- 5) develop options for mutual concessions.

6. Conducting negotiations in real time: the delegation participating in the negotiations from each subgroup should consist of two people. Negotiations between the Souvenir and Dartboard teams must be conducted separately from the negotiations between the Souvenir and Emka teams.

15 minutes are allotted for each negotiation. Each point (Table 1.3) should be discussed separately, as far as possible.

It will be considered unethical for "Souvenir" LLC to use concessions obtained as a result of negotiations with one of the supplier companies as a means of obtaining greater concessions from another supplier company.

"Souvenir" company cares about its prestige and high reputation and is interested in mutually beneficial long-term relationships with its partners. Therefore, the company will not deliberately enter into a contract that is not advantageous to the supplier in advance and as a result of which the supplier will suffer losses during the fulfillment of the terms of the contract.

In the process of negotiations, the parties must make a record of the agreements reached. At this stage, students who do not participate in the negotiation process act as observers and record the arguments used, the psychological impact on the partners and the negotiation tactics used.

7. Making a decision on the selection of a supplier of material resources: on the basis of the negotiations, the subgroup representing the interests of "Souvenir" LLC must make a final decision on the selection of a supplier of material resources. The decision is announced in front of the entire study group.

8. Analysis of the negotiation process that took place: if after the negotiation there is an increased emotionality of the participants, then you can ask questions about their well-being and impressions. Immediately after the game, you need to ask the participants of the negotiations questions:

1. Were the negotiations successful?

2. What were the positions and interests of the parties before the start of negotiations? Next, you should ask questions to the observers:

1. Which team used stronger arguments?

2. What negotiation tactics were used?

3. Has partner manipulation been observed?

As a rule, the participants in the negotiations do not use a strategy of cooperation, which allows to jointly find a solution to the problem. More often,

such a form of negotiation as positional bargaining is used, in the process of which the parties formulate their positions and subsequently adjust them (and the compromise method is usually used). As a result of the use of such tactics in the negotiation process, both parties often receive not at all what they would like to receive.

Clarifying the interests of the parties is much more effective than positional bargaining, but for the negotiation process to be carried out using cooperative tactics, the parties must want it, and neither side should push the partner to quickly determine his position.

9. Discussion of possible options for mutual concessions: once again a discussion of possible options for mutual concessions is held and the final version of the negotiation protocol is drawn up, and the next stage is the conclusion of an agreement.

10. Summary: discussion of competitive actions of suppliers and consumers, their mutual influence in the process of procurement of material funds.

At the final stage of the training session, the summing up of the day's results, assessment of the level of awareness and acquisition of practical skills, and evaluation of students is carried out. The final part of the training allows you to determine whether the participants are satisfied or not with various aspects of the educational process, including the atmosphere that has been created.

Stage No. 2 "Building distribution channels of finished products in accordance with the selected sales strategy" (6 hours)

The purpose of the stage is to learn under the given conditions (using the example of a ceramic tile production company) to analyze, choose and build optimal distribution channels and partnership relations in accordance with the chosen distribution strategy for finished products.

Content of the stage and methodical recommendations for implementation

Students are combined into groups of five. One group will represent the expert commission, and the others will represent working groups.

It is assumed that the expert commission is made up of representatives of the highest level (production director, marketing director, logistics director, commercial director, etc.).

The working group consists of middle-level representatives (marketers, logisticians, salespeople) who need to solve the organization's current problems related to the sale of finished products.

Thus, each working group must independently study the situation and, in accordance with its own visions, propose a strategy for the development of sales of the manufacturing enterprise.

As a result, each working group develops its own version of the development of events and its own scheme of distribution channels, which must be presented to the court of the expert commission. Protection of projects is carried out in public.

For its part, the expert commission must evaluate each of the projects, firstly, from the point of view of logistical approaches to conducting economic activity, and secondly, from the point of view of economic results: profit and profitability. Based on the results of the work, the expert commission makes a decision about the winning project. In order to obtain an adequate result, the coordinator of the expert commission acts as a coach.

Stage conditions:

1. Characteristics of the enterprise.

PRIVATE LIMITED LIABILITY COMPANY Kharkiv Tile Factory produces ceramic products for interior wall and floor cladding. The main production is the production of facing ceramic tiles, which accounts for more than 85%. In addition, the enterprise produces decorative ceramic and household products. The total annual volume of production is about 24 million square meters. m per year (you need to use the Internet).

2. Overview of sales markets.

At this time, there is no shortage of facing tiles on the domestic market of building materials. We offer a wide range of tiles from both Ukrainian (30% of the market) and foreign manufacturers (Italian, Spanish, Czech - 70% of the market) of various sizes and types of decoration.

Imported tiles are presented complete with decorative elements (inserts, borders, decorative elements).

The products of domestic factories differ in quality, but the prices of

imported tiles (15-40 units per square meter) significantly exceed the prices of domestic tiles (6-15 units per square meter).

The forms of sale of finished products are different, in particular:

1) sale to dealers. This form makes it possible to reduce the prices for tiles set by manufacturers. Dealers independently provide advertising and sales of products. The manufacturer does not need to enter into competition for sales in this region. For the dealer, this form gives the advantage of a low price and lack of competition within the given market. For the manufacturer, this advantage consists in the pre-planned and guaranteed shipment of products, according to the current contract with the dealer;

2) periodic one-time, possibly multiple, large wholesale shipments. Customers are large construction organizations that supply construction complexes in individual regions. The advantage for the customer in this case is again relatively low wholesale prices from the manufacturer. For the manufacturing company, the advantage is the possibility of partial or full prepayment and at the same time large volumes of shipment;

3) sales of products in the field of trade on different terms. These can be large warehouse-stores, which, in turn, sell to a network of various construction and hardware stores. This form implies long-term and fairly stable relations with these customers. However, such a form requires a preliminary analysis of the partners' abilities and subsequent monitoring of their fulfillment of their obligations according to the calculations. The advantage of this form for the customer is the possibility of credit calculation and delivery of products by the company's transport. Sufficient stability of planned sales is an advantage for the manufacturer;

4) sales through the manufacturer's own sales network. This form requires significant costs and efforts on the part of the manufacturer, but it provides an opportunity to analyze demand to improve production planning (sizes, types, etc.). Such a form allows the manufacturer to set the most acceptable price. Market demand is seasonal in nature, i.e. in the period from December to March, the demand decreases significantly due to the reduction of construction works. The form of dealer relations can also be cyclical, but it can be settled by account trade offers, sales promotion, etc., carried out by dealers.

3. Structure of the sales department: today the sales department has an organizational structure of nine people: the head of the sales department, four sales managers and four assistants of managers

4. Organization of product sales and pricing: Kharkiv Tile Plant PJSC has advantages in selling its products. The company sells more than 70% of its products in the Kharkiv region. The main buyers are trade and construction organizations. Sales organization is carried out in-house.

PJSC "Kharkiv Tile Plant" sells its products at a price ranging from 6.0 cond. unit up to 7.5 cond. unit

5. Analysis of competitors. Today, among the manufacturers of Western European countries, the biggest competition comes from the Tubodzin factory (Poland). It offers tiles in a diverse assortment of standard sizes, with a diverse range of colors, with good quality and at a price that does not exceed 6.5 cond. unit per sq. m.

The joint venture "Agromat" (Ukraine, Kyiv) is also a strong competitor and through the dealer network of the company "Keramika" ensures the sale of the entire volume of products, but the price of tiles is higher than the prices of other domestic manufacturers (7.3 cond.units per unit - 9 cond.units per unit .).

Imported products have good quality and design, but are sold at much higher prices.

The price on the market is an important factor of competitiveness.

In this regard, the products of PJSC "Kharkiv Tile Factory" have an advantage at the current price of 6.0 - 7.5 cond. unit

It can be compared with the average cost of ceramic facing tiles currently used by construction organizations of Ukraine - 10.5 cond. unit

6. Service organization: "Kharkivskyi Plitkoviy Zavod" has the opportunity to organize the delivery of goods to the buyer by rail and road transport (involving transport intermediaries).

Costs for transportation of 1 sq. m of tiles by rail transport for a distance of 1,000 km is 1.2 um. units, by car - 1.1 units. unit

All transport costs are borne by the buyer of the products. During the transportation of products by rail transport, mandatory insurance against total or partial damage of the cargo is applied.

During transportation by motor vehicle, the cost of insurance is included in the transportation tariff. Insurance costs are borne by the buyer.

Task:

1. Study the situation and determine which distribution strategy should be chosen. Argue your choice based on the given facts.

Strategy options:

Strategy 1: to quickly enter the market in a new quality in order to ensure

timely sales of the planned volume of production of finished products (maximum capacity utilization).

Strategy 2: gradually conquer the market by getting closer to the consumer and promptly responding to his requests regarding the assortment and quality.

Strategy 3: to expand the sales market (both economically and geographically), positioning itself not only as a competitive enterprise that produces products, stable in terms of price and quality, but also as an enterprise with a reliable reputation and a positive image.

Strategy 4: full focus of sales on the Kharkiv region with the aim of being able to sell products at higher prices.

2. In accordance with the chosen strategy, schematically indicate the most attractive options for the distribution of finished products (sales channels).

Using the proposed possible partnership options, choose the most effective tactical techniques and methods and distribution channels acceptable to you. Explain your position and give a final assessment of the proposed measures. At the same time, explain the optimality of your decision in this situation.

Variants of partnership in the distribution system of finished products:

1. Sale through the Budivelnyk retail network.

Information about the company. "Budivelnyk" is a chain of four retail stores located in Kharkiv and Kharkiv region (two each, respectively).

"Builder" has been on the market for five years. During this time, he managed to establish himself among consumers as a seller with a high level of service.

"Budivelnyk" offers a whole range of additional services in the process of selling its goods, for example, such as: organization of delivery of goods at any time convenient for the consumer from 7 to 24 hours, consultation on the correct use of purchased goods, design services, etc.

However, the price level for goods in this network is slightly higher than the average market price level.

The "Budivelnyk" company offers the following terms of the dealer contract to PJSC "Kharkiv Tile Factory": "Budivelnyk" will procure a certain amount of products in the contract every month (with a breakdown into two stages), paying according to the invoices at the time of submitting the shipment invoice. The transportation of the goods will be carried out by the "Builder". The contract is concluded for one year. Twice a year, CJSC "Kharkiv Tile Factory"

is offered to hold promotions in "Budievelnyk" stores.

The purchase of products should be accompanied by incentive gifts, for example, a box of adhesive for facing tiles and other image and marketing strategies (presentations, mailing of letters, etc.). All expenses for the organization of the actions are borne by PJSC "Kharkiv Tile Factory".

2. Sale through the Keramika company.

Information about the company. "Keramika" company offers PJSC "Kharkiv Tile Factory" to enter into a contract for exclusive distribution activity in the Central region of Ukraine. According to this contract, "Keramika" will buy from the company 60% of its products at a fixed price of 6.0 um. unit for 1 square meter and sell products in the Central region of Ukraine, with the exception of Kharkiv and Kharkiv region, so as not to create competition for the manufacturer himself. Deliveries should be made three times a month, with an even breakdown of the monthly production volume. The contract should stipulate that the tiles are sold to her cheaper, but "Keramika" takes out the tiles herself.

Claims regarding the quality of the "Keramika" product will be forwarded to PrJSC "Kharkivskiyi plitkovy zavod", in all other cases, from the moment of shipment of the product, all responsibility for the safety of the cargo will be go to the "Keramika" company. The contract is proposed to be concluded for one year and at the end of this period, if there are no objections, the contract will be extended. "Keramika" has established itself as a reliable distributor in the building materials market.

3. Sale through the company "Stroyzbut".

Information about the company. The company "Stroyzbut" has been on the market for two years. "Stroyzbut" is a joint venture engaged in the purchase of construction materials for large construction companies operating mainly in the territory of Western Ukraine. However, there are also customers among Kharkiv firms. The company has proven itself satisfactorily among its partners. Such a not so high assessment of the company's activity is connected with frequent violations of contractual relations, first of all, in relation to the terms of fulfillment of obligations. The reasons for such deviations were, as a rule, subjective. However, the partners of "Stroyzbut" often turned a blind eye to this, since the company works with large volumes and reasonable prices.

The firm "Stroyzbut" offers PJSC "Kharkiv Tile Plant" the following terms of partnership:

every month, the company "Stroyzbut" buys a monthly volume of

production from the enterprise at a price of 5.9 cond. unit.

Deliveries must be made once a month. At the same time, PrJSC "Kharkivskiy Tile Factory" organizes freight forwarding service at its own expense and assumes the risks associated with the return of low-quality and damaged products in the process of loading/unloading and transportation of products (in accordance with the terms of the contract between PrJSC "Kharkivskiy tile factory" and transportation organizer).

Once a year, the company "Stroyzbut" undertakes to exhibit the products of PJSC "Kharkiv Tile Factory" at a specialized exhibition at its own expense. The contract is proposed to be concluded for one year, and in the case of satisfactory work of the parties, to be concluded for subsequent years as well.

4. Sale through the "Object" company.

Information about the company. "Objekt" company offers PJSC "Kharkiv Tile Plant" to enter into a distribution agreement for the exclusive sale of small tiles. The agreement should provide for the following: the "Objekt" company undertakes to buy 40% of the volume of production of PJSC "Kharkiv Tile Plant" at a price of 5.8 um. unit

Deliveries must be made once a month. The goods are delivered by the company "Object". Once a year, "Object" guarantees the organization of advertising campaigns, at its own expense. Kharkiv Tile Plant PJSC bears the risks of returning low-quality products and the risks associated with improper assortment selection.

The attitude of the partners towards the "Object" company as a reseller is ambiguous. Approximately half of the partners are satisfied with the work of the "Object" company, the other half have complaints about quality and price, and, first of all, regarding disruptions in delivery terms. There are also unsatisfactory reviews regarding marketing methods (organization of promotions).

5. Sale through small intermediaries.

There are many small firms on the market that can act as resellers for Kharkiv Tile Factory PJSC. The image of such firms leaves much to be desired. However, their territorial separation allows the enterprise to quickly announce itself and position its products not only in Kharkiv and the Kharkiv region, but also on many other markets of local and regional importance.

At the same time, PJSC "Kharkiv Tile Factory" has the opportunity to disperse deliveries in time, thus ensuring the possibility of even loading of production capacities and reducing storage costs.

These firms offer the following conditions. Purchase volumes may vary

within 50,000 hryvnias. Delivery, as a rule, is organized by the manufacturer at his own expense. All risks associated with the return of low-quality products and products damaged in the process of loading/unloading and transportation are assumed by PJSC Kharkiv Tile Factory or the transport intermediary (according to the terms of the contract between the producer and the transportation organizer). Check for compliance (since they work with many wholesalers) and the quality of work with customers (as a rule, they work with end consumers of finished products, and this is either an individual consumer or small firms engaged in the repair of apartments and offices) small trading firms are more difficult. According to statistical observations, partners and clients evaluate the work of such firms on a five-point scale at "3" and "4".

5. Give an economic assessment of your project according to the indicators given in the table. 3.

Table 3

Indicators of economic evaluation of the project

Indexes	Value
Production volume, thousand sq. m.	750
Volume of wholesale sales, thousand sq. m	
Wholesale price for 1 square meter, cond. unit	
The full cost of 1 square meter, cond. unit	4.09
Profit per 1 sq.m., cond. unit	
Product profitability, %	
Profitability of sales, %	

Note: Product profitability is calculated as the ratio of profit to cost, and profit on sales is calculated as profit to price.

Task:

1. To analyze the situation and identify the most important points in the process of decision-making for project measures, regarding the construction of distribution channels for the finished products of the enterprise.

2. Determine the project evaluation criteria.

3. These can be the highest profitability indicators or the rationality of

building logistics sales operations (relative to transportation, storage, etc.), or the reliability and reputation of logistics intermediaries involved in the distribution process.

4. It is necessary to compile a list of assessment criteria, rank them and assign a weight characteristic to each criterion. Then it is necessary to indicate the point rating scale of the selected criteria (for example, 10 points) and fill in the table. 4.

5. Points taking into account the weight are defined as the product of the assigned point by the weight assigned to this criterion.

6. The project that collects the highest amount wins.

7. At the final stage of the training class, a summation of the results of this stage of the training is carried out, the level of awareness and acquisition of practical skills are assessed, and the students - participants of the training are evaluated. construction channels distribution ready products of the enterprise.

8. Determine criterion evaluations projects.

These can be the highest indicators of profitability or the purpose of building logistical sales operations (relative to transport storage , etc.), or the reliability and reputation of logistics nicknames , that take participation in process distribution

It is necessary to compile a list of evaluation criteria, rank them and apply assign a weight characteristic to each criterion. Then it is necessary to mean scale ballroom evaluations chosen ones criteria (example, 10-point) and to fill table 4.

Weighted points are determined as the product of the score score on appropriated given criterion weight

That project, what will dial the highest sum - wins.

At the final stage of the training session, a sub- days results the second day training, assessment equal awareness and acquisition of practical skills, as well as assessment of studies dents - participants training are evaluated.

Table 4

Evaluation of projects

Rank of the parameter	Name parameter	Weight of the parameter				
			Project 1		Project N	
			Score	Score based on weight	Score	Score based on weight
1						
2						
3						
...						
n						

Stage No. 3 "Structural reorganization of the distribution system of finished products" (6 hours)

The purpose of the stage is to learn, under the conditions of this situation, to identify organizational problems related to the functional subsystem of logistics - distribution logistics, and to develop logistical options for the reorganization of this subsystem.

Content of the stage and methodical recommendations for implementation

JSC Kharkiv Hlibozavod is a manufacturer of bakery and confectionery products. The assortment list is more than 150 items.

The enterprise has production shops (pasta, gingerbread, confectionery, etc.) and auxiliary units (administration, sales and purchasing departments, accounting, transport department, AHV).

Analysis of the work of the company's sales department: the sales

department is part of the commercial service of the company, which also includes the transport department and the marketing department.

The staff schedule of the sales department is as follows:

Head of Department;

city store dispatcher;

senior customer service operator;

sales department operator;

regional sales manager;

city store managers (6 people);

regional trade representatives;

storekeepers of warehouses of finished products (4 persons);

freight forwarders of the sales department (10 people).

The total number of sales department is 30 people.

The distribution channels of the products of JSC Kharkiv Hlibozavod are as follows:

1. The enterprise has three own branded stores that carry out retail sales. One store is located at the enterprise, the other two are in the city districts. Delivery to stores is carried out by the company's own vehicles.

2. The company's products are also sold through city stores.

Delivery is carried out by the company's vehicle with the help of a roundabout. For this, the dispatcher of the sales department accepts applications by phone or through the city's store managers and organizes three trips around the city: one car for two or three districts of the city. Delivery of products is carried out by freight forwarders of the sales department and drivers of the transport department.

3. Products are shipped to private entrepreneurs (self-delivery).

4. Products are sold in nearby regions through regional trade representatives. Delivery to stores is carried out by the company's vehicles. The duties of regional representatives include the collection of applications from customers and the control of receivables, the analysis of regional sales markets.

5. Wholesale enterprises of the city, oblast and nearby oblasts buy the enterprise's products for the purpose of subsequent resale. This distribution channel implies self-delivery of products.

6. Individual contracts with independent wholesalers on the delivery of products by the company's vehicles are provided for (regardless of where the delivery is made: in the area of the city border or beyond it).

Thus, the enterprise has different channels of movement of goods. Of these, the first four channels are the most expensive (maintenance of own stores, wages of store staff, transport costs per product unit are high, because delivery is carried out in small batches, etc.). The latter two channels have much lower transport costs, not only due to larger lots, but also because most wholesale buyers bear this type of cost. However, the development of these sales channels is weak. The reason for this lies in insufficient attention to these methods of realization of finished products by the management of the enterprise, the consequence of which is the lack of adequate financing.

The average monthly sales volume of the enterprise is shown in the table. 5.

Table 5

Mid-month amount implementation enterprises

Type of sale	Sales volume, thousand UAH	Specific gravity, %
Brand trade in the city	0.4	6.2
Brand trade in the regions	0.8	12.3
Trade points of the city, including private ones entrepreneurs	1.3	20.0
Wholesale brokers of the city	1.1	16.9
Wholesale intermediaries in the regions	2.9	44.6
Together	6.5	100

The market capacity of the city is approximately 2.8 thousand UAH per month.

As can be seen from the table. 5, JSC Kharkiv Hlibozavod covers only a small part of this need.

Analysis of the activities of urban sales managers showed the inefficiency of their work. It is possible to increase the sales volume of the enterprise in this area by more than 50%. However, there are other obstacles to increasing sales volumes: the high price of products compared to competitors (high cost); strong competition on the market; inconsistency of quality with its price.

Analysis of the work of the transport department of the enterprise: 14 cars with a load capacity of 7-20; 5; 3; 1.2 tons are involved in customer service.

Analysis of the work of the transport shop showed the following bottlenecks:

1. In the current situation, mainly 5-t vehicles are sent on city trips. These are quite large vehicles, convenient for truckers when unloading products, but they have high fuel consumption in urban driving conditions. At the same time, the average tonnage of one trip around the city makes it quite possible to use 1.2 t machines, which can accommodate the entire assortment, which will lead to the elimination of re-sorting during loading/unloading. Fuel savings for such work will be up to 50%.

2. The purchase of fuel by motor vehicle drivers is carried out in cash, which leads to difficulties in controlling expenses.

3. The company's vehicles (mainly large-tonnage ones) return empty from the regions. There are no options for using motor vehicles during the return passage.

Tasks for working groups:

1. Give a brief description of the economic situation that has developed at JSC Kharkiv Hlibozavod.

2. Analyze the distribution channels of the enterprise's finished products. Determine which channels are direct and which are indirect; which are single-level, and which are multi-level.

3. To analyze the data on the volume of sales of products by enterprises, taking into account other available data, to draw conclusions about the most promising sales channel for finished products. What problems must be solved to develop these channels?

4. To propose a list of measures necessary for the reorganization or modification of distribution channels in order to increase the economic results of the enterprise (reduction of logistics costs, increase of sales volumes, etc.).

5. Give an answer to the question of whether measures will be necessary to expand or reduce the staff of the commercial service of the enterprise in the conditions of the implementation of your proposals, as well as how it is possible to solve the issue of financing, possible risks and information flows?

Summarizing the results of the stage: determine in each working group which parameters of the product distribution system assessment are of

greatest interest to the enterprise. Draw conclusions.

At the final stage of the training class, the results of the third stage of the training are summed up, the level of awareness and acquisition of practical skills is assessed, and the students participating in the training are evaluated.

Stage No. 4 "Development of routes and drawing up schedules delivery goods car by transport" (10 hours)

The purpose of the stage is to develop routes and traffic schedules of road transport in the process of goods delivery using the criterion of the minimum cost of delivery.

Content of the stage and methodical recommendations for implementation

The business game is devoted to management issues by transport in process wholesale sales goods. Realization functions merchandise supply needs significant investments capital in resource, to whose belong warehouses, stocks, technological equipment, personnel, as well as vehicles for supply of goods consumers. In logistics functions enters search ways achievement the maximum profit from using resources. Distribution is a concept that summarizes few functions. Efforts to improve the use of resources and reduce costs in the implementation of one of these functions should be considered in the context of the impact on the distribution process as a whole. It is necessary to plan in the field of distribution taking into account the nature of the impact of individual decisions on the process of goods supply in general. In this game, fleet operations are considered as an example of the implementation of one of the functions within the overall distribution process.

Achieving a compromise between the established level of services for the supply of goods consumers and limit transport expenses belongs to everyday problems commercial firms and requires skills operational planning. Offered business game foresees few simplifications. The conditions of the game select the most characteristic simulated situations that provide the necessary ambiguity and are the main events that must be perceived by the participants of

the game.

The order of the game

Three to five teams of two to four people can participate in the game. Participants are invited to develop routes and schedules for the delivery of goods for five days of the week. The team that will develop routes and schedules for the delivery of goods at the lowest cost wins. Before the beginning games her organizer instructs responds on question participants and explains the method of filling out calculation and analytical forms. After that, the teams receive a map-scheme of the service area, which reflects the location of the warehouse and the stores served (see app. 1); coordinates shops (see app. 2); list of store orders by day of the week (see app. 3); order fulfillment plan form (see app. 4); the form for calculating ring route parameters (see app. 5); the form of analysis of order delivery planning results (see app. 6); the form of the transport schedule (see app. 7).

After the briefing, the groups develop routes, draw up delivery schedules and calculate costs. Then the teams submit completed forms for analyzing the results of delivery planning orders the organizer games, which evaluates their and discusses results with participating teams.

Game conditions

1. Characteristics of the serviced district

Every member games plays back role manager with questions transport of a wholesale company that supplies various goods to 30 stores in the district. The map-scheme of the district has the form of a sheet of a notebook in a cell with plotted coordinate axes. The route consists of vertical and horizontal lines that can be used to travel from one point to another. At the same time, transport can go only along horizontal or vertical lines of the grid. A warehouse and serviced stores are located at the intersection of vertical and horizontal lines. Map scale: one cell — 1 km^2 , i.e. the length of the side of the cell — 1 km. This allows you to determine the distance between any two points on the map.

2. Goods delivered to stores.

Goods of three consolidated groups are delivered from the company's warehouses to stores: food (F), beverages (B) and detergents (D).

When loading motor vehicles, it is necessary to ensure that food products and detergents are not subject to general transportation. There are no other restrictions on the joint transportation of goods, that is, drinks can be

transported in the same car as detergents means or food goods

The goods of all three groups are packed in boxes of the same size. The cargo volume is equal to the number of boxes. In these units, the volume of the order, the carrying capacity of the car are measured, and the indicators of the use of transport are calculated.

3. Ordering stores (see app. 3).

4. Characteristics of used transport means.

Firm has little park transport means — six cars. This fleet can perform only a limited number of transports. For other deliveries, the company uses hired vehicles and only if all its own vehicles are loaded. The carrying capacity of our own transport is 120 units of cargo (boxes), hired - 150.

5. Calculation of working time transport.

The turnover of the vehicle includes the time of its loading in the warehouse, movement along the route, unloading in the store and additional time required for breaks in the driver's work. These periods calculated in this way.

5.1 Loading time at the warehouse

All cars scheduled for the trip leave the warehouse at 8:00^{a.m.}. The time of the first loading of the vehicle is not included in the working hours.

It is possible that the vehicle will make several trips during the day. In this case, each subsequent trip will be preceded thirty minute loading.

5.2 Travel time route

5.3 The average speed on the route is assumed to be 20 km/h, that is, a car covers 1 km in 3 minutes (this means that during this time it passes one cell on the map).

5.4 Time unloading.

Take at the rate of 0.5 min per unit of cargo (for example, 76 boxes will be unloaded in 38 minutes).

5.5. Interruption of the driver's work.

If the length of the route involves the driver staying behind driving a car for more than 5.5 hours, i.e. more than 110 km, then to his 30 min should be added to the working time for a break.

5.6. Total working time.

The maximum permissible daytime working time for the vehicle and the driver is 11 hours. Under no circumstances the delivery schedule cargo should not exceed this time.

The main duration of a driver's working day is 8 hours. After this his

working time is paid according to the overtime payment system up to 11 hours per day.

6. Expenses for maintenance and operation of vehicles.

Every company that has its own transport incurs conditional fixed and conditional variable expenses for its maintenance. Daily fixed expenses for maintaining one own vehicle are 10 \$. Conditional variable costs depend on of the specific cost of 1 km of mileage and for own transport is 0.5 \$. Expenses for the use of hired transport also contain a constant and a variable component. For a rented car the company pays daily 50 \$ regardless of the degree of its exploitation. In addition, the company pays 1 \$ for each kilometer traveled by the hired vehicle. These rates include order registration, forwarding services and cargo insurance.

The choice of two options is to have your own vehicles or hiring them is an important element of the logistics firm's strategic planning. At the same time, the second option allows you to save capital, but involves transport costs.

7. Overtime costs.

As mentioned, the main duration of the driver's working day is 8 hours, including a possible break on the way. Over this time to of the maximum allowed number of working hours (11 hours), overtime is calculated to the nearest minute and is paid at the rate of 15 \$ per hour of work (i.e. 0.25 \$ per minute of work).

8. Other types of expenses.

If the schedule involves the use of hired transport for transportation of beverages, a security guard should be hired for security purposes. Such a service for one guard per car costs 20 \$. In other words, if two are used in one day hired vehicles for transporting drinks, costs of the employer on this day will be 40 \$ (regardless of number of rental car trips).

The company's own transport is usually equipped with safety equipment, which eliminates the need to use additional security.

9. Fines.

9.1. Incomplete transport loading.

If a vehicle (owned or hired) is sent on a route with less than the established minimum volume of cargo (90 cargo units), then a fine should be taken into account, which will be 2 \$ for each under loaded unit (regardless of vehicle ownership).

If the company's own transport was not used for work during the day,

the constant cost of its daily maintenance should be included in the calculation of transport costs — 30 \$.

9.2. Incomplete use of transport by time.

Minimal the duration of the working day is 6 hours. Fine for vehicles, that work for less than 6 hours per day, for the company's own machines is 10 \$, for hired – 15\$.

9.3. Incomplete fulfillment of the store order.

Game participants must make every effort to deliver on time goods to customers. If, for some reason, the delivery is delayed, the player will be charged a fine of 3 \$ for each day of delay for each unit of undelivered goods.

Task

Based on the initial data, it is necessary to develop routes and schedules for the delivery of the ordered goods to the district stores; to calculate costs associated with the delivery of goods to stores; analyze the developed scheme of delivery of goods.

Methodical instructions

The teams develop the first circular route ^{*}, while performing the necessary calculations. Then according to the received the data make up the order fulfillment plan (see app. 4):

Approximate ring routes can be developed, for example, in the following way. We gradually rotate the imaginary ray emanating from point 0 counterclockwise (or clockwise), and begin to "erase" the stores depicted on it from the coordinate field (the effect of a windshield wiper). As soon as total the volume of orders from "erased" stores will reach the capacity of the vehicle, we fix the sector served by one ring route and outline store service sequence. Note that this method gives accurate results when the distance between nodes of the transport network according to the existing ones paths is directly proportional to the distance in a straight line.

Column 1 indicates the given route number; column 2 lists shops included in the route; in columns 3–5, indicate the number of units (boxes) of food products, detergents and of drinks ordered by each store. Further, in the form calculate the parameters of the ring route Overtime work, possible fines, as well as other costs must be taken into account in cost calculations, related to the delivery of goods.

We will give an example of arranging the first route and performing certain calculations based on it in the form of a table.

Table 6

An example of calculating the parameters of the first route

Route number	Store number	Order volume, units			Calculations
		F	D	B	
1	2	3	4	5	6
1	29	8	6	—	Volume of transported cargo $P = 120$ boxes The length of the route $l = 42$ km Duration of operation of the vehicle on the route $T = 42 * 3 + 120 * 0.5 = 186$ min Expenses for the execution of the route $C = 42 * 0.5 = 21$ \$ The way to shops 0–1–29–30–3–4–6–7–0
	30	12	8	—	
	1	10	5	—	
	3	22	12	—	
	4	5		—	
	6	16	10	—	
	7	6	—	—	

Note. The way around the shops is recorded in the form of a sequence of numbers, corresponding to the numbers of the stores served. For example, the entry 0–1–5–7–0 means that the car left the warehouse (item 0) to store 1, then 5, 7 and returned to the warehouse (item 0).

After determining the length of the route, the received information are entered in the transport schedule (see Appendix 7). An example of filling out the schedule for the first route of the first car is given below.

Table 7

Transport schedule form

Vehicle number	The first trip		Second trip		The third trip		Total operating time of the car, hours
	Time of dispatch from the warehouse	Time of arrival at the warehouse	Time of dispatch from the warehouse	Time of arrival at the warehouse	Time of dispatch from the warehouse	Time of arrival at the warehouse	
1	8 00	11 06	11 36	etc.			
2	8 00						
3	8 00						
4	until 8 ⁰⁰						

...							
-----	--	--	--	--	--	--	--

The decision to use a certain car on duty the calculated route is accepted on the basis of a comparison of the time actually worked by the car and the time length of the route. We remind you that the established tariffs are paid services of only those cars that have worked for 6-8 hours per day (less than 6 hours — fine, more than 8 hours — overtime pay).

After completing all orders, the teams analyze the results of planning the supply process in the form of app. 6.

Stage No. 5 Solving cases (8 hours)

Logistics scenarios

What will the logistics marketplace look like in five to ten years? That's still an open question. We take a closer look at how some of the key disruptions facing the industry may interact. We have done this by describing four logistics scenarios. In each of these, technology plays a key role, but affects the market in different ways. In two of the models, new entrants are the primary drivers of change, while incumbents retain a dominant position in the other two. The nature of market dynamics, especially the level of collaboration versus competition, also varies between the scenarios (1–4).

1. Sharing the PI(e) Incumbents increase their efficiency and reduce their environmental impact by collaborating more, and developing new business models, such as sharing networks. Research around the 'Physical Internet' (PI) leads to shared standards for shipment sizes, greater modal connectivity and IT requirements across carriers.

From manifesto to reality: defining the Physical Internet. The term 'Physical Internet' (PI or π); was first coined by Professor Benoit Montreuil of the Georgia Technology Institute in 2011. It's based on the idea that physical objects can be more efficiently moved around if they become more standardised and share common channels, like data packets on the internet. That requires modularisation and standard interfaces and protocols. In addition, hubs and networks across transport modes will need to be better synchronised, and IT applications and networks will also need to operate together. Montreuil's manifesto proposes π containers in standard dimensions that can be efficiently stacked together, potentially with sensors if

appropriate, and sealable for security purposes. To make the most of these, π movers and π loading systems will need to be developed too, as well as more efficient transport models.

<p>Customer expectations</p> <ul style="list-style-type: none"> • More sustainable supply chains • Willingness to explore new kinds of collaboration with their LSP 	<p>New entrants</p> <ul style="list-style-type: none"> • Incumbents play a dominant role in directing and using shared networks • Minor role of new entrants
<p>Technology</p> <ul style="list-style-type: none"> • 'PI' standards lead to new solutions for loading and packing • Consistent, shared communications standards and data exchange 	<p>Collaboration vs. competition</p> <ul style="list-style-type: none"> • Increase in collaboration, based on consistent physical standards • Incumbents focus on defining unique value propositions

Figure 1. Characteristics of scenario 1

2. Start-up, shake-up. New entrants become significant players and take market share from the incumbents through new business models based on data analytics, blockchain, or other technologies. One or two become dominant in specific segments. Last-mile delivery becomes more fragmented, with crowd-delivery solutions gaining ground. These start-ups collaborate with incumbents and complement their service offers.

<p>Customer expectations</p> <ul style="list-style-type: none"> • Low-cost personalised service with real-time visibility • Choice of delivery channels • Participation in sharing economy 	<p>New entrants</p> <ul style="list-style-type: none"> • Start-ups drive technology development and innovation • App developers become full-on integrators
<p>Technology</p> <ul style="list-style-type: none"> • Crowd-sharing platforms increase • Blockchain technology gains ground and facilitates collaboration 	<p>Collaboration vs. competition</p> <ul style="list-style-type: none"> • Collaboration between start-ups and incumbents • Start-ups complement incumbents' service offers, particularly around last-mile delivery and supporting functions

Figure 2. Characteristics of scenario 2

3. Complex competition. Big retail players expand their logistics offerings to fill their own needs and beyond, effectively moving from customers to competitors. They purchase small logistics players to help cover major markets, and draw on their deep understanding of customer behaviour to optimise supply chains. Technology firms who used to be suppliers to the industry enter the logistics arena too, offering logistics services and turning into competitors.

<p>Customer expectations</p> <ul style="list-style-type: none"> • Customers rapidly digitise supply chains • Autonomous vehicles become accepted by customers 	<p>New entrants</p> <ul style="list-style-type: none"> • New entrants are predominantly major players from online retail, and technology-based industries
<p>Technology</p> <ul style="list-style-type: none"> • Warehouse robotic solutions increase in sophistication • Autonomous vehicles achieve market maturity • 3-d printing-based manufacturing gains scale 	<p>Collaboration vs. competition</p> <ul style="list-style-type: none"> • Major retail and logistics platforms compete for dominance • Retailers initially develop logistics capability to support own operations, but gradually move into 3rd party provision

Figure 3. Characteristics of scenario 3

4. Scale matters Incumbents increase efficiency by streamlining their operations and taking full advantage of new technology. They fund promising new technologies with venture capital cash, and attract new staff with critical skills and expertise in competition to create a dominant market position. Major players merge to extend their geographical scale and enhance their cross-modal coverage. Access to capital to fund these investments becomes increasingly important.

<p>Customer expectations</p> <ul style="list-style-type: none"> • Customers expect 	<p>New entrants</p> <ul style="list-style-type: none"> • New entrants are acquired
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efficiency, speed, and digital fitness <ul style="list-style-type: none"> • They want higher levels of user friendliness and comfort 	by incumbents as soon as they develop promising technologies or business models
Technology <ul style="list-style-type: none"> • Technologies such as data analytics enhance efficiency in large logistics networks • Corporate-led incubators and venture arms drive technology development 	Collaboration vs. competition <ul style="list-style-type: none"> • Competition heats up between incumbents, putting pressure on margins • Scale is a necessary condition to achieve the efficiency to remain competitive

Figure 4. Characteristics of scenario 4

Questions

For each scenario, find out:

What's driving this scenario?

What are the implications for logistics companies?

What are the implications for customers?

The system of control and evaluation of training results, the success of students' studies

The university uses a 100-point accumulative system for evaluating the learning outcomes of higher education applicants.

Evaluation of training results is aimed at checking the training participant's ability to demonstrate the degree of assimilation of new material, growth of knowledge and improvement of skills.

Emphasis is placed on improving the student's ability to use new information and acquired skills to achieve personal and professional goals, on the student's readiness to generate his own ideas and find ways to solve possible problems. This presupposes that the student is critical of the array of information provided and concentrates efforts on the most relevant aspects of training.

The production of new ideas and strategies for overcoming

difficulties is the basis of the organization of the training process and the determination of methods for evaluating its results.

Assessment measures aim to determine whether students understand the long-term purpose of their learning and to see how they will apply the new knowledge, skills and attitudes.

Important areas of evaluation of training results are the benefits received by students (training results) and the strategic construction of the training (the program, which includes attending classes, the level of demonstrated activity, the selection, use and provision of information, the level of presentation and reporting tasks, compliance rules developed at the beginning of the training, independent work, final paper). Accordingly, the trainer's task is not only to impart knowledge and demonstrate skills, but also to find out exactly how students learn new things and how to help them determine the best way to use existing and new resources. The evaluation of the training session is presented in the table. 8.

Table. 8.

Evaluation of each stage of training according to criteria

Criterion	The specific gravity of the criterion	Components of the criterion	The specific weight of the components of the criterion	Stage 1, point	Stage 2, point	Stage 3, score	Stage 4, point	Stage 5, point	Total, score
The result of the training	0.4	participation in the presentation of group work results	0.2	2	3	3	10	2	20
		accuracy and completeness of indicator calculations	0.2	2	3	3	10	2	20
Independent work of students during	0.2	independence	0.2	2	3	3	10	2	20

training									
Extracurricular independent work of students based on training results	0.4	drawing up a training report	0.3	3	4.5	1.5	15	3	30
		protection of the training report	0.1	1	1.5	1.5	5	1	10
Total, score	1	x	1	10	15	15	50	10	100

The goal, tasks and competencies that are formed during the training, defined by the trainer, are the basis for the situational tasks. The trainer is more interested in objective evaluation, because regardless of the quality of teaching, different students can use different aspects of the acquired qualification in practice and do it in different ways to achieve their own special goals.

Students are more interested in testing the effects of the training because the new skills are directly applicable to their daily work. Self-assessment, implementation of individual projects and analysis of training results are an integral part of training. Each student is responsible for making effective use of new resources to achieve the goal.

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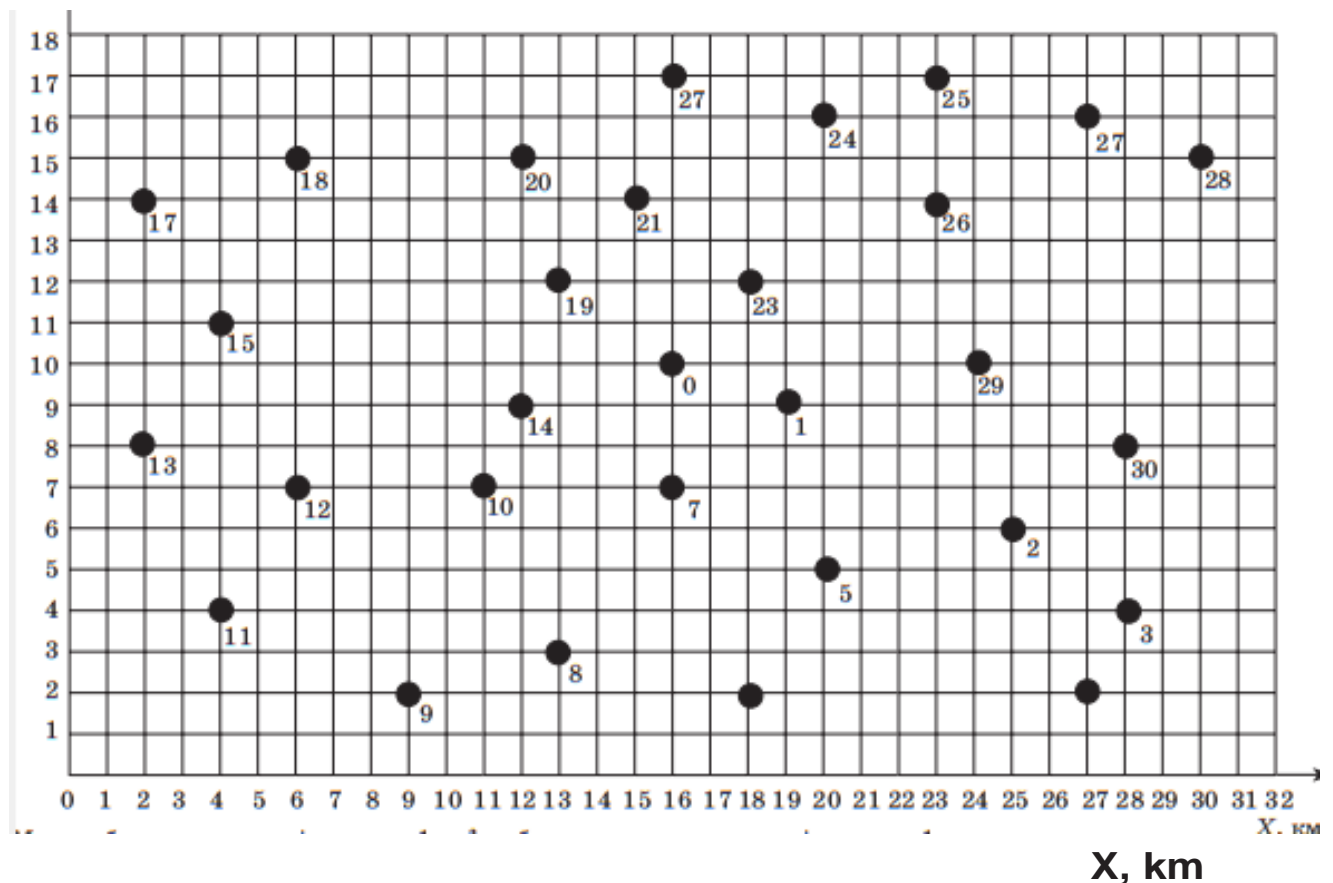
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Appendix

Appendix 1

Map-diagram of the service area

Y, km



Note. Dots on map marked stores — consumers of the material flow. In the lower right cell of the store is indicated him number. Within district is placed distributive warehouse — point 0.

Appendix 2

Store coordinates

Store number	Store coordinates	
	X	Y
1	19	9
2	25	6
3	28	4
4	27	2
5	20	5
6	18	2
7	16	7
8	13	3
9	9	2
10	11	7
11	4	4
17	6	7
13	2	8
14	12	9
15	4	11
16	8	12
17	2	14
18	8	15
19	13	12
20	12	15
21	15	14
22	16	17
23	18	12
24	20	16
25	23	17
26	23	14
27	27	16
28	30	15
29	24	10
30	28	8

Note. Coordinates distributive warehouse: X— 16; Y— 10.

Appendix 3

Shop orders

Store number	Monday			Tuesday			Wednesday			Thursday			Friday		
	F	D	B	F	D	B	F	D	B	F	D	B	F	D	B
1	—	5	4		—	8	10	5	—	2	—	16	20	—	6
2	10	8	12	12	8	—	24	—	10	10	4	—	—	4	12
3	22	12	10	24	8	19	20	10	15	10	5	5	10	11	15
4	5	—	9	—	—	8	8	4	6	25	4	6	8	—	17
5	13	17	10	20	10	12	17	—	8	25	5	15	25	—	5
6	16	10	—	15	5	25	12	6	20	20	5	11	10	5	18
7	10	4	—	17	4	10	6	2	15	13	8	7	6	4	10
8	10	7	12	10	4	—	20	—	6	5	2	5	22	—	—
9	14	5	3	—	—	10	14	6	9	20	5	6	14	6	6
10	20	10	6	20	—	8	10	7	15	—	—	11	4	3	8
11	22	10	10	14	6	12	25	5	10	—	—	—	9	5	5
12	12	4	3	10	—	—	20	—	16	10	6	5	25	—	11
13	25	10	18	9	5	7	—	5	8	8	5	14	10	4	6
14	10	5	—	—	5	10	15	6	10	—	—	—	15	6	10
15	8	3	5	6	6	—	10	—	5	20	9	16	8	—	—
16	5	2	3	—	—	5	8	6	8	—	—	—	20	—	5
17	23		16	9	8	—	11	—	5	22	16	16	15	5	12
18	7	3	10	14	—	16	10	12	20	—	—	—	20	—	5
19	6	4	—	5	4	8	7	—	—	18	—	7	6	8	—
20	12	4	—	—	5	6	15	5	7	15	—	8	24	—	8
21	—	—	20	12	10	—	25	4	15	20	10	25	8	5	—
22	10	4	6	6	4	7	10	—	—	6	—	3	11	—	—
23	5	—	—	10	8	12	7	8	10	12	—	5	5	5	22
24	5	—	—	25	10	16	5	10	—	5	—	8	16	—	—
25	7	2	8	7	5	8	—	—	—	7	5	10	—	—	8
26	17	12	10	20	—	6	20	—	10	—	—	—	20	20	20
27	15	—	7	23	16	21	—	—	12	23	—	21	—	—	13
28	10	8	10	10	8	—	10	—	—	20	20	25	10	20	—
29	8	6	6	8	6	3	10	—	—	16	4	—	15	12	12
30	12	8	10	13	3	6	12	8	10	22	—	8	12	8	10

Note. F — food products; D — detergents; B — drinks . The numbers indicate the number of boxes of the ordered product.

Appendix 4

Order execution plan										
Monday					Tuesday					etc.
Route number	Store number	Order size , boxes			Route number	Store number	Order size , boxes			
		F	D	B			F	D	B	
1	2	3	4	5	1	2	3	4	5	
1					1					
2					2					
3					3					
4					4					
5					5					
6					6					

7					7					

Appendix 5

The form for calculating ring route parameters

Indicator	Monday												Together
	Route number												
	1	2	3	4	5	6	7	8	9	10	...		
Volume of transported cargo, boxes													
Route length, km													
Operating time of the vehicle on the route, hours													
Costs on execution of the route, \$													
Indicator	Tuesday												Together
	Route number												
	1	2	3	4	5	6	7	8	9	10	...		
Volume of transported cargo, boxes													
Route length, km													
Working time on the route, h													
Costs on execution of the route, \$													

Appendix 6

Form of analysis of order delivery planning results

Indicator	Formula for calculation	Monday	Tuesday	Wednesday	Thursday	Friday	Together in a week
Total costs for delivery of orders, \$	C_t						
Volume of transported cargo, boxes	V_t						
Mileage of the transport, km	L_t						
Number of trips	N						
The coefficient of utilization of the cargo capacity of the transport	$K = \frac{V_t}{N \cdot Q}$						
Delivery costs per 1 km of mileage, \$	$C_d = \frac{C_t}{L_t}$						
Costs for transportation of a unit of cargo, \$	$C_u = \frac{C_t}{V_t}$						

Note. Q — carrying capacity of transport, boxes.

Appendix 7

Transport schedule

Vehicle number	The first trip		Second trip		The third trip		Total working time, hours
	Departure from the warehouse	Arrival at the warehouse	Departure from the warehouse	Arrival at the warehouse	Departure from the warehouse	Arrival at the warehouse	

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