

Ukrainian State University of Railway Transport
Department of Management, Public Administration and HR Technologies

STRATEGIC MANAGEMENT OF LOGISTICS ACTIVITIES OF THE ENTERPRISE IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

Explanatory Report and Analytical Calculations
to the Master's Qualification Thesis
under the educational program "Sustainable Logistics and Supply Chain Management"
specialty 073 "Management"

KPM 073. 12111571 П3

Prepared by the Master's Degree Student
(second cycle of higher education)
(the work was performed independently in
accordance with academic integrity
principles)
Group 210-SL-D24
Daryna KYRYLOVA

Supervisor: Associate Professor, PhD
(Economics)
Iryna NAZARENKO

Reviewer: Professor, Doctor of Public
Administration
Yulia KRYKHTINA

2025

ABSTRACT

This qualification work includes 12 presentation slides and a 73-page explanatory report (A4 format), containing 8 figures, 13 tables, and 82 referenced sources.

Keywords: STRATEGIC MANAGEMENT, LOGISTICS ACTIVITIES, SUSTAINABLE DEVELOPMENT, INTEGRAL INDICATORS, STRATEGY MODELLING.

The object of the study is the logistics activities of the enterprise within the system of strategic management.

The purpose of the work is to substantiate and develop a system of strategic management of the enterprise's logistics activities under the conditions of sustainable development.

The thesis examines the theoretical foundations of strategic logistics management within the sustainable development paradigm and summarises modern models and tools, including digitalisation, integrated logistics approaches, and green logistics principles. Using the case of LLC "Nikomed," an analysis of logistics, financial, and environmental performance for 2021–2024 was conducted, key trends were identified, and integral sustainability indicators were constructed.

Strategic directions for the development of logistics activities were formulated, a model of strategic trajectories and forecast scenarios was developed, and recommendations were provided to enhance management efficiency, environmental responsibility, and digital transformation.

The obtained results can be applied to improve the systems of strategic management of logistics activities in pharmaceutical enterprises and other organisations implementing the principles of sustainable development.

АНОТАЦІЯ

Дана кваліфікаційна робота включає в себе 12 слайдів презентації, 73 аркуші пояснювальної записки формату А4, що містять 8 рисунків, 13 таблиць та 82 використане літературне джерело.

Ключові слова: СТРАТЕГІЧНЕ УПРАВЛІННЯ, ЛОГІСТИЧНА ДІЯЛЬНІСТЬ, СТАЛИЙ РОЗВИТОК, ІНТЕГРАЛЬНІ ІНДИКАТОРИ, МОДЕЛЮВАННЯ СТРАТЕГІЙ.

Об'єктом дослідження є логістична діяльність підприємства в системі стратегічного управління.

Метою роботи є обґрунтування та розроблення системи стратегічного управління логістичною діяльністю підприємства в умовах сталого розвитку.

У роботі розглянуто теоретичні засади стратегічного управління логістикою в контексті сталого розвитку, узагальнено сучасні моделі та інструменти, включаючи цифровізацію, інтегровані логістичні підходи та принципи «зеленої логістики».

На прикладі ТОВ «Нікомед» проведено аналіз логістичної, фінансової та екологічної результативності за 2021–2024 рр., визначено ключові тенденції та побудовано інтегральні показники сталості.

Сформовано стратегічні напрями розвитку логістичної діяльності, розроблено модель стратегічних траєкторій і прогнозні сценарії, а також надано рекомендації щодо підвищення ефективності управління, екологічної відповідальності та цифрової трансформації.

Отримані результати можуть бути використані для вдосконалення стратегічного управління логістичною діяльністю підприємств фармацевтичної галузі та організацій, що впроваджують принципи сталого розвитку.

Ukrainian State University of Railway Transport

Faculty of Economics

Department of Management, Public Administration and HR Technologies

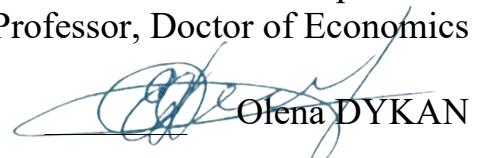
Higher Education Level: Master

Educational Programme: Sustainable Logistics and Supply Chain Management

Specialty: 073 "Management"

APPROVED

Head of Department
Professor, Doctor of Economics



Olena DYKAN

September 09, 2025.

ASSIGNMENT FOR THE MASTER'S QUALIFICATION WORK

Daryna KYRYLOVA

1 Topic «Strategic Management of the Enterprise's Logistics Activities under Conditions of Sustainable Development»

supervisor Iryna Nazarenko, PhD in Economics, Associate Professor

approved by the Order of the Faculty of Economics dated February 07, 2025 No. 58/25

2 The deadline for submission of completed work by a higher education applicant is December 12, 2025

3 Initial data, Explanatory notes, and reports on the production and economic activities of the enterprise for 2021–2024; enterprise reporting for 2021–2024; regulatory, legislative, and scientific literature on strategic management and logistics activities.

4 Content of the calculation and explanatory note (list of issues to be developed)

Scientific Approaches to the Essence of Strategic Management in the Context of Sustainable Logistics. Models of Strategy Management for Logistics Systems and Supply Chains. Functions, Methods and Instruments of Strategic Management of Logistics Processes. Organisational and Economic Characteristics of the Enterprise and Its Logistics System. Analysis of the Efficiency of Logistics Processes of LLC "Nikomed". Assessment of the Enterprise's Strategic Position Using Sustainability Indicators. Assessment of the Enterprise's Strategic Position Using a SWOT Matrix. Assessing the Impact of War-Related Risks on the Strategic Resilience of Logistics Activities. Formation of Strategic Directions for the Development of Logistics Activities in the Context of Sustainable Development. Modelling Strategic Trajectories of Logistics Development Using Integrated Sustainability Indicators and Forecasting Tools.

5 List of graphic material

1 Theoretical and Methodological Foundations of Strategic Management in the System of Sustainable Logistics – two slides. 2 in the Context of Sustainable Development of

Strategic Management of the Logistics Activities of LLC “Nikomed” – three slides. 3 Strategic Management of Logistics Activities at LLC “Nikomed” in the Context of Sustainable Development – five slides.

6 Individual Section Consultants

Section	Surname, initials, title and academic degree Consultant	Signature, date	
		The task was issued by	task Took

7 Assignment Date September 09, 2025

CALENDAR PLAN

Stage name	Deadline for the implementation of the stages of work	Note
1 Theoretical and Methodological Foundations of Strategic Management in the System of Sustainable Logistics	10.10.2025	
2 Assessment of Strategic Management of the Logistics Activities of LLC “Nikomed”	05.11.2025	
3 Strategic Management of Logistics Activities at LLC “Nikomed” in the Context of Sustainable Development	08.12.2025	
Graphic part	10.12.2025	

Higher education applicant

 Daryna KYRYLOVA

Head

 Iryna NAZARENKO

Contents

Introduction	7
1 Theoretical and Methodological Foundations of Strategic Management in the System of Sustainable Logistics	10
1.1 Scientific Approaches to the Essence of Strategic Management in the Context of Sustainable Logistics	10
1.2 Models of Strategy Management for Logistics Systems and Supply Chains	13
1.3 Functions, Methods and Instruments of Strategic Management of Logistics Processes	18
Conclusions to Chapter 1	24
2 Assessment of Strategic Management of the Logistics Activities of LLC “Nikomed”	27
2.1 Organisational and Economic Characteristics of the Enterprise and Its Logistics System	27
2.2 Analysis of the Efficiency of Logistics Processes of LLC “Nikomed”	34
2.3 Assessment of the Enterprise’s Strategic Position Using Sustainability Indicators	39
2.4 Assessment of the Enterprise’s Strategic Position Using a SWOT Matrix	45
Conclusions to Chapter 2	48
3 Strategic Management of Logistics Activities at LLC “Nikomed” in the Context of Sustainable Development	50
3.1 Assessing the Impact of War-Related Risks on the Strategic Resilience of Logistics Activities	50
3.2 Formation of Strategic Directions for the Development of Logistics Activities in the Context of Sustainable Development	53

					KPM 073. 12111571 П3		
Rev.	Sheet	Document No.	Signature	Date			
Prepared by	Kyrylova D.V.						
Reviewed by	Nazarenko I.L.						
Standards Control	Krykhtina Y.O.						
Approved by	Dykan O.V.						
<i>Strategic Management of the Enterprise’s Logistics Activities in the Context of Sustainable Development</i>					Ref..	Sheet	Sheets
						5	73
					<i>UkrSURT</i>		

3.3 Modelling Strategic Trajectories of Logistics Development Using Integrated Sustainability Indicators and Forecasting Tools	56
Conclusions to Chapter 3	61
Conclusions	63
References	65

References

- 1 Ansoff H. I. *Corporate strategy*. New York : McGraw-Hill, 1965.
- 2 Chandler A. D. *Strategy and structure: chapters in the history of the American industrial enterprise*. Cambridge, MA : MIT Press, 1962.
- 3 Mintzberg H. *The rise and fall of strategic planning*. New York : Free Press, 1994.
- 4 Porter M. E. *Competitive strategy: techniques for analyzing industries and competitors*. New York : Free Press, 1980.
- 5 Bowersox D. J., Closs D. J. *Logistical management: the integrated supply chain process*. New York : McGraw-Hill, 1996.
- 6 Christopher M. *Logistics and supply chain management*. 5th ed. Harlow : Pearson FT Press, 2016.
- 7 Elkington J. *Cannibals with forks: the triple bottom line of 21st century business*. Oxford : Capstone, 1997.
- 8 McKinnon A., Browne M., Whiteing A., Piecyk M. (eds.). *Green logistics: improving the environmental sustainability of logistics*. 3rd ed. London : Kogan Page, 2021.
- 9 Seuring S., Müller M. From a literature review to a conceptual framework for sustainable supply chain management. *Journal of Cleaner Production*. 2008. Vol. 16. P. 1699–1710.
- 10 Teece D. J., Pisano G., Shuen A. Dynamic capabilities and strategic management. *Strategic Management Journal*. 1997. Vol. 18, No. 7. P. 509–533.
- 11 Sun X., Li D., Zhang X., Li Y. Sustainable logistics in the Industry 4.0 era: a systematic review. *Environmental Science and Pollution Research*. 2022.
- 12 OECD. *Supply chain resilience review 2025*. Paris : OECD Publishing, 2025.
- 13 Porter M., Kramer M. Creating shared value. *Harvard Business Review*. 2011. Vol. 89, No. 1–2. P. 62–77.

14 Kuzmin O. Ye., Melnyk O. H. Strategic management of the enterprise. Lviv : Lviv Polytechnic National University, 2020.

15 Korol S. V. Sustainable development of logistics systems: concept and tools. Kyiv : Kyiv National Economic University, 2021.

16 Dyba M. I., Levchenko O. M. Conceptual foundations of sustainable logistics development. *Economy and Society*. 2022. No. 38.

17 United Nations. The sustainable development goals report 2023. New York : United Nations, 2023.

18 Mentzer J. T., DeWitt W., Keebler J. S. et al. Defining supply chain management. *Journal of Business Logistics*. 2001. Vol. 22, No. 2. P. 1–25.

19 Reyes O., Banerjee S., Zúñiga L. Smart logistics: digital transformation and sustainability. *Sustainability*. 2023. Vol. 15, No. 4. Article 3572.

20 Holweg M., Pil F. K. The power of relationship: collaborative planning, forecasting and replenishment. *International Journal of Logistics Management*. 2018. Vol. 29, No. 3. P. 923–945.

21 Kaplan R. S., Norton D. P. The balanced scorecard: translating strategy into action. Boston : Harvard Business School Press, 1996.

22 Wheelen T. L., Hunger J. D. Strategic management and business policy: toward global sustainability. 14th ed. Pearson, 2018.

23 Figge F., Hahn T., Schaltegger S., Wagner M. The sustainability balanced scorecard: linking sustainability management to business strategy. *Business Strategy and the Environment*. 2002. Vol. 11, No. 5. P. 269–284.

24 Forrester J. W. Industrial dynamics. Cambridge, MA : MIT Press, 1961.

25 Boudella S., Hifi M., Wu T. A multi-objective green logistics model for sustainable transport planning. *Transportation Research Part E: Logistics and Transportation Review*. 2021. Vol. 152. Article 102436.

26 Ivanov D., Dolgui A. Digital supply chain management and Industry 4.0: fundamentals, strategies and applications. Cham : Springer, 2020.

27 European Commission. Digital logistics and sustainable supply chain transformation report 2024. Brussels : European Commission Publications, 2024.

28 Arvis J.-F., Ojala L., Shepherd B., Ulybina D., Wiederer C. Connecting to compete 2023: trade logistics in an uncertain global economy – the logistics performance index and its indicators. Washington, DC : World Bank, 2023. 74 p.

29 Butko T. V., Prymachenko H. O., Kovalov A. O., Tarasov K. O., Kolisnyk A. V. Research on prognostication of passenger traffic volumes in railway transport under uncertainty conditions. Review of Economics and Finance. 2023. Vol. 21. P. 236–245. URL: <https://refpress.org/ref-vol21-a22/>

30 Franco C. A simulation model to evaluate pharmaceutical supply chain costs in hospitals: the case of a Colombian hospital. DARU Journal of Pharmaceutical Sciences. 2020. Vol. 28. P. 1–12.

31 Global pharmaceutical logistics market size and share analysis: growth trends and forecasts (2023–2028). URL: <https://www.technavio.com/report/pharmaceutical-logisticsmarket-industry-analysis>

32 Jetly G., Rossetti C. L., Handfield R. A multi-agent simulation of the pharmaceutical supply chain. Journal of Simulation. 2012. Vol. 6, No. 4. P. 215–226. DOI: 10.1057/jos.2011.26

33 Krykhtina Y., Leonenko N., Khmyrov I., Stankevych S. Role of the European Green Deal as a transformation mechanism of state policies for the European integration of Ukraine. Ukrainian Journal of Ecology. 2021. Vol. 11, No. 5. P. 97–101. DOI: 10.15421/2021_213

34 Levchenko V. O. Modelling commodity flows of drugstore chains using system dynamics tools. Technology Audit and Production Reserves. 2015. No. 3/5(23). P. 28–34.

35 Lomotko D. V., Prymachenko H. O., Kovalova O. V., Shkurenko O. V., Hryhorova Y. I. Use of modern logistics technologies in terms of saving resources. IOP Conference Series: Materials Science and Engineering. 2021. Vol. 1021, No. 1. Article 012041.

36 Moosivand A., Ghatari A. R., Rasekh H. R. Supply chain challenges in pharmaceutical manufacturing companies: using qualitative system dynamics

methodology. *Iranian Journal of Pharmaceutical Research*. 2019. Vol. 18. P. 1103–1116.

37 Nazarenko I. L., McKay Hoppman M. Intellectual entrepreneurship in Ukraine in wartime. *Bulletin of Transport Economics and Industry*. 2022. No. 80. P. 119–132.

38 Pierre D. *International logistics: the management of international trade operations*. 6th ed. Cicero Books, LLC, 2021. 866 p.

39 Proceedings of ASIM (Association for Simulation). URL: <https://www.asim-gi.org/asim>

40 Proceedings of EUROSIM (Federation of European Simulation Societies). URL: <https://www.eurosim.info/publications>

41 Proceedings of the Winter Simulation Conference. URL: <http://meetings2.informs.org/wordpress/wsc2023>

42 Prymachenko H. O., Kovalov A. O., Shelekhyan N. I., Shul'diner J. V., Hryhorova Y. I. Research on work organization technology of Ukrainian logistics operators in e-commerce based on railway transport on the Ukraine–Asia route. *Journal of University of Zulia (Revista de la Universidad del Zulia)*. 2021. No. 32. P. 486–499. DOI: <http://dx.doi.org/10.46925/rdluz.32.28>

43 Sarder M. D. *Logistics transportation systems*. Amsterdam : Elsevier, 2020. 454 p.

44 Shibusaki R., Watanabe D., Kawasaki T. Global and international logistics. *Sustainability*. 2021. Vol. 13. Article 5610. DOI: 10.3390/su13105610

45 Sokolovska Z., Klepikova O., Ivchenko I., Ivchenko O. Models-simulators in business decision-making processes for pharmaceutical enterprises. *Lecture Notes in Business Information Processing*. 2024. Vol. 486. P. 3–18. URL: https://link.springer.com/chapter/10.1007/978-3-031-51664-1_1

46 Sustainable inland transport connectivity indicators. Geneva : UNECE, 2022. URL: <https://unece.org/info/publications/pub/371986>

47 Tongzon J. L. *Principles of international logistics*. Cheltenham : Edward Elgar Publishing, 2022. 360 p.

48 Viana J., van Oorschot K., Ardal C. Assessing resilience of medicine supply chain networks to disruptions: a proposed hybrid simulation modeling framework. Proceedings of the 2021 Winter Simulation Conference. URL: <https://www.anylogic.com/upload/iblock/818/6dardcykf1ns5r2cskrmv8lqz5h2tqza.pdf>

49 The AnyLogic Company website. URL: <http://www.anylogic.com>

50 Yildiz T. Logistics and supply chain management: fundamentals and strategies. 2023. URL: https://www.researchgate.net/publication/369302425_Logistics_and_Supply_Chain_Management_Fundamentals_and_Strategies

51 Alkema V. H. Logistics support of international trade. Scientific Notes of KROK University. 2017. Vol. 46. P. 82–92.

52 Balabanova L. V., Hermanchuk A. M. Logistics : textbook for higher education institutions. Lviv : Magnolia 2006, 2021. 368 p.

53 Bezuhal L. S., Yurchenko N. I., Ilchenko T. V., Palchyk I. M., Volovyk D. V. Logistics : study guide. Dnipro : Porohy, 2021. 252 p. URL: https://dspace.dsau.dp.ua/bitstream/123456789/4959/1/NP_Logistics.pdf

54 Vasyliev O. L., Storozhylova U. L. Prospects for the use of sustainable logistics in Ukraine. Bulletin of Transport Economics and Industry. 2024. No. 86. P. 63–68. URL: <http://lib.kart.edu.ua/handle/123456789/24293>

55 Volokhova I. V., Volokhov V. A., Lukianova O. M. Research of logistics management problems. Bulletin of Transport Economics and Industry. 2024. No. 86. P. 177–188. URL: <http://lib.kart.edu.ua/handle/123456789/24302>

56 Volokhova I. V., Volokhov V. A., Lukianova O. M. Factors influencing logistics support in Ukraine under wartime conditions. Bulletin of Transport Economics and Industry. Kharkiv : Ukrainian State University of Railway Transport, 2022. No. 80. P. 106–110.

57 Galkin A. S., Levada V. P., Davidich Yu. A., Davidich N. V., Vakulenko K. Ye. International transportation: theory and practice : study guide. In 2 books. Book 1. Kharkiv : O. M. Beketov National University of Urban Economy in Kharkiv, 2018. 182 p.

58 Hryhorak M. Yu., Lutsenko I. S. International logistics. Guidelines for coursework preparation : study guide. Kyiv : Igor Sikorsky Kyiv Polytechnic Institute, 2023. 64 p. URL: <https://ela.kpi.ua/handle/123456789/65220>

59 Hrytsenko I., Savchenko L. V. Ecologistics : study guide. Kyiv : National Aviation University, 2021. 259 p.

60 Hromovyk B. P. Peculiarities of logistics service implementation for patients in the pharmaceutical care system. Management, Economics and Quality Assurance in Pharmacy. 2011. No. 3. P. 44–49.

61 Hromovyk B. P., Miroshnikova I. O. Pharmaceutical logistics during wartime. In: Current problems of sectoral economics, management and logistics : proceedings of the 10th international scientific and practical Internet conference with international participation. Kharkiv, November 10, 2022. Kharkiv : National University of Pharmacy, 2022. P. 189–190.

62 Hromovyk B. P., Puzanova I. P. Pharmaceutical waste as a serious problem of the ecological system “human – medicinal product – environment”. Clinical Pharmacy, Pharmacotherapy and Medical Standardization. 2015. No. 3–4. P. 64–69.

63 Hromovyk B. P., Ungurian L. M. Pharmaceutical logistics: focus on patient care : monograph. Lviv : RASTR-7, 2013. 212 p.

64 Twelve key trends in the pharmaceutical industry in 2024. URL: <https://promoboz.com/journal/uncategorized/12-najvazhlyvishyh-trendiv-farmatsevtychoyi-galuzi-u-2024-rotsi>

65 Zahurskyi O. M. Supply chain management. Kyiv, 2023. 333 p.

66 Integrated ABC/FMR/VED analysis of medicinal product consumption (case of hepatoprotectors) : methodological recommendations / comp. by V. P. Popovych, B. P. Hromovyk. Kyiv : Ukrainian Center for Scientific Medical Information and Patent and Licensing Work of the Ministry of Health of Ukraine, 2012. 21 p.

67 Krykavskyi Ye., Pokhylchenko O., Fertch M. Logistics and supply chain management : study guide. Lviv : Lviv Polytechnic Publishing House, 2017. 801 p.

68 Marchenko V. M., Shutuk V. V. Logistics : textbook. 2nd ed., revised and expanded. Kyiv : National University of Food Technologies, 2022. 334 p.

69 Guidelines for preparation of qualification thesis for applicants of the second (master's) level of higher education, specialty 073 "Management" / comp. by O. V. Dykan, Yu. O. Krykhtina ; Department of Management and Administration. Kharkiv : Ukrainian State University of Railway Transport, 2021. 35 p.

70 International logistics : electronic textbook / ed. by O. M. Sokhatska. Ternopil : West Ukrainian National University, 2022. 370 p.

71 International logistics services : lecture notes / comp. by I. Ye. Yarova. Sumy : Sumy State University, 2020. 107 p.

72 Nehoda A., Rusak D. International logistics and global supply chains : study guide in schemes. Kyiv : Taras Shevchenko National University of Kyiv, 2023. 268 p.

73 Nechyporuk A., Kochubei D. Pharmaceutical logistics under martial law. The International Scientific and Practical Journal Commodities and Markets. 2023. Vol. 46, No. 2. P. 4–15. DOI: 10.31617/2.2023(46)01

74 Posylkina O. V., Sahaidak R. V., Hromovyk B. P. Pharmaceutical logistics : monograph / ed. by O. V. Posylkina. Kharkiv : National University of Pharmacy Publishing House : Zoloti Storinky, 2004. 320 p.

75 Samostian V. R. Effective use of approaches for simulation modeling of logistics processes. Modern Technologies in Mechanical Engineering and Transport. 2020. No. 2 (15). P. 127–133.

76 Student academic reporting. Text part (explanatory note). General requirements for structure, presentation and formatting : methodological guide on compliance with standardization control requirements / comp. by L. M. Kozar et al. Kharkiv : Ukrainian State University of Railway Transport, 2014. 46 p.

77 Ungurian L. M., Hromovyk B. P. Pharmaceutical practice: logistics, information, neuroeconomic and social aspects : monograph. Lviv : Prostir-M, 2016. 155 p.

78 Quality characteristics of pharmaceutical care in relation to its terminological structural elements and logistics service for patients : scientific and methodological recommendations / comp. by M. V. Korolov, B. P. Hromovyk, L. R.

Nihhosian ; recommended by the Academic Council of Odesa National Medical University. Lviv : Liha-Pres, 2020. 15 p.

79 Cold logistics: current challenges and trends for 2024. URL: <https://trans.info/ua/holodna-logistyka-aktualni-problemy-ta-trendy-na-2024-rik-376608>

80 Cheliadinova N. H., Myroshnychenko Yu. V., Kudelia V. I. Management of logistics risks under force majeure conditions. Economic Studies. 2021. No. 3 (33). P. 75–80. URL: <http://lib.kart.edu.ua/handle/123456789/18395>

81 Chychun V., Zeleniuk O. Formation of international logistics chains under strategic changes in the competitive environment. Economy and Society. 2024. No. 59. DOI: 10.32782/2524-0072/2024-59-23.

82 Krykhtina Yu., Kyrylova D. Strategic logistics resilience as a determinant of enterprise economic security under wartime disruptions. Collection of Scientific Papers with the Proceedings of the 3rd International Scientific and Practical Conference «Innovations in Science: From Theoretical Foundations to Practical Impact» (November 24-26, 2025, Antwerp, Belgium). European Open Science Space, 2025. 184-188 p. URL: <https://www.eoss-conf.com/en/archive/innovations-in-science-from-theoretical-foundations-to-practical-impact-24-11-25/>