

National Aviation University
Handout material for graduation work
Bachelor's degree
Organization of Aviation Works and Services Department



**Efficiency of using or outsourcing by
transport and logistics companies**

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- **The purpose** - to analyze, substantiate and develop practical recommendations on the possibilities for integrating outsourcing into the logistics system of the retail network.
- **The object of the study** – activity of the company LLC "Silpo Logistics" .
- **The subject of the study** – using of outsourcing by transport and logistics companies.

Theoretical and methodological principles of efficiency of outsourcing activities in transport and logistics organizations

Outsourcing is a business practice in which services or job functions are farmed out to a third party.



Outsourcing of logistics services has benefits:

- Allows to increase business efficiency
- Leaves more free time for profile activities
- Provides previously unavailable features
- Reduces enterprise costs
- Automates production processes
- Provides stability and security



Outsourcing of logistics services can reduce the cost of :

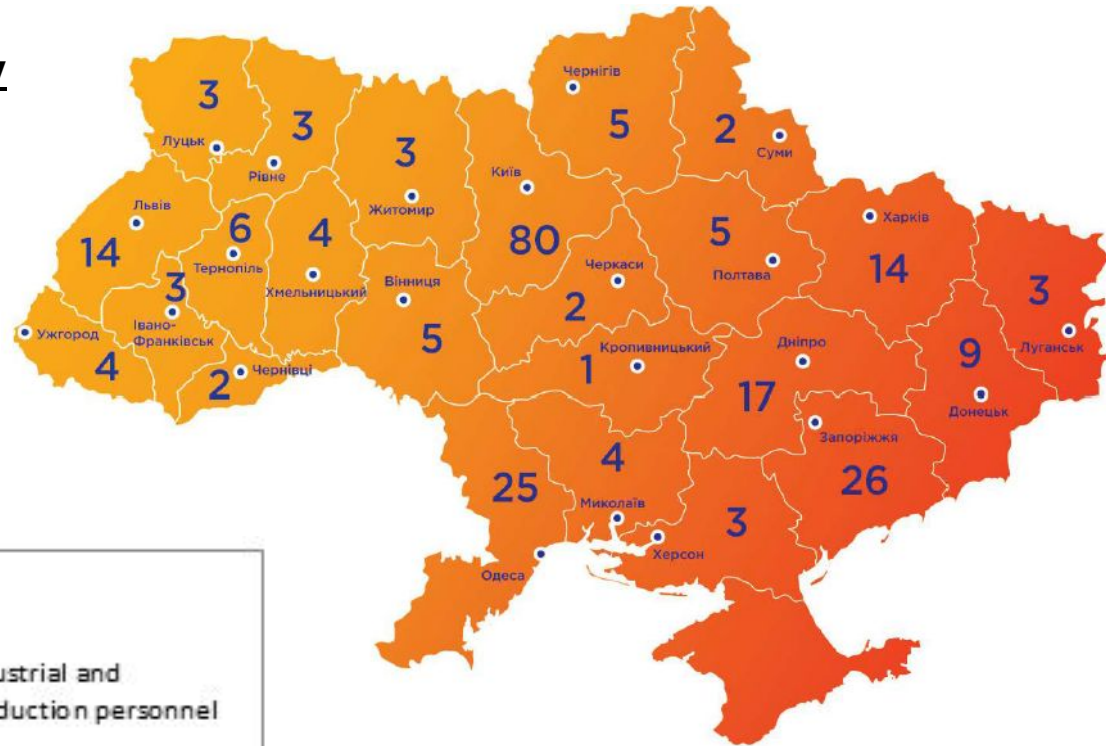
- Rental and maintenance of premises for a warehouse, office or garage
- Staff salaries (as well as bonuses, vacation, sick leave and other compensations)
- Training and advanced training of full-time specialists
- Equipment and digital technology
- Transport and its maintenance
- Cargo delivery (including storage and maintenance)
- Organization of international cargo transportation
- Taxes, insurance and other contributions

General characteristics of Silpo Food LLC

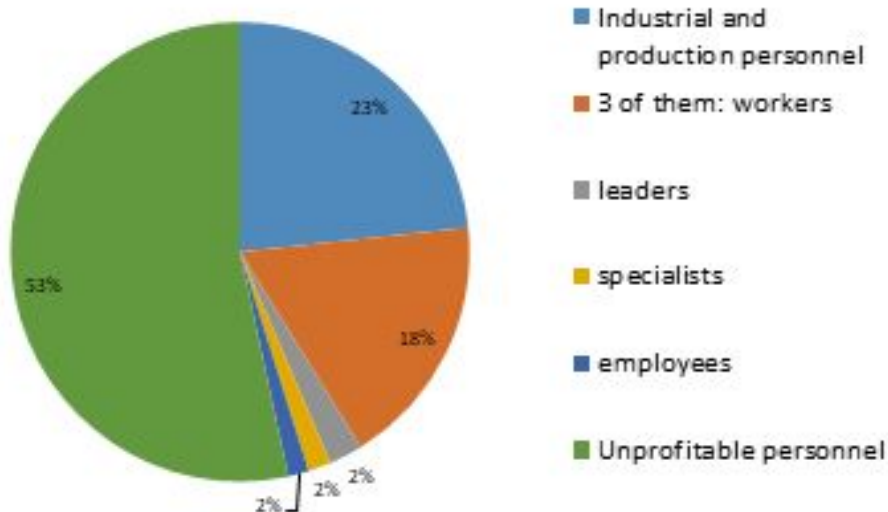
Silpo-Food Limited Liability Company

is owned by the Fozzy Group.

The company was established in 1998. Fozzy Group is one of the largest trade and industrial groups in Ukraine, has more than 600 outlets throughout the country and more than 35,000 items.

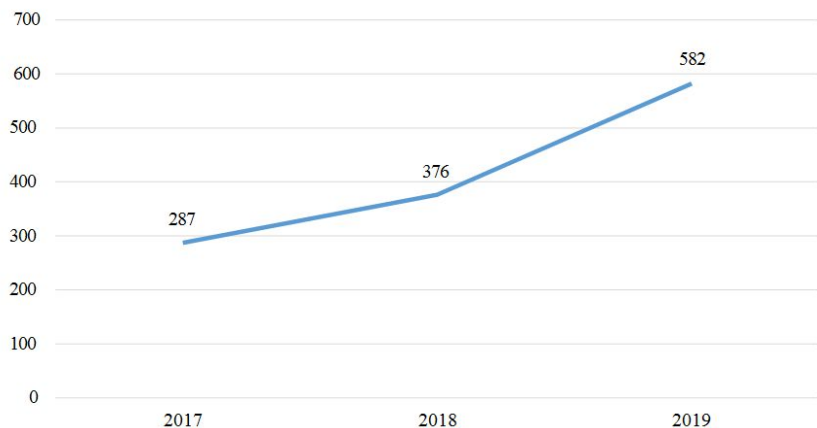


Staff structure

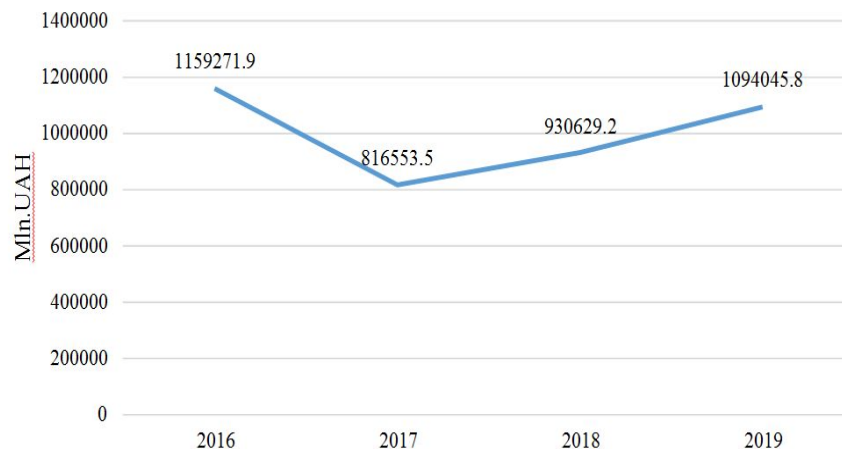


Research of operational activity of Silpo Food LLC

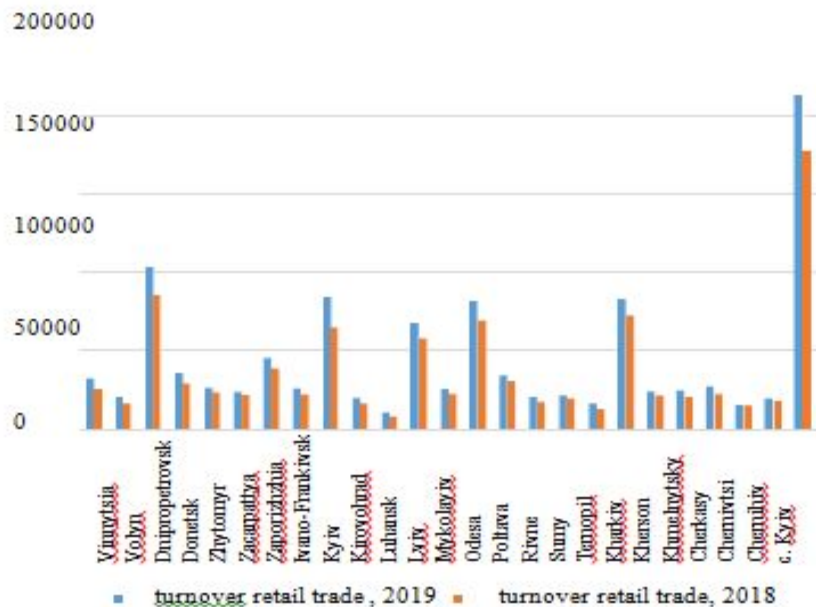
Number of freight cars



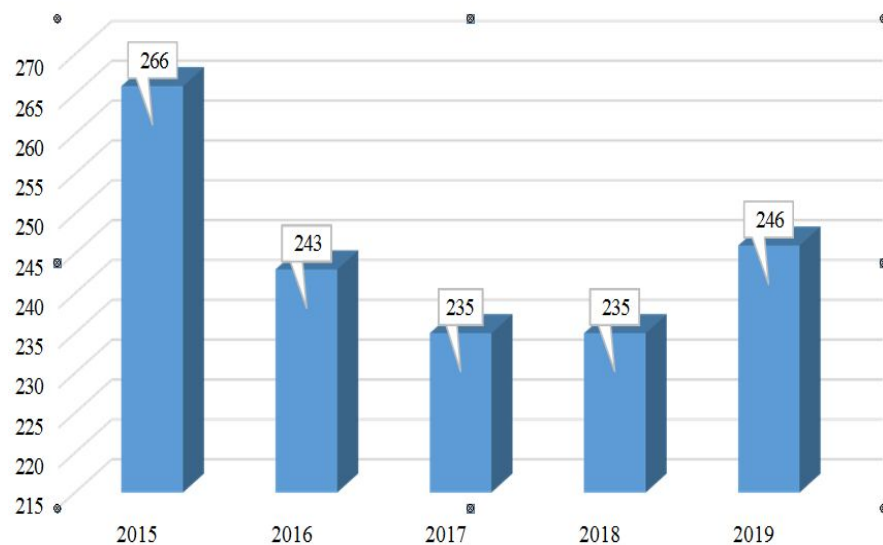
Volumes of retail trade



Regional structure turnover retail trade in Ukraine

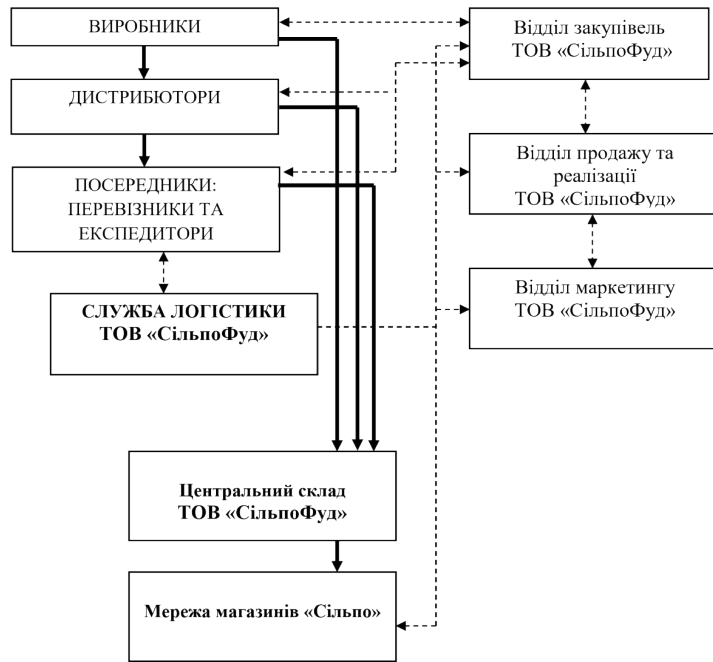


Dynamics shops «Silpo Food» LLC

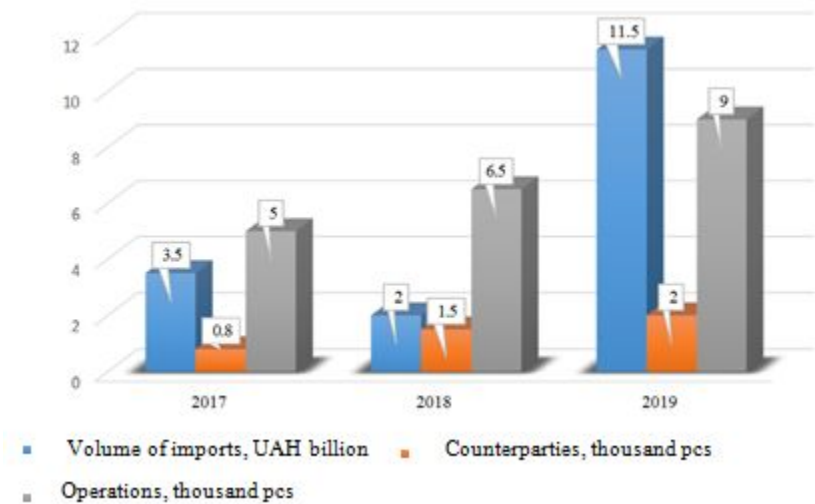


Research of operational activity of Silpo Logistics LLC

Scheme of logistics systems in «Silpo Food» LLC



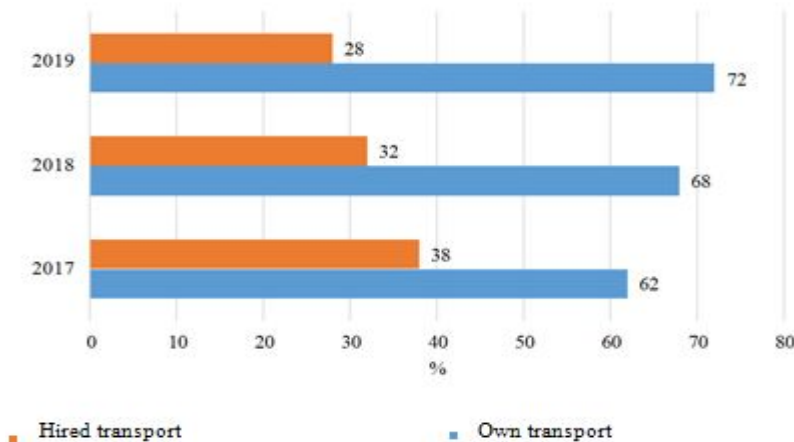
Dynamics indicators of import



Dynamics received / shipped auto with central warehouse

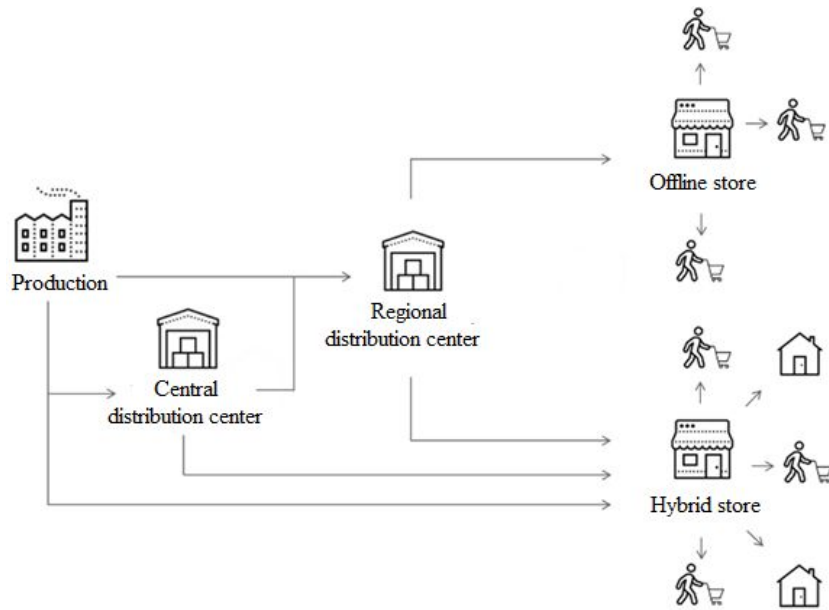


Share of own and hired transport



Forecasting the types of cooperation and competitive relations of Silpo Logistics LLC in the near future with the use of outsourcing

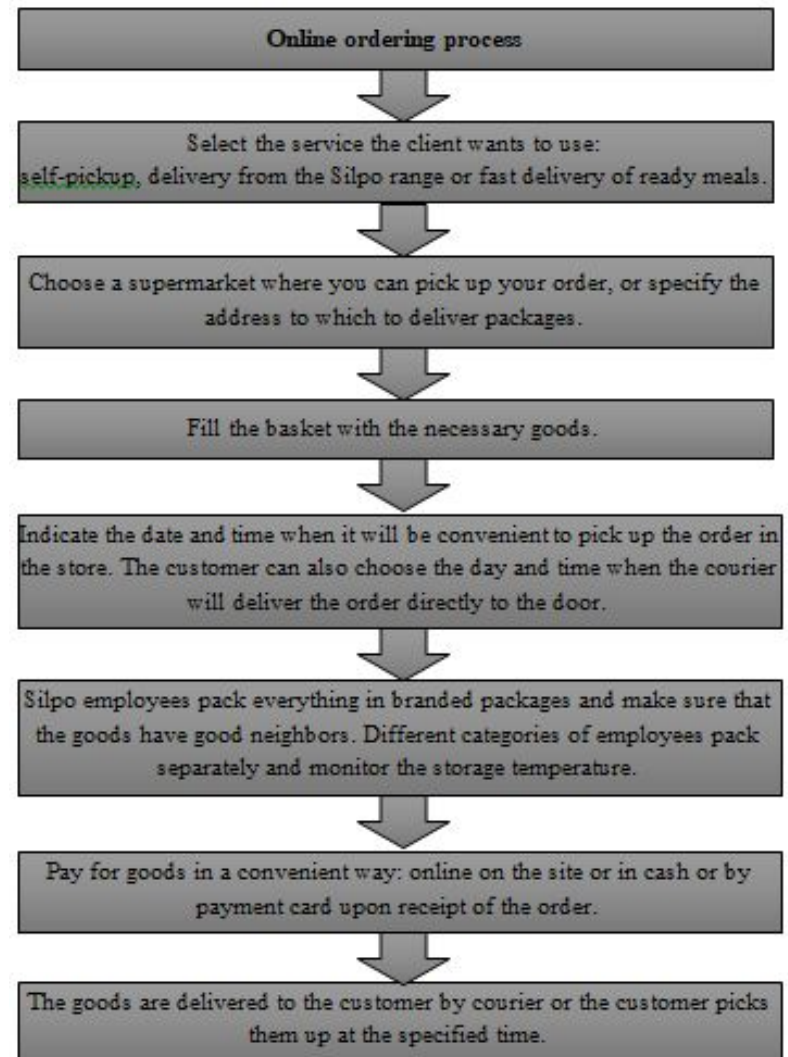
Supply chain hybrid supply chain



A new hybrid model of the store has emerged, based on technology and automation, consumer behavior research, inventory, design and human resource involvement.

The hybrid store model will allow customers to seamlessly interact and shop both offline in the physical store and online among a wide range of retail categories and product lines. This new model remains convenient for offline shopping, but at the same time uses the logistical opportunities for online shopping.

The process of making an online order in the stores «Silpo»



Forecasting the number of customers who will use the delivery service

The method of extrapolation of time series

$$A_t = a + b * t, \quad (3.1)$$

$$a = \frac{\sum A_n - b * \sum t_i}{n}, \quad (3.2)$$

$$b = \frac{n \sum A_n * t_i - \sum t_i * \sum A_n}{n \sum t_i^2 - (\sum t_i)^2}, \quad (3.3)$$

where A_n – the projected number of customers; a , b – parameters of the equation, which are by the method of least squares; t – the number of the year.

Data for calculating the projected number of Silpo customers

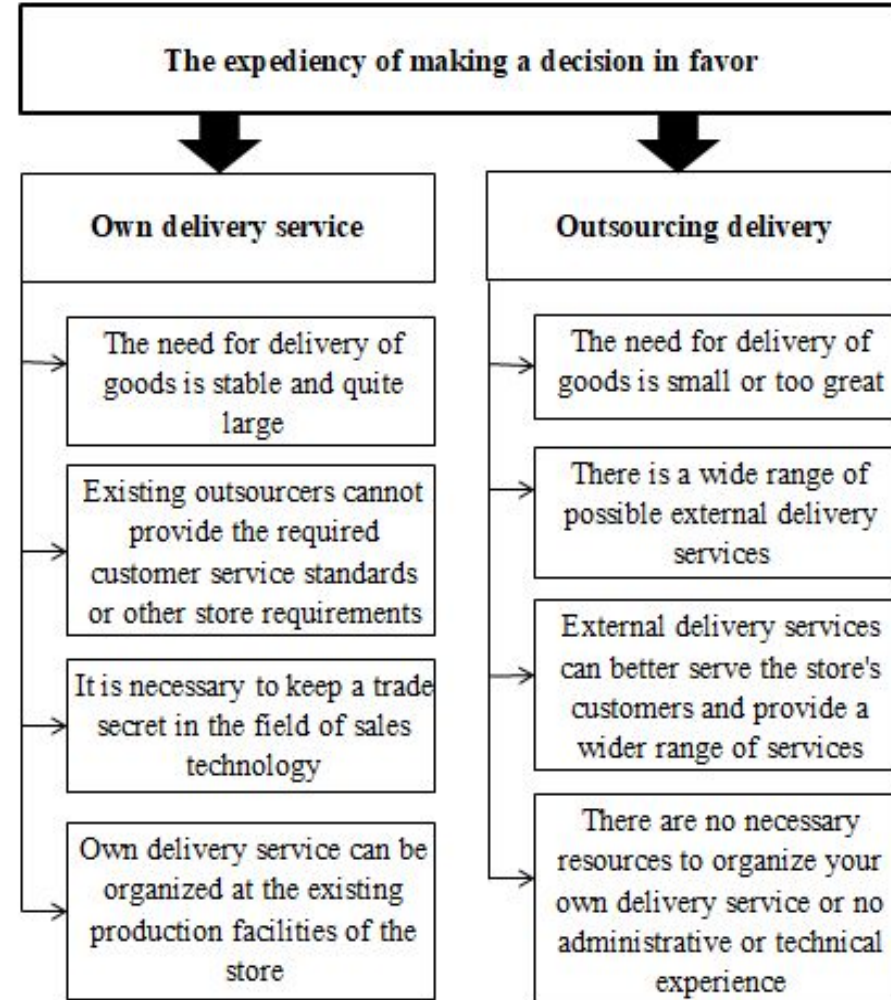
Year	ti	An, persons	An*ti	ti ²
2017	1	554070	554070	1
2018	2	684375	1368750	4
2019	3	773070	2319210	9
2020	4	862130	3448520	16
2021	5	943537	4717687	25
Total	15	3817182	12408237	55

Estimated number of «Silpo» customers

Year	ti	Number of clients (total), persons	Percentage of customers using delivery service, %	Number of delivery service customers, persons
2017	1	554070	-	-
2018	2	684375	-	-
2019	3	773070	-	-
2020	4	862130	15	129320
2021	5	943537	30	283061
2022	6	1050443 (forecast)	45	472700
2023	7	1146112 (forecast)	50	573056
2024	8	1241781 (forecast)	60	745069
2025	9	1337450 (forecast)	65	869343

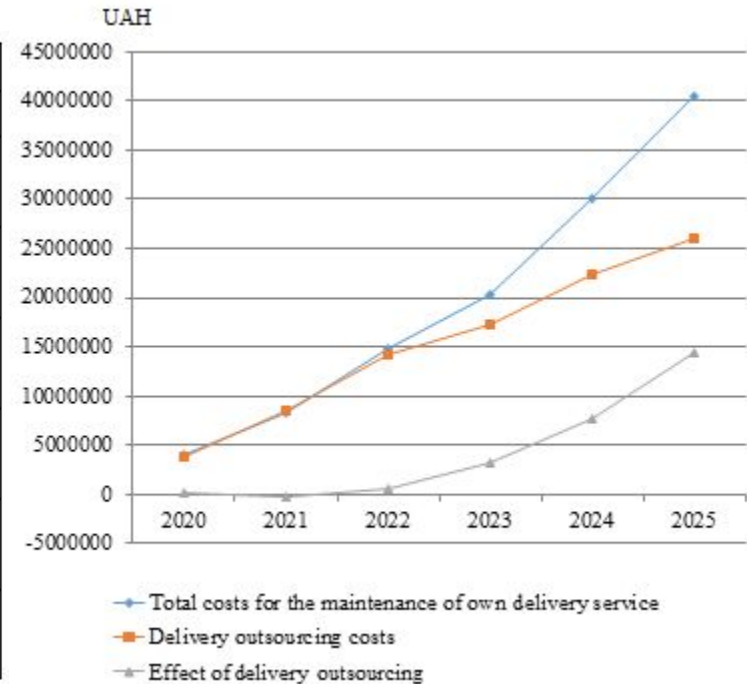
Comparing advantages and disadvantages of different approaches to organizing delivery service

Own delivery service		Outsourcing delivery service	
Advantages	Disadvantages	Advantages	Disadvantages
Improving the sustainability of the grocery store	Large initial costs for organizing your own delivery service	As a rule, higher quality and lower cost of delivery service due to the specialization of the outsourcer	Dependence of the grocery store on the outsourcer and market opportunities for the organization of delivery of goods
Reducing the store's dependence on the environment and market fluctuations	Increasing the complexity of store management due to the dispersion of activities	Concentration of the store's efforts on the main activity	Additional costs for coordination and management of the relationship with the outsourcer
Ability to directly manage the quality of door-to-door delivery organization	Reducing the flexibility to respond to changes in the consumer market (the need to change the entire delivery process)	Flexibility to change the types of products and services provided due to the possibility of changing the outsourcer	Loss of direct quality management of door-to-door delivery services



Calculations of total costs for the organization of its own delivery service and its outsourcing

Indicators	2020	2021	2022	2023	2024	2025
Number of clients, persons	129320	283061	472700	573056	745069	869343
Capital costs for the maintenance of its own delivery service, UAH	1500000	1650000	1815000	1996500	2196150	2415765
Costs for servicing 1 client with own delivery service, UAH	20,0	23,4	27,4	32,0	37,5	43,8
Variable costs for the maintenance of its own delivery service, UAH	2586390	6623633	12941568	18356285	27923499	38119776
Total costs for the maintenance of its own delivery service, UAH	4086390	8273633	14756568	20352785	30119649	40535541
Costs of outsourcing delivery service, UAH	3879585	8491837	14180986	17191686	22352065	26080282
Effect of outsourcing delivery service, UAH	206805	-218204	575582	3161099	7767584	14455259



As we can see from the chart, already in 2022 our project recommendations will be cost-effective and will bring Silpo additional profits.

The method of choosing a service provider based on integrated assessment

Criteria	Carriers					Rank
	Silpo Logistics	Glovo	Nova Poshta	Justin	Zakaz.ua	
1. Availability of refrigeration units (or thermal bags)	yes	yes	yes	no	yes	-
2. Reliability of deliveries	0,91	0,87	0,95	0,85	0,95	1
3. The average cost of delivery, UAH	50	60	90	60	69	2
4. Total delivery time, hours	4	1,5	4	8	2	4
5. Quality of service	Very good	Very good	Excellent	Good	Excellent	5
6. Cargo safety	Very good	Good	Excellent	Good	Excellent	3
7. Staff qualifications	Excellent	Satisfactorily	Excellent	Good	Very good	6

Expert assessments according to selected criteria



Calculation of integral assessment



According to the calculations, the most attractive carrier is Zakaz.ua.

Consequently, LLC "Silpo Logistics" needs to consider the expediency of transferring the function of online goods delivery to Zakaz.ua.

Criteria	Weighting factor	Extremum	Reference value	Carriers							
				Silpo Logistics		Glovo		Nova Poshta		Zakaz.ua	
				Z_i	D_i	Z_i	D_i	Z_i	D_i	Z_i	D_i
Reliability of deliveries	0,286	max	0,95	0,958	0,274	0,916	0,262	1,00	0,286	1,00	0,286
The average cost of delivery	0,238	min	50	1,00	0,238	0,833	0,198	0,556	0,132	0,725	0,173
Total delivery time	0,143	min	1,5	0,375	0,054	1,00	0,143	0,375	0,054	0,750	0,107
Quality of service	0,095	-	-	0,913	0,087	0,913	0,087	0,975	0,093	0,975	0,093
Cargo safety	0,190	-	-	0,913	0,174	0,782	0,149	0,975	0,186	0,975	0,186
Staff qualifications	0,048	-	-	0,975	0,046	0,53	0,025	0,975	0,046	0,913	0,043
Integral assessment (ΣD_i)	1	-	-	-	0,873	-	0,864	-	0,797	-	0,887

Thank you for attention!