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**INTRODUCTION OF WAREHOUSE MANAGEMENT SYSTEM LEAD WMS
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The use of a special warehouse management system WMS, which solves the problem of warehouse management and automation of warehouse operations, is very important. A modern WMS warehouse management system increases warehouse efficiency and staff productivity at times.

In modern conditions on trade enterprises the issues, which are related to ensuring the process of trade necessary material resources and their effective use, improving warehouse management and product inventory, sales activity and traffic flow, are of particular relevance.

In order to achieve the competitiveness the organization should organize their activities so as to minimize the risks, losses and expenses that are associated with the processes of storage and distribution of products and maximize the revenues from sale. It is possible to implement in the first place by improving the efficiency of storage management.

The rational organization of storage facilities is of great importance to accelerate and reduce the cost of promotion material assets within the enterprise to improve the productivity of workers involved storage, better utilization of equipment and warehouse space for mobilization of surplus stocks.

A specific feature of storage facilities is the presence of large reserves of perfection that with the full implementation will have an effect on other areas of activity of commercial enterprise.

Warehouse management system (WMS-system) is used for optimizing the business processes of storage space, regardless of the size of the warehouse [1].

The warehouse management system is an information system providing automation of business process management warehouse work of the enterprise.

WMS-class systems are designed to automate the operational warehouse management. Their work is based on the automatic identification technology, the principle of address storage and remote control technology of personnel. In automatic mode, the systems directly form the setting for operations, managing the warehouse personnel and equipment, leaving managers the functions of process monitoring and resolution of problem situations. WMS eliminates the need to synthesize information on their own and keep paper records. Instead, this information is transmitted and processed by the system and converted into an optimized work orders for each warehouse worker. Personnel management at every stage of the work is carried out by means of issuing assignments to wireless terminals.

The information on each operation immediately fixed in the system using the keyboard or scanning. This means that the information about the number and arrangement of the goods in stock are transmitted in real time, and any deviations can be addressed immediately. WMS works closely with the company's corporate system, taking from it the information about orders, deliveries or other documents for the establishment of operations, as well as providing it with the necessary data for the warehouse. One of the main tasks of WMS implementation is the regulation and optimization of processes with material flow. Thanks to the address storage improves the accuracy of the data about the number and placement of goods in a warehouse to 99.9%, provided full control of merchandise. Efficiency of storage space is optimized due to its use in the various strategies stowage, sealing procedures, analysis of using cells with different heights (capacity is increased from 5 to 25%). According to the data, the application of WMS can significantly improve customer service – first of all due to the exclusion shipment of the order situation in the incomplete scope of delivery or misdescription, which reduces the cost of additional delivery and reception of returns. Its implementation can significantly improve the efficiency of personnel management. In particular, it allows reducing the time of implementation of all warehouse operations, increasing productivity an average of 20–30%, eliminating unexpected situations and identifying their perpetrators. The number of situations in which staff can not find items in stock is reduced to almost zero. Data exchange between the corporate and warehouse system in real-time provides sales department accurate information about stocks [2–3].

The control system displays on the screen of the terminal warehouse employee information about the operation that must be completed with the goods. The operator removes the item with the specified number, read by a scanner bar code of cell and product, confirming the correct execution of the task. When the operation is completed, the message of its completion is displayed. If an error occurs, the control system will inform about it. Thus, any movement of goods in the warehouse, receiving deliveries, order placement and other operations are

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carried out with the use of radio and recorded in the database management system. Use of terminals, which equipped with a radio-frequency device data reception and transmission, enables automatic in real-time to fix the course for operators and to carry out load tasks for performance of work, and constantly be in touch with the information system. Since the correctness of all operations is continuously monitored by the WMS, it allows increase in the accuracy of data on the state of the warehouse almost to 100%.

Now the so-called voice-picking is enough new area of data collection. It is technology by which executor gets an order from the control system in the audio format. As in the case of the radio, the order is transmitted to the executor in real time. If you have a speech recognition unit between the performer and the system, feedback is possible (for example, to re-request command). The advantage of this control method is that the executor should not carry the data collection terminal and switch attention continually on his screen. However, there is a significant likelihood of erroneous actions due to the visual identification of the goods [4].

The use of modern WMS allows you to minimize the influence of the "human factor" in the decision-making process and the result of the work. Warehouse automation significantly reduces the risks associated with human error. WMS-system efficiently solves problems in scheduling and monitors their implementation and considers the labor costs. Warehouse Management System supports automatic distribution of tasks between employees of the warehouse, and also allows you to track the total and detailed information about the run-time operations. Requirements to executors' qualification are reduced, as the system knows the whereabouts of the goods in the warehouse and determine the order of execution of works. At the same time the level of staff's responsibility is increasing that allows the introduction of an effective system for its stimulation. The result solves another important task – the opportunity to exercise personal control over the employees and calculate wages on the basis of the accurate accounting of transactions made. Thanks to the tracking function, after the switching on which the screen manager duplicated radio operator screen, the manager can determine what a particular employee is busy at the moment. At the same time he is able to control the work of several operators. For each work the duration of its implementation is recorded, and all the parameters of goods with which operations were performed in this work (mass, volume, size, etc.). Upon completion of the registration data is written to the archive operations WMS-system [2].

Advantages of WMS implementation:

1. The ability to create automatic scheduling of tasks to staff in the warehouse;
2. The operational accounting of inventory in real-time;
3. The records of stocks in a given period of time;
4. The storage of goods for certain locations;
5. Accounting shipments;
6. The control of the equipment, technology and personnel;
7. The ability to integrate with barcode reader systems.

WMS systems, carrying out technological operations and machining very detailed information about the storage process, are at the middle level – the level of production. They work in real time, carrying out management in addressing current operational challenges.

Thus, the effectiveness of modern warehouse is determined not only by handling machinery or convenient shelves. The use of a special warehouse management system WMS, which solves the problem of warehouse management and automation of warehouse operations, is very important. The system places the good in stock, provides tasks and controls the selection of products, controls personnel, as well as automates the replenishment stock balance. A modern WMS warehouse management system increases warehouse efficiency and staff productivity at times. In the selection of hardware, software and the development of WMS one should pay particular attention to the prospect of further growth of the company. Well-organized factory automation usually frees additional resources and increases overall productivity. Therefore, the equipment must be purchased with a view to increasing the scope of work, with the possibility of modernization and expansion [1].

Consider a project to introduce automated material flow management system LEAD WMS.

Consider the sections of the business plan of the investment project for the implementation of the materials management system LEAD WMS LLC "TEHPROMIMPEKS".

Enterprise: LLC "TEHPROMIMPEKS".

The purpose of the design: evaluation of the effectiveness of implementation of material flow management system LEAD WMS.

The volume of investments: 4260 rubles at the first stage

Financing: from domestic sources.

Key indicators of the plan:

Planning period: 4 years.

At the end of the period, revenue from sales will amount to 7,400 rubles.

Discounted payback period is 12 months.

Net present value amounted 25000 rub.

The company is going to introduce a computer management system, as a rule, gives the following setup: the system should start operating as soon as possible, on time and within budget. The approximate schedule of implementation of project activities is presented in Table 1.

Table 1 – The planned schedule of implementation of the project activities (Gantt chart)

TYPE OF WORK	CONTRACTOR	WEEKS											
		1	2	3	4	5	6	7	8	9	10	11	12
The initial analysis of the project	Planning and economic department	■											
Signing a contract with STS "TOP SOFT"	Director, lawyer	■	■										
Buying Software	Director of Sales			■	■	■	■						
Hiring	Human Resources Director			■	■	■	■	■					
Training	Logist								■	■	■		
Carrying out commissioning	Hired team, working enterprises (under the guidance of an engineer)											■	■
Start of the project	All staff												■

Table 2 – Baseline

Index	Unit	Value
The cost of 1 kWh of electricity	rub	0,1188
Power consumption of equipment	kW	8,4
Hours per day of the program	hour	8
Duration of adjustment	month	1
Wages of one specialist	rub	310
Standard extra wages	%	40
Number of employees	persons	1

Table 3 – The capital cost

Expenditures	The value, rubles
The cost of the initial analysis and planning	39
Purchased software complex	3200
The cost of installation of software	160
Costs for commissioning	745,98
The cost of professional training courses	120
In total	4264,98

Table 4 – Current costs of operating software package

Expenditures	The value, rubles
Depreciation and amortization costs	320
Energy costs	16860
Repairs	128
Labour costs	5148
Charges on wages fund	1801,8
in total	24257,8

Table 5 – The schedule of the project LLC "TEHPROMIMPEKS"

Stages of the project	Total project	By year project			
		2016	2017	2018	2019
1	2	3	4	5	6
Pre-investment studies, thousand rubles	39	39	0,0	0,0	0,0
Purchasing the software package, thousand rubles	3200	3200	0,0	0,0	0,0
Installing the software package, thousand rubles	160	160	0,0	0,0	0,0

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End of the table 5

1	2	3	4	5	6
Commissioning works	745,98	745,98	0,0	0,0	0,0
The cost of professional training	120	120	-	-	-
The development of production capacity			100%	100%	100%
Total investment costs, thousand rubles	11655,592	11655,592	-	-	-

Table 6 – Data for calculating the economic impact of the implementation of the program complex

Index	Valuation in thousands of rubles			
	2016	2017	2018	2019
Capital expenditures	4264,98	E = 0,16 -4264,98	E = 0,16 -	E = 0,16
Discount coefficient	1	0,8	0,64	0,512
Operating costs	-	-242578		
Discounted costs	-	-19406,24	-15524,99	-12419,994
Increase in profits	-	57751,244		
Present profit	-	46200,995	36960,796	29568,64
Net present value	-4265	22529,78	21435,80	17148,64

Thus, taking into account all the above calculated, it is possible to conclude about an economic efficiency of the project, which is paid back in 12 months.

Introduction of the materials control system LEAD WMS into LLC "ТЕHPROMIMPEKS" can reduce the number of workers, thereby increasing profit margins and efficiency of the enterprise. In the first stage, the volume of investment is proposed in the amount of 426 0 rubles. Financing is provided from domestic sources. Discounted payback period is 12 months. Net present value is 17100 rubles.

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