

LOGISTICS MANAGEMENT AS A TOOL FOR OPTIMIZING LABOR COST

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Abstract

Permanent optimization of both process and also costs in all areas of activities is one of the fundamental goals of any company, whether it is in terms of competitiveness and achieving optimal results. Also, the management of logistics processes should lead to an increase in sustainable development and reducing costs of organization. This paper evaluates the interdependence of labour costs and logistics management. Specifically, the ratio of labour costs of warehouse employees and the number of manipulated volume of material and labour costs to the total volume of production. Evaluation of this interdependence is implemented for a period of five years, and during this time a new logistics tool Milk-run was implemented in terms of managing logistics processes.

Keywords: Logistics costs, labour costs, Milk-run

1. BINDING BETWEEN LOGISTICS AND COSTS

If the enterprise wants to be viable, it must also produce a profit, which they re-invest. Due to this fact it is possible to deduce a pattern of behaviour, it is the "cost = c + profit", which evaluates that costs are dependent parameter. From this it follows that for survival, organizations must reduce their costs so that they reach a maximum value of commodity prices. Group costs, which in this paper we deal with are those which relate to the logistics, thus labour costs and their dependence on the management of logistics processes.

1.1. Logistics

In the literature we can find a wide variety of definitions related to the concept of logistics. Briefly summarized, the logistics understands the movement of goods and materials from point of origin to point of consumption, sometimes to the point of disposal, and related information flow. The aim of such a flow is yet considered to satisfy customer requirements. Logistics covers all components of the circulatory process of transportation, inventory management, material handling, packaging, distribution and storage. It also includes communication, information and control systems. Logistics is a very broad field, which in many respects fundamentally affects the living standards of the company. In current, mature society we have become accustomed to the fact that logistics services operate flawlessly, and we perceive logistics at the moment of a problem. We can summarize that the main task of logistics is to ensure the right materials in the right place at the right time, in the required quality, with sufficient information and financial impact. Logistics is not only a part of the manufacturing sector, but also the service sector. [1]

1.2. Method Milk-run

During the development of logistics it gradually formed a logistics technology, which began to use in practice. Based on feedback occurs assessing the suitability of the technology for specific industries, because not all circumstances can be applied to the same logistics technology. Before application of certain technologies into practice the company must always be investigated a number of phenomena, such as the phenomena of production, economic etc. Currently the core logistics technologies are considered: Kanban, JIT, Milk-run, Quick Response, Efficient Consumer Response, Hub and Spoke Cross-docking, Concentration warehouse network, combined transportation, automatic identification, and computer integrated technology, training and management of production and circulation Communication technology [2].

That method Milk-run was for introduction into internal logistics, manufacturing companies of this case study assessed as optimum logistics technology. Origin methods Milk-run comes from England, where in essence consisted periodic collection of fresh milk from individual farmers to the dairy. Milk-run is a transportation concept with pre-established routes and regular waste collection intervals. This specific supply system is based on the circulation of packages. The consumer goods are transported filled packaging and from the consumer are collected emptied to refill. To trim material from the warehouse is under a prearranged schedule and plan routes. At precisely specified locations at the specified time of unloading the material and at the same time there is a loading empty transport boxes into the warehouse. [3]. When applying methods Milk-run is necessary to take into account several factors such as the location of the business in landscape, ordering materials warehouse, production hall layout, transport units, information system etc.

1.3. Optimisation of labour costs

If a company wants to be successful and competitive, it is essential to monitor the effectiveness and share their logistics costs to overall corporate performance. Cost management becomes very important task of each company. One of the most important business factors of production is a powerful work, i.e. Human energy and mental labour expended in the production of goods. Eligibility workforce to perform certain activities depends on physical constitution, talent, age, natural endowment, level of education and practical experience. Prices and this work are expressed by wage costs. [4]

Any change management, for which the organization chooses, it must precede the analysis useful for analysing the areas affected by the amendment. In our present study, which deals with the optimization of labour costs depending on the management of logistics processes organization, respectively optimization of wages after the introduction of Milk-run, it is necessary to identify and analyse the activities that are secured human resources.

Optimization labour costs involve modifying these costs so that their spending has achieved the best effect as a contribution to the company. Costs are optimal when their spending is effective and is achieved through their highest potential returns and not as a waste of resources. If someone says optimizing labour costs, many people only think about mass redundancies. This of course is one of optimization methods, but not usually the right or appropriate. In organizations facing mass layoffs of employees created an unpleasant atmosphere, which is manifested by increased stress among employees. This fact certainly does not contribute to the proper functioning of an organization. For these reasons, this method is the least desirable and is approached with more cases of existential problems of the organization.

2. THE INTRODUCTION OF THE METHOD INTO PRACTICE AND ITS IMPLICATIONS

To evaluate outputs of the new system is needed to characterize the situation before the introduction of the system. Cost optimization is one of the key targets actions of each company. In here, the production company decided to locate and establish a system that leads to lower costs of internal logistics.

One of the examples of inefficiency, thus wasting company resources, is the use of handling equipment and its subsequent optimization in context of wage costs compared with original state. Original condition, respectively the situation before the introduction of Milk-run company assessed through monitoring raids meter reading and distance travelled while ensuring transportation between warehouses and production halls causing futile invasions as well as repetitive driving routes and also inefficiencies in the utilization of material resources and manpower.

With applications of Milk-run system there is a need for a precise definition of the conditions in this case, the time and route. It is necessary to set exact times at which it is carried out regularly ride a course beforehand clearly defined and mapped out the route along which the transport of goods and materials carried on.

The production company has set itinerary of specifying the individual points of loading, where the ready goods and materials for production for the ride in Milk-run system, and the designation of places of distribution, i.e. individual points of factory buildings and production lines to which the material is distributed.

2.1. Monitored variables

In internal logistics, manufacturing companies are long-term monitoring the aggregate costs associated with primarily the use of forklifts. It is the cost of operation and maintenance, fuel costs, labour costs associated with operation of these trucks. Following the monitoring of all the company's values is also recorded and evaluated workload of each forklift and its operator, the need for warehouse management and manufacturing needs of the company. This way summary of Weights on values such as total fuel consumption, total labour costs, etc. is summarized. In order to ensure the long-term objective evaluation, there is a comparison of wage costs; it means total number of manipulations, i.e. number of intake and output in within warehouse management, and also to compare with the total volume of production of manufacturing companies.

2.2. Evaluation of the monitored values

The company decided to introduce a Milk-run system for internal logistics at the beginning of the year 2013. In 2013 began trial operation of production supply using the method of Milk-run. All the values before and after the introduction of Milk-run, during the reporting period from 2011 to 2015, are summarized in **Table 1**, where you can see how it develops the wage cost in comparison with the total number of operations (number of intake and exit), and total company production in weight measurement units. The organization monitors expenses in the full range of staffing warehouse management. The table shows a breakdown of handling workers, from the number of hours worked, wage costs and technical personnel and economic costs associated with their activities.

Table 1 Summary comparison of labor costs to the total number of operations and total production [own processing]

	2011	2012	2013	2014	2015
Number of manipulates	12	14	13	12	10
Number of hours [h]	17 882	17 002	17 113	17 614	15 772
Of the mandated overtime [pm]	1 602	1 665	1 011	814	819
The number of hours worked by temporary workers [pm]	572	1 810	1 495	1 060	358
The total number of hours [h]	18 454	18 812	18 608	18 674	18 172
The operator labour costs [CZK]	3 160 683	3 176 282	3 005 832	2 624 292	2 541 748
Wage costs of temporary workers [CZK]	42 900	135 731	127 075	73 920	53 661
Number of MET	3	3	4	3	2
Number of working hours [h]	4812	4476	4212.75	4396	4134
Of the overtime [pm]	131.25	711	191	250	279
THP labour costs [CZK]	1 133 133	1 272 625	1 092 835	799 655	727 752
Total labour costs of the warehouse [CZK]	4 293 816	4 448 907	4 098 667	3 423 947	3 269 500
Total intake and output (number of manipulations)	N / A	65 269	58 492	60 335	55 923
Converted price for a handling [CZK / manipulation]	N / A	68.16	70.07	56.75	58.46
Company production [t]	N / A	29 455 926	25 661 065	25 969 246	25 086 937
Price per tonne produced to manipulate [CZK / t]	N / A	0.1510	0.1597	0.1318	0.1303
YoY difference [CZK]	N / A	155 091	-350 240	-674 720	-154 447

From the table above it is apparent some facts related to the introduction of the Milk-run organization. As the primary can be seen the long-term trend of decreasing total wage costs of running the store, as well as trend of lowered volumes mandated overtime. The table also captures the wage cost per transaction handling and also the wage cost per ton was produced by. In these cases we can also observe a positive trend of cost reduction. The last line of the table then shows the evolution of the annual total wage costs of running the store, therefore, since the introduction of logistics management methods Milk-run occurred, there are savings of more than 1 mil CZK.

To the total amount of the wage costs of maintaining a warehouse is to be noted that while downsizing, they also contain severance pay for employees with whom employment contracts have been terminated and despite this fact shows that the method implementation Milk-run is in this case, the step in the right and led to the actual financial savings organization.

3. CONCLUSION

The primary feature of the optimal management of logistic processes is to ensure the right materials in the right place at the right time, in the required quality, with sufficient information and financial impact. The financial impact is in this case meant optimal and higher costs associated with all activities of logistics. The aim of the investigation, which describes the article, was to evaluate the economic aspects of the introduction of Milk-run into internal logistics, manufacturing companies, and in the area of labour costs.

To evaluate the economic aspects of these occurred during the follow-up of wage costs to the total number of transactions executed in warehouse management and the total volume of production in manufacturing companies. With this monitoring, it was found that the application of the method Milk-run, in the long term is to reduce the reduction of the sum of wage costs of providing warehousing activities, reduction of mandated overtime, then being reduced annualized rates for handling both related to the number of manipulated items, and also the total volume of production organization. It can be assessed that the implementation of the Milk-run in this organization was a right move and lead to real cost savings.

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