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Sumets O.M. Doctor of Economics, Professor, Professor of The Integration Academy of Personnel Management (Ukraine)

ORCID – 0000-0002-7116-3857
Researcher ID – H-9132-2018
Scopus author id: 6507343164

THE EVENTUAL MODEL OF THE ALGORITHM FOR DESIGNING THE LOGISTICS SYSTEM OF A PRODUCTION ENTERPRISE

Oleksandr Sumets. "The eventual model of the algorithm for designing the logistics system of a production enterprise." *The logistics system is one of the most important subsystems of the production enterprise. This system is responsible for the timeliness and efficiency of logistics activities at the enterprise. Creating the logistics system for the company is based on solving a set of problems, where the development of an algorithm for its design is key one.*

The article proposes an eventual model of the algorithm for designing the logistics system of a production enterprise. The design algorithm was developed taking into account the activities of oil and fat industry enterprises. Structurally, the algorithm consists of three phases - the formation of an information array for the design of the logistics system, the design of the logistics system, the installation of the logistics system project at the enterprise. The optimal number of stages was substantiated for each design phase. According to the design stages, a list of works that must be performed in the process of project development and installation was described. Information on the time spent on each job at the stages of design and installation of the logistics system was provided. It is indicated that the development and installation of a logistics system at a manufacturing plant can take three to four months. The obtained research results are important for the top management of enterprises. They will allow to be guided in productivity of process of designing and installation of logistic systems. In the future, this will provide an opportunity to correctly draw up a logistics plan and adjust the development strategy of the enterprise.

The material presented in the article is useful for researchers in terms of further consideration of improving existing or developing new algorithms and techniques for designing logistics systems of industrial enterprises.

Keywords: eventual model, logistics system, design algorithm, design phase, design stage, enterprise.

Олександр Сумець. «Евентуальна модель алгоритму проєктування логістичної системи виробничого підприємства». *Логістична система являє собою одну із найбільш важливих підсистем виробничого підприємства. Ця система відповідає за своєчасність і ефективність здійснення на підприємстві логістичної діяльності. Створення логістичної системи для підприємства базується на вирішенні комплексу завдань, де розроблення алгоритму її проєктування є ключовим.*

У статті запропонована евентуальна модель алгоритму проєктування логістичної системи виробничого підприємства. Алгоритм проєктування розроблено з огляду на діяльність підприємств

оліежирової галузі. Структурно алгоритм складається із трьох фаз - формування інформаційного масиву для проєктування логістичної системи, проєктування логістичної системи, інсталяція проєкту логістичної системи на підприємстві. Для кожної фази проєктування обґрунтована оптимальна кількість етапів. За етапами проєктування описано перелік робіт, які обов'язково виконуються у процесі розробки і інсталяції проєкту. Наведена інформація щодо витрати часу на виконання кожної роботи за етапами проєктування і інсталяції логістичної системи. Вказано, що розробка і інсталяція логістичної системи на виробничому підприємстві може тривати три-чотири місяці. Одержані результати дослідження є важливими для топ-менеджменту підприємств. Вони дозволять орієнтуватися в продуктивності процесу проєктування й інсталяції логістичних систем. У подальшому це надасть можливість коректно скласти логістичний план і скоригувати стратегію розвитку підприємства.

Наведений у статті матеріал є корисним для дослідників в аспекті подальшого розгляду питання удосконалення наявних або розроблення нових алгоритмів і методик проєктування логістичних систем виробничих підприємств.

Ключові слова: евентуальна модель, логістична система, алгоритм проєктування, фаза проєктування, етап проєктування, підприємство.

Александр Сумец. «**Эвентуальная модель алгоритма проектирования логистической системы производственного предприятия**». *Логистическая система представляет собой одну из наиболее важных подсистем производственного предприятия. Эта система отвечает за своевременность и эффективность осуществления на предприятии логистической деятельности. Создание логистической системы на предприятии базируется на решении комплекса задач, где разработка алгоритма ее проектирования является ключевой.*

В статье представлена эвентуальная модель алгоритма проектирования логистической системы производственного предприятия. Алгоритм проектирования разработан с учетом деятельности предприятий масложировой отрасли. Структурно алгоритм состоит из трех фаз – формирование информационного массива для проектирования логистической системы, проектирование логистической системы, инсталляция проекта логистической системы на предприятии. Для каждой фазы проектирования обосновано оптимальное количество этапов. По этапам проектирования описан перечень работ, которые обязательно выполняются в процессе разработки и инсталляции проекта. Представлена информация о затратах времени на выполнение каждой работы по этапам проектирования и инсталляции логистической системы. Указано, что период разработки и инсталляции логистической системы на производственном предприятии может занять три-четыре месяца. Полученные результаты исследования важны для топ-менеджмента предприятий. Они позволят ориентироваться в производительности процесса проектирования и установки логистических систем. В дальнейшем это позволит корректно составить логистический план и скорректировать стратегию развития предприятия.

Приведенный в статье материал полезен исследователям в аспекте дальнейшего рассмотрения вопроса усовершенствования существующих или разработанных новых алгоритмов и методик проектирования логистических систем производственных предприятий.

Ключевые слова: эвентуальная модель, логистическая система, алгоритм проектирования, фаза проектирования, этап проектирования, предприятие.

Relevance of the problem. Ukraine's economy is currently experiencing many shocks, which affects the activities of domestic enterprises, firms and companies. This has created a situation where organizations are constantly in a position to

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find ways to maintain a stable position in the market. Therefore, as practice shows, in recent years the top management of enterprises, firms and companies began to pay much attention to the creation and further development of logistics systems (LS). Scientists and practitioners are unanimous in the opinion that to achieve the productive work of enterprises requires a comprehensive project of improvements, which must organically combine the latest technologies and logistics development strategy. For the successful implementation of the logistics development strategy, a necessary condition is the creation of logistics systems in enterprises, which will be isolated and will have their own specific purpose and objectives.

Creating a logistics system for a functioning enterprise is based on solving a set of relevant tasks. The primary, or key, task in this aspect is to develop an algorithm for designing a logistics system.

Analysis of recent research. Analysis of publications of research results of domestic and foreign scientists [1-10], which highlights the recommendations for the formation of the logistics system in enterprises and firms, provided an opportunity to identify unresolved issues of the general problem, namely:

1) at this time there is no description of the content of the LS design process;

2) the design phase of the LS is not clearly defined and described;

3) stages in each phase of LS design are not defined in quantitative and qualitative terms;

4) in the detailed description of works on designing of LS there are elements of generality and disregard of some important works, for example, maintenance of economic safety of LS, creation of system of registration, the analysis, control of logistic expenses within logistic system, substantiation of expediency of creation of LS at the enterprise, etc.

In addition, unfortunately, not all authors indicate in their publications for which enterprise the algorithm can be applied - for one that is functioning, or for a new one, ie for one that is just being organized. However, these developments of scientists and practitioners are very useful and should be the basis for further research on this issue.

All the above indicates that the problem of creating a methodological apparatus for designing a logistics system at this point in time has not yet been resolved and it needs further study [12]. In solving this problem, from the author's point of view, the primary task for researchers is to work out an eventual model of the algorithm for designing and implementing a logistics system in the enterprise, taking into account its economic system, which has already been formed [11].

Formulation of the research purpose: construction of an eventual model of the algorithm for designing the logistics system of a production enterprise.

The main material and results of the research. Previous studies of publications on this issue have made it possible to conclude that an eventual model of the algorithm for designing the logistics system of a production enterprise is based on the classical approach to project development. Namely, it is formalized in accordance with the following procedures:

1) determination of design phases;

2) description of design stages for each phase;

3) determination of works that will be performed within each stage on a mandatory basis;

4) the choice of contractors and logistics to ensure the design process.

The clarity of the presentation of an eventual model requires detailing of each procedure.

Analysis of approaches to the design and implementation of logistics systems in industrial enterprises, published in [1-10], provided an opportunity to systematize all proposals and choose an algorithm that consists of three phases:

- phase 1: formation of an information array for the design of a logistics system;

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- phase 2: design of the logistics system;
- phase 3: installation of the logistics system project.

These phases combine a certain number of stages that specify the direction and content of project work (Fig. 1).
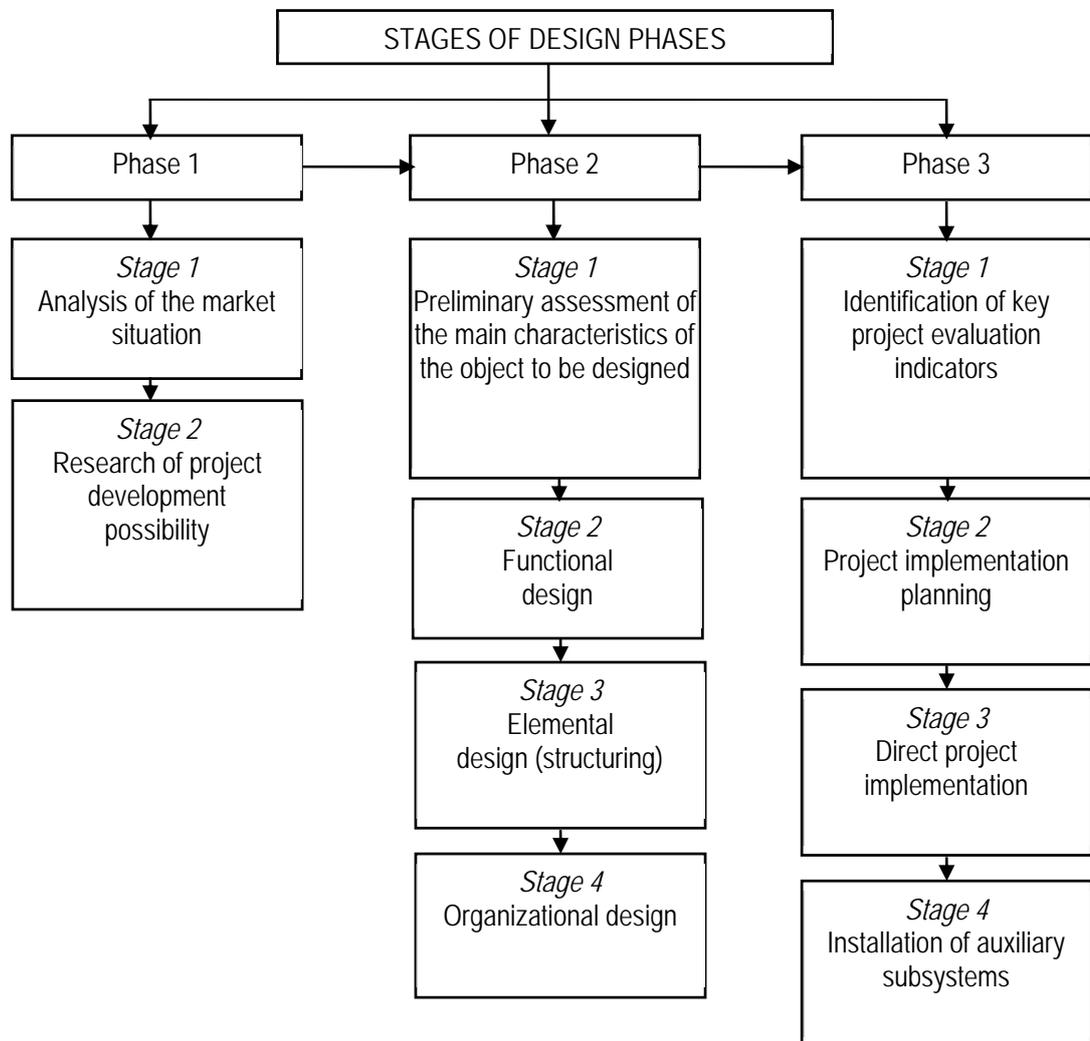
Figure 1. The main stages of the project development and implementation phases
Source: developed by the author.

In order to further implement these phases in practice, there is a need for a detailed description of an eventual model of the algorithm for designing and implementing a logistics system for a truly functioning production enterprise. For this purpose, within the framework of this study, a tabular form of information presentation was used (Table 1).

The implementation of the algorithm in practice involves its description in formulaic, verbal, graphical, tabular and algorithmic ways. From the point of view of the author, in this case the decision on formalization of algorithm in the form of the multiblock scheme is made (fig. 2). A thorough analysis of the proposed algorithm indicates that it has all the necessary properties, namely: finiteness, mass, discreteness, elementariness, determinism, efficiency and certainty. This makes it possible to state that the eventual model of the algorithm is quite suitable for practical implementation.

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Table 1 - The main work of the process of design and implementation of the logistics system at the production enterprise

Phase	Number and name of the stage	Name of the main works	Work code
1	2	3	4
Phase 1	Stage 1. Analysis of the market situation	1. Analysis of suppliers and consumers, establishing the possibility of increasing their number	Ph1.S1.W1
		2. Competitors analysis	Ph1.S1.W2
		3. Formulation of the purpose of creation of LS, formulation of the basic tasks LS	Ph1.S1.W3
		4. Analysis of outsourcing opportunities (external)	Ph1.S1.W4
	Stage 2. Research of the possibility of the LS creating	1. Analysis of the overall strategy of the enterprise	Ph1.S2.W1
		2. Analysis of the resource potential of the enterprise	Ph1.S2.W2
		3. Assessment of the existing logistics infrastructure of the enterprise	Ph1.S2.W3
		4. Determining the level of logistics costs for the company and justification of expediency of creating the LS	Ph1.S2.W4
		5. Pre-selection of the type and kind of logistics system	Ph1.S2.W5
		6. Determining the main limitation (determinants) on the functioning of the LS	Ph1.S2.W6
Phase 2	Stage 1. Preliminary assessment of the main characteristics of the designed LS	1. Forecasting the development of the LS	Ph2.S1.W1
		2. Determining the potential market boundary of the LS and transport network of customer service	Ph2.S1.W2
		3. Determining the cost of the project and installation of the LS at the enterprise	Ph2.S1.W3
		4. Estimation of the expected effect of the LS	Ph2.S1.W4
		5. Evaluation of the feasibility of designing the LS	Ph2.S1.W5
	Stage 2. Functional design of the LS	1. Allocation of a strategic set of logistics functions that are necessary to maintain the competitiveness of the enterprise	Ph2.S2.W1
		2. Establishment (definition) of logistics functions that can be outsourced and which will be performed directly at the enterprise	Ph2.S2.W2
	Stage 3. Elemental design (structuring) of the LS	1. Establishing the optimal structure of the LS of the enterprise: the choice of subsystems of the LS in accordance with the logistics purpose	Ph2.S3.W1
		2. Formation of economic goals and objectives for each subsystem of the LS	Ph2.S3.W2
		3. Determining the adequacy of the technical and technological base of each subsystem of the LS	Ph2.S3.W3
		4. Establish the required level of interconnection between subsystems and links of the LS	Ph2.S3.W4
		5. Information linking of the LS subsystems	Ph2.S3.W5
		6. Formation of the system of registration, accounting, analysis and control of logistics costs of the enterprise LS	Ph2.S3.W6

The end of the table 1

1	2	3	4
	Stage 4. Organizational design of the LS	1. Systematization of conditions, factors and parameters that determine the organizational management structure (OMS) of the enterprise LS	Ph2.S4.W1
		2. Choice of OMS type of the enterprise LS	Ph2.S4.W2
		3. Formation of conditions for the OMS of the enterprise LS	Ph2.S4.W3
		4. The choice of the OMS design model of the logistics system	Ph2.S4.W4
		5. The choice of indicators for assessing the quality of OMS of the enterprise LS	Ph2.S4.W5
		6. Formation of a system of indicators for assessing the effectiveness of OMS of the LS	Ph2.S4.W6
		7. Estimation of OMS efficiency of the enterprise LS	Ph2.S4.W7
		8. Assessment of the synergistic effect of the OMS implementation of the functioning enterprise LS	Ph2.S4.W8
		9. Working out of measures to ensure the economic security of the enterprise LS	Ph2.S4.W9
Phase 3	Stage 1. Identification of key indicators for the evaluation of the LS project	1. Determining the sensitivity of the LS	Ph3.S1.W1
		2. Determining the degree of usefulness of the LS	Ph3.S1.W2
		3. Determining the reliability of the LS	Ph3.S1.W3
		4. Evaluation of project effectiveness	Ph3.S1.W4
		5. Assessment of the economic security level of the enterprise LS	Ph3.S1.W5
	Stage 2. Planning the implementation of the LS project	1. Budgeting of the LS project	Ph3.S2.W1
		2. Drawing up a plan for the implementation of the LS project	Ph3.S2.W2
		3. Scheduling the implementation of the LS project	Ph3.S2.W3
	Stage 3. Direct implementation of the LS project	1. Launch of the LS project	Ph3.S3.W1
	Stage 4. Installation of auxiliary subsystems of the enterprise LS	1. Installation of logistics information system (LIS)	Ph3.S4.W1
		2. Installation of a system of registration, accounting, analysis and control of logistics costs	Ph3.S4.W2
		3. Installation of the economic security system of functioning of the enterprise LS	Ph3.S4.W3

Source: compiled by the author.

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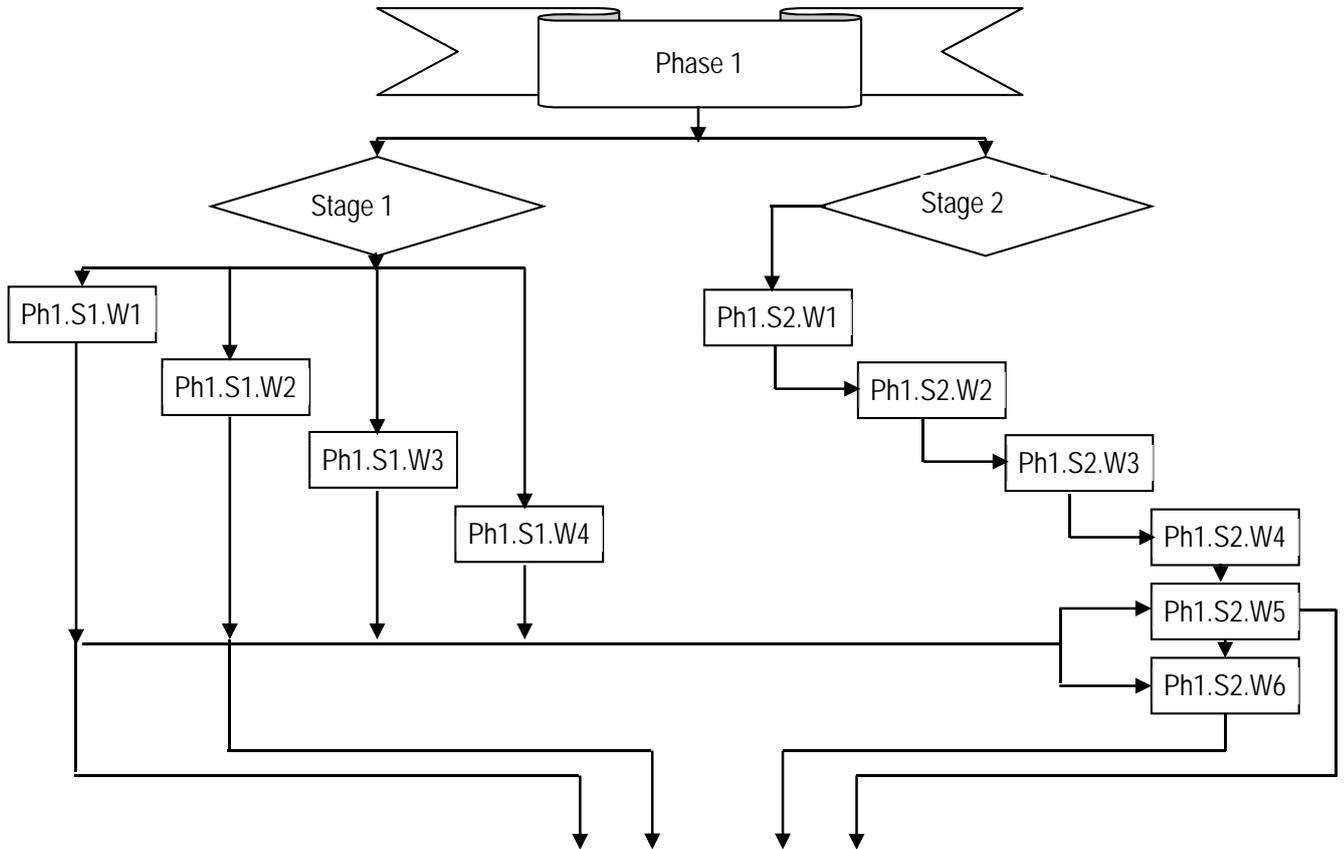53-66
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Figure 2 - Algorithm for designing the LS of a production enterprise (sheet 1)

Figure 2 - (sheet 2)

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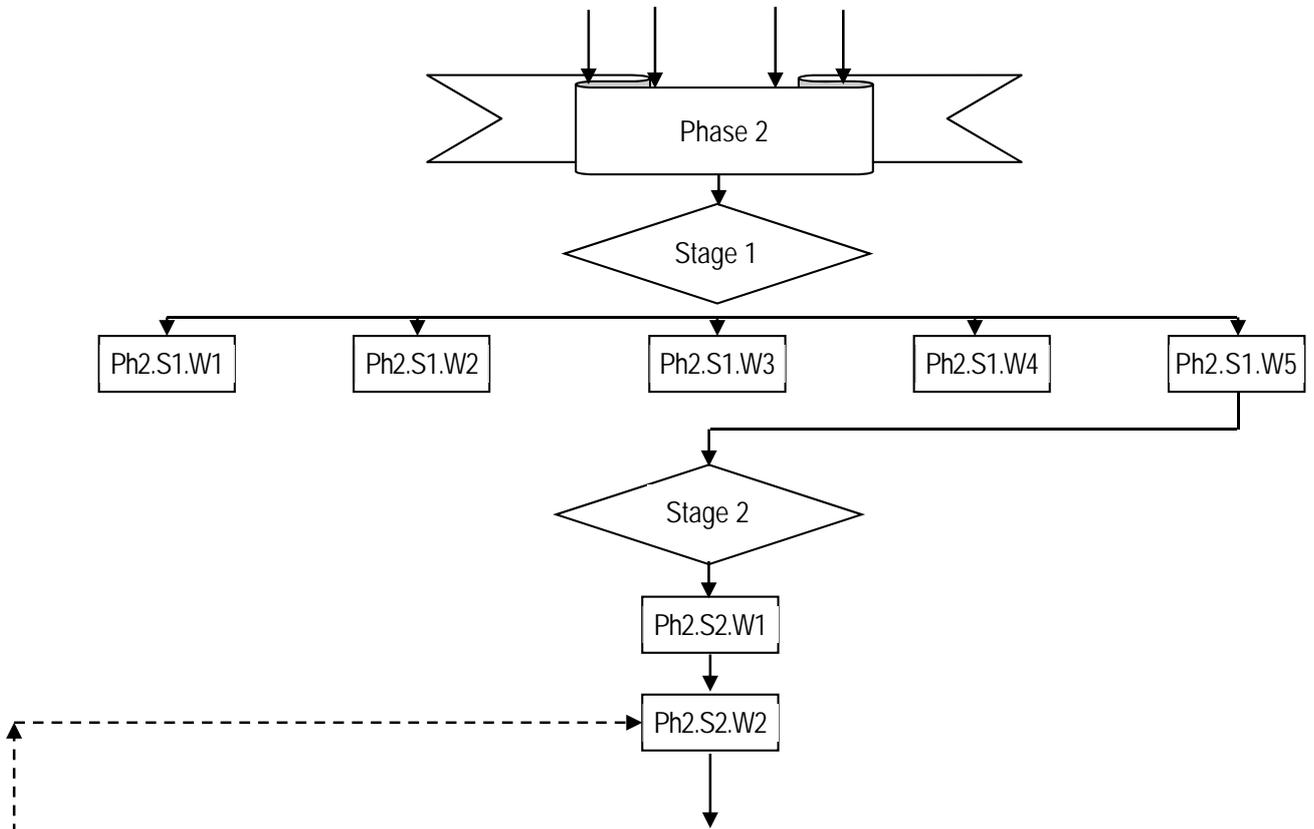ISSN 2708-3195
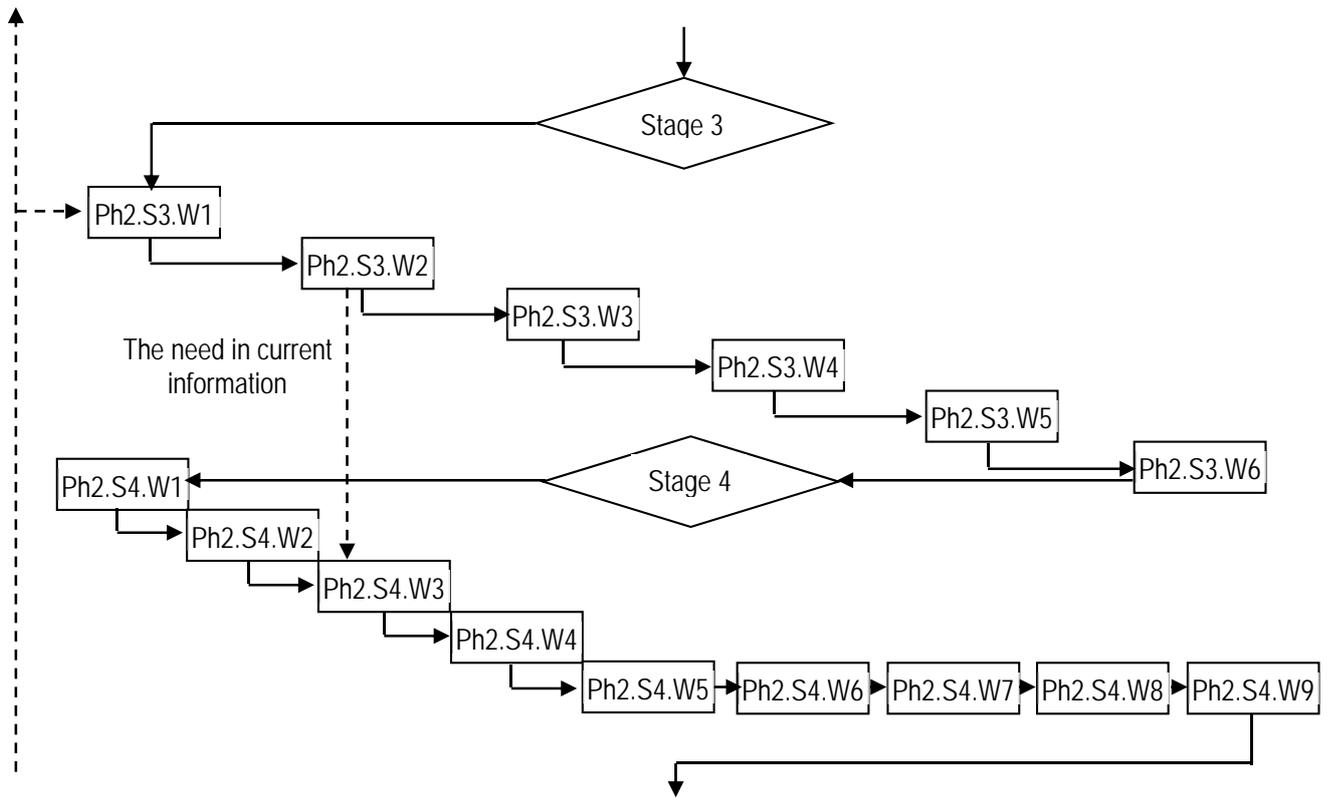
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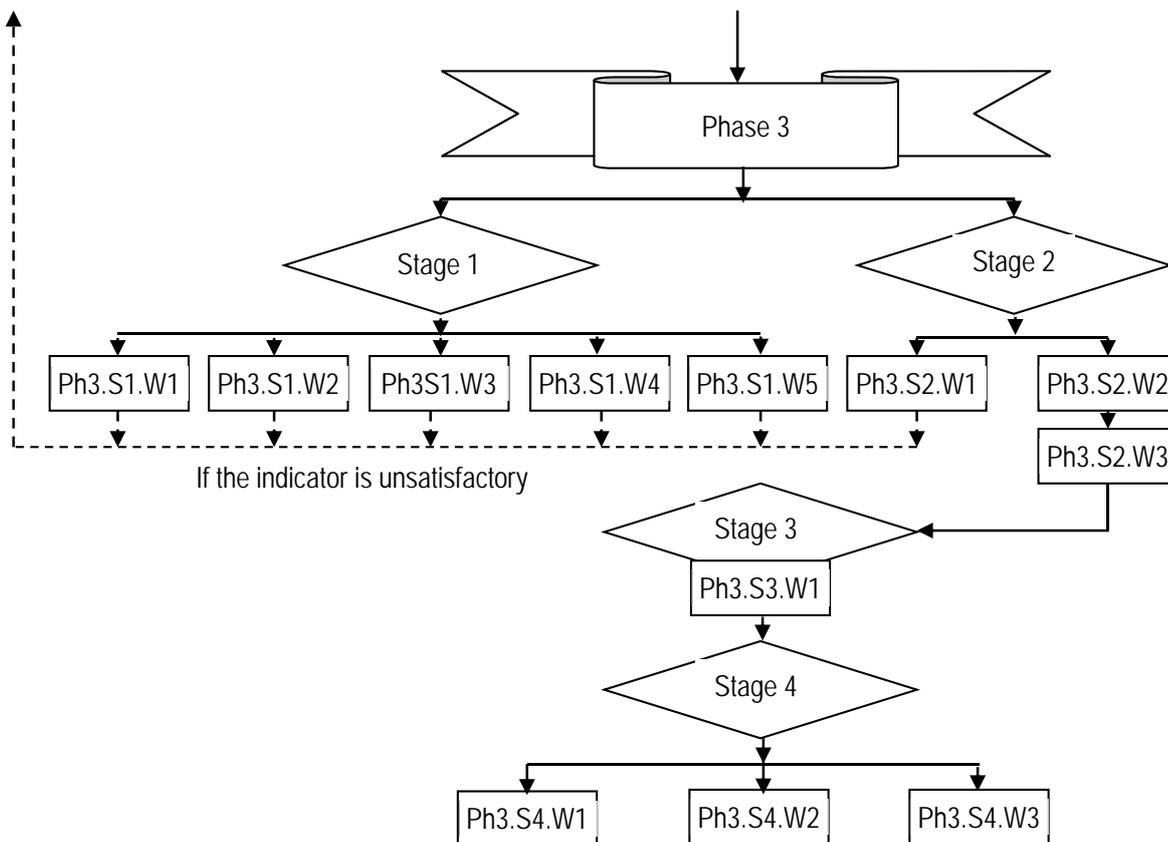https://smart-scm.org

Figure 2 - (sheet 3)

Figure 2 - (sheet 4)
Source: developed by the author.

In order to ensure the practical implementation of the proposed algorithm should provide a list and a brief description of the work to be performed within each stage of certain phases of design and implementation of the logistics system project for a functioning enterprise. A tabular form was also used in the study to describe the work planned to be performed during the design of the logistics system. The proposed table provides information of the following nature: code, title and content of the work (Table 2).

Table 2 - Description of the work content on the design and implementation of the LS project at the enterprise

Work code	The title of the work	The content of the work
1	2	3
Ph1.S1.W1	Analysis of suppliers and consumers, establishing the possibility of increasing their number	The market share for suppliers and consumers is determined; analysis of the potential of suppliers and consumers is performed; opportunities for their growth are forecasted; the degree of their loyalty to the enterprise and readiness for long-term cooperation is established
Ph1.S1.W2	Competitors analysis	The market share for competitors is determined; their strengths and weaknesses are assessed and potential opportunities in the use of logistics are identified; the implemented logistics technologies are analyzed; logistics partners and intermediaries are determined; competitors' logistics indicators are analyzed, if it possible
Ph1.S1.W3	Formulation of the purpose of creation of LS, formulation of the basic tasks LS	The economic system of the enterprise is analyzed; describes the logistics concept for the enterprise, on the basis of which the logistical purpose of creating a logistics system is formed, the main tasks for the logistics system are formulated
Ph1.S1.W4	Analysis of outsourcing opportunities	The logistic activities (LA) realized at the enterprise are allocated; the analysis of expediency of performance of LA directly at the enterprise is carried out; selection of LA which are economically expedient to carry out by forces and resources of the enterprise is carried out; LA are established, which should be performed through the use of logistics outsourcing; the market of outsourcing services is analyzed and possibilities of involvement of outsourcing for performance of previously allocated LA are established
Ph1.S2.W1	Analysis of the overall strategy of the enterprise	In terms of the overall strategy, an analysis of growth and support strategies is performed. Competitive advantages and opportunities of growth and support strategies are singled out
Ph1.S2.W2	Analysis of the resource potential of the enterprise	The resource potential of the enterprise is analyzed, first of all the financial and personnel possibilities concerning the organization and realization of certain logistic activities are analyzed
Ph1.S2.W3	Assessment of the existing logistics infrastructure of the enterprise	A detailed analysis of the main components of the enterprise infrastructure is performed. Namely, analyzes are performed: technical, technological, organizational and economic, in order to use them to perform certain logistics activities

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Continuation of the table 2

1	2	3
Ph1.S2.W4	Determining the level of logistics costs for the company and justification of expediency of creating the LS	In the general expenses of the enterprise logistic expenses are allocated. Their correlation with the general expenses is established on the basis of which the substantiation of expediency of creation of logistic system at the enterprise is carried out
Ph1.S2.W5	Pre-selection of the type and kind of logistics system	Based on the analysis of the level of logistics integration of the functions performed at the enterprise, the appropriate level of logistics aggregation is established. Pre-selected for the organization logistics system with direct connections or tiered or flexible
Ph1.S2.W6	Determining the main limitation (determinants) on the functioning of the LS	Price and non-price determinants of the logistics system of the enterprise are determined
Ph2.S1.W1	Forecasting the development of the LS	The forecast of performance of concrete volume of works by logistic system of the enterprise for the future periods is carried out
Ph2.S1.W2	Determining the potential market boundary of the LS and transport network of customer service	The expedient sizes (geographical territory) of the logistic range where implementation of logistic activity of the enterprise is planned are established
Ph2.S1.W3	Determining the cost of the project and installation of the LS at the enterprise	An estimate is made for forecasting the logistics system and installing it at the enterprise
Ph2.S1.W4	Estimation of the expected effect of the LS	The effect of the functioning of the logistics system at the enterprise is predicted
Ph2.S1.W5	Evaluation of the feasibility of designing the LS	According to the forecasted indicators of functioning efficiency of logistic systems expediency of its designing for the future periods is established
Ph2.S2.W1	Allocation of a strategic set of logistics functions that are necessary to maintain the competitiveness of the enterprise	Selection of logistics functions and operations is performed. These are essential to maintain the competitiveness of the enterprise in the selected market segment
Ph2.S2.W2	Establishment (definition) of logistics functions that can be outsourced and which will be performed directly at the enterprise	The logistic activities which will be carried out directly at the expense of possibilities of the enterprise, and the logistical activities which can be transferred for performance to other organizations are defined
Ph2.S3.W1	Establishing the optimal structure of the LS of the enterprise: the choice of subsystems of the LS in accordance with the logistics purpose	On the basis of the selected logistic activities which will be carried out by the enterprise the necessary list of subsystems of logistic system is proved
Ph2.S3.W2	Formation of economic goals and objectives for each subsystem of the LS	Economic goals and objectives are formulated for each subsystem of the logistics system in accordance with the logistics purpose of the enterprise
Ph2.S3.W3	Determining the adequacy of the technical and technological base of each subsystem of the LS	The technical and technological base of the enterprise is analyzed and sufficiency of means for performance of the specific logistics subsystems defined by LA is established.

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Continuation of the table 2

1	2	3
Ph2.S3.W4	Establish the required level of interconnection between subsystems and links of the LS	The level of interrelation (information, financial, organizational, technological) between subsystems and links of logistic system is established
Ph2.S3.W5	Information linking of the LS subsystems	The information linking of the subsystems of the logistics system between itself and between the services of the enterprise is formed
Ph2.S3.W6	Formation of the system of registration, accounting, analysis and control of logistics costs of the enterprise LS	Responsibility centers are organized. The system of registration, accounting, analysis and control of logistics costs of the enterprise through the centers of responsibility is being worked out
Ph2.S4.W1	Systematization of conditions, factors and parameters that determine the organizational management structure (OMS) of the enterprise LS	A matrix of conditions, factors and parameters is formed. These are crucial for building the organizational structure of management of the logistics system of the enterprise
Ph2.S4.W2	Choice of OMS type of the enterprise LS	The type of OMS for the enterprise LS is substantiated
Ph2.S4.W3	Formation of conditions for the OMS of the enterprise LS	Requirements to OMS of the enterprise LS concerning reliability of its functioning are formulated
Ph2.S4.W4	The choice of the OMS design model of the logistics system	The model of designing OMS of the enterprise LS is reasoned
Ph2.S4.W5	The choice of indicators for assessing the quality of OMS of the enterprise LS	Indicators of assessment of quality of functioning of OMS of the enterprise LS are substantiated
Ph2.S4.W6	Formation of a system of indicators for assessing the effectiveness of OMS of the LS	The system of indicators of an efficiency estimation of OMS of the enterprise LS is formed
Ph2.S4.W7	Estimation of OMS efficiency of the enterprise LS	A preliminary assessment of the OMS effectiveness of the enterprise LS is performed
Ph2.S4.W8	Assessment of the synergistic effect of the OMS implementation of the functioning enterprise LS	The synergistic effect of the OMS of the LS implementation at the enterprise is determined
Ph2.S4.W9	Working out of measures to ensure the economic security of the enterprise LS	Measures are being developed to ensure the economic security of the enterprise LS, taking into account the external environment and the position of the enterprise in a particular market segment
Ph3.S1.W1	Determining the sensitivity of the LS	The sensitivity index of the logistics system is determined. It is evaluated and analyzed
Ph3.S1.W2	Determining the degree of usefulness of the LS	The numerical value of the utility indicator of the LS is determined. It is evaluated and analyzed
Ph3.S1.W3	Determining the reliability of the LS	Reliability indicators of the LS are calculated. Their evaluation and analysis is carried out
Ph3.S1.W4	Evaluation of project effectiveness	The effect of the functioning of the LS is determined.
Ph3.S1.W5	Assessment of the economic security level of the enterprise LS	The level of economic security of the enterprise LS is determined
Ph3.S2.W1	Budgeting of the LS project	The budget for the project is drawn up taking into account the level of reliability and economic security of the LS
Ph3.S2.W2	Drawing up a plan for the implementation of the LS project	A detailed plan for the implementation of the LS project is being drawn up

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The end of the table 2

1	2	3
Ph3.S2.W3	Scheduling the implementation of the LS project	The schedule of implementation of the LS project according to the established terms is made
Ph3.S3.W1	Launch of the LS project	Putting into operation of the LS project
Ph3.S4.W1	Installation of logistics information system (LIS)	Installation of LIS and its adjustment to the organizational structure of enterprise management
Ph3.S4.W2	Installation of a system of registration, accounting, analysis and control of logistics costs	Establishment of the system of registration, accounting, analysis and control of logistics costs and its adjustment to the general system of accounting of expenses of the enterprise
Ph3.S4.W3	Installation of the economic security system of functioning of the enterprise LS	Implementation of measures to organize the economic security of the enterprise LS in the general system of the enterprise

Source: compiled by the author.

Substantiation of decisions related to the use of the described algorithm for designing a logistics system, as well as the selection of the most efficient types of work at each stage can be performed with varying degrees of depth and detail. The latter is determined not only by the source information possessed by the designer and its reliability, but also by the knowledge of the project team (consultants, specialists of the enterprise) with the tools of the work and the availability of sources of project funding.

When developing projects, an important issue is the time spent on the planned work. Also, in order to focus on the time budget for the development of a logistics system project in the course of the study on the example of oil and fat industry enterprises were set (forecast) time that can be spent on the work at each stage. The results of this study are given in table. 3.

From the table 3 it follows that the process of designing and installing a logistics system can be carried out in an average of 143 days. Therefore, if a decision is made on the organization of the logistics system in the oil and fat industry, the top management should focus on a period of 3-4 months. This time can be reduced if some design work is done in parallel. However, this is decided purely in a particular case.

Presented in table 3 deadlines for the execution of works related to the design and installation of the logistics system are approximate. Their values may vary depending on the scale of production, enterprise structure, availability of information system and qualified specialists in the field of logistics. However, the value of such information is that thanks to it, the top management of the enterprise will focus on the productivity of the process of designing and installing a logistics system. In the future, this will provide an opportunity to correctly draw up a logistics plan and adjust the development strategy of the enterprise as a whole.

Conclusions. The author's approach to realization of development process of the logistic system project of the industrial enterprise and its practical realization is published in the article. This approach is formalized in the form of an eventual model of the algorithm for designing of the enterprise logistics system. According to the algorithm, the phases and stages of designing a logistics system are described; the types of work that must be performed within each stage are detailed.

The proposed algorithm for designing and implementing a logistics system of a manufacturing enterprise does not claim to be exhaustive of this scientific problem, although it may be a contribution to the formation and development of the methodological apparatus for designing logistics systems. In addition, the material presented in the article is useful for

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researchers in terms of further research to improve existing or developed new algorithms and techniques for designing logistics systems of industrial enterprises.

Table 3 - Estimated values of time for work related to the design and installation of the enterprise LS

Phase	Number and name of the stage	Work code	Time, days[*]
Phase 1	Stage 1. Analysis of the market situation	Ph1.S1.W1	4
		Ph1.S1.W2	6
		Ph1.S1.W3	1
		Ph1.S1.W4	3
	Stage 2. Research of the possibility of the LS creating	Ph1.S2.W1	3
		Ph1.S2.W2	5
		Ph1.S2.W3	3
		Ph1.S2.W4	6
		Ph1.S2.W5	2
		Ph1.S2.W6	3
Phase 2	Stage 1 Preliminary assessment of the main characteristics of the designed LS	Ph2.S1.W1	2
		Ph2.S1.W2	2
		Ph2.S1.W3	4
		Ph2.S1.W4	1
		Ph2.S1.W5	1
	Stage 2. Functional design of the LS	Ph2.S2.W1	2
		Ph2.S2.W2	3
	Stage 3. Elemental design (structuring) of the LS	Ph2.S3.W1	4
		Ph2.S3.W2	1
		Ph2.S3.W3	5
		Ph2.S3.W4	3
		Ph2.S3.W5	7
		Ph2.S3.W6	6
	Stage 4. Organizational design of the LS	Ph2.S4.W1	5
		Ph2.S4.W2	2
		Ph2.S4.W3	3
		Ph2.S4.W4	2
		Ph2.S4.W5	2
		Ph2.S4.W6	1
		Ph2.S4.W7	1
		Ph2.S4.W8	1
		Ph2.S4.W9	3
Phase 3	Stage 1. Identification of key indicators for the evaluation of the LS project	Ph3.S1.W1	3
		Ph3.S1.W2	
		Ph3.S1.W3	
		Ph3.S1.W4	
		Ph3.S1.W5	1
	Stage 2. Planning the implementation of the LS project	Ph3.S2.W1	5
		Ph3.S2.W2	3
		Ph3.S2.W3	2
	Stage 3. Direct implementation of the LS project	Ph3.S3.W1	14
	Stage 4. Installation of auxiliary subsystems of the enterprise LS	Ph3.S4.W1	7
		Ph3.S4.W2	4
		Ph3.S4.W3	4

Note. *) Average value.
Source: compiled by the author.

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