EFFECT OF LOGISTICS AUDITS ON COMPANIES PERFORMANCE IMPROVEMENT

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Abstract
The paper deals with the impact of logistics audits on companies performance improvement. Audit is input step for all following, which directly affects performance in final analysis eventually company's competitiveness. The content of the text are research results that describe impact and importance of using logistics activities in Czech and Slovak companies. Part of the article are practical examples of application of logistics audits in manufacturing companies, whose main activity is production. Logistics activities are performing here indispensable linking of subsequent steps. Intracompany logistics is helping to maintain most of material flows for manufacturing operations. Ensuring its smooth operations is often neglected and emphasis is primarily placed on production. There is a huge potential to directly influence material, information and financial flows of society. By identifying weaknesses and subsequent improvements in logistics processes by audit will reduce losses, comply continuous material flow which has positive impact on company performance. At the end of defined steps and activities that must be followed when dealing with internal logistics audits.

Keywords: Logistics audits, methods of measurement, companies performance, improvement

1. INTRODUCTION
As surely know, goal of logistics is to supply the required goods on time, to desired location, in required quantity and quality at minimum cost with minimum impact on the environment. Processes which provide transport and supplement of resources in terms of business, are corporate logistics. It is divided into external and internal logistics. Transport is provided in following triad: between supplier, manufacturer and customer. Since this is a collateral of materials, semi-products and products that create added value to next step, where they are transported, it is necessary to pay them their area of interest. Even though it has been processed a large number of contributions in areas of logistics and planning, it is still an area which in practice is not clearly defined. That is logistics audits, focusing primarily on internal logistics.

The reason, why intracompany logistics is defined, is based largely from practical experiences and also from literature research. When from most part researched area is securing supply of input sources and distribution of finished products. For troubleless securing of these activities positively affects possibility of detailed layout of needed transport in sufficient time interval before or after the manufacturing process. To ensure the operation of internal logistics planning is very important, but there already are factors that significantly affect the level of mastering process. Intracompany logistics, however, directly affects production process and prioritaire company plan, customer satisfaction. Intralogistics is necessary in many cases to manage operatively. Approaches influencing subsequent transport filling, approaches how are being fulfilled, risks and mistakes committed by staff, will be described in this article. Information and resources are directly from corporate data and intracompany logistics audits. Furthermore, individual negative effects will be subdivided. To illustrate, the contribution will be supplemented by several examples of methods applied in audits. For integrity, conclusion should be devoted to logistics audit.

Logistics have always played an important role in business. All companies include inventory management and transportation as one of the most critical factors in business success. Manufacturers, logistics concerns itself should take into account sourcing of raw materials, and standards of customer service. In recent years,
big changes in the business environment have forced companies to pay particularly close attention to how this function relates to others. [1] [2]

Growing influence of logistics:

There are some reasons, while is Logistics important in the companies:

- An increasing number of alternatives for meeting cost and service standards.
- The threat a lack of material is injecting logistics as opposed to marketing considerations into product line decisions.
- The recent emphasis on effective inventory management through wide swings in business cycles characterized by varying rates of increase in fluctuating interest costs, labour costs, and changing rates of sale.

Using logistics as an effective competitive lever and as a significant component of strategy, management should take two points. First, logistics programs should be adapt to support on-going corporate strategies in the short term.

Second, factor logistics should be implemented into the design of business operating strategies on a continuing long-term basis.

Steps necessary to ensure this include the performance of a logistics strategy audit, possible logistics system redesign, and the maintenance of procedures to ensure continued attention to logistics as an individual element of corporate strategy. [3]

1.1 Performance Measuring

Area of application of performance measuring meets with growing interest especially in field of management applications and management. Is used to map the ever-expanding range of applied modern approaches. The importance of performance evaluation due to increasing competitiveness of talk and successful application of new modern paradigms such as lean manufacturing or World Class Manufacturing. In addition, it is needed to support and verify performance improvement programs such as Just-in-Time, Total Quality Management, Concurrent Engineering.

These approaches are characterized by their ability to contain several changes at once: for example, increasing the quality of products, together with reduction of production costs and delivery dates. As one from resulting approaches of logistics measurement are used systems of performance measurement traditionally oriented to control production costs and productivity. [4]

The input information, which are also foundation into logistics and performance measurement processes in the company, results of research that was conducted at UTB in Zlín and results of which were published doc. Bobak in 2011. The paper presents the results of file of 138 structured questionnaires of qualitative research (KC) and subset of 80 production organizations (KCV) found using cluster analysis and comparing results of comprehensive quantitative research (C). [5] [6] [7]

One part of research was to investigate the influence of factors affecting performance. The results were quite comparable in all areas, except for innovative activities, which according to respondents did not have significant influence and impact on performance of others. Logistics was also not given substantial weight.
Another outcome are performance measures of internal processes (graph 2). Significance of methods for 0,1,2,3 corresponds to frequency range of their use, a higher degree is again attributed to index systems productivity measurement, analysis, and work measurement and financial analysis. To most methods in future is attributed slightly higher meaning.

1.2 Initial hypotheses

This contribution will discuss the confirmation or refutation of these hypotheses.

H1: Manufacturing companies do not give sufficient weight to internal logistics. The importance of logistics is neglected at expense of other processes.

H2: Logistics as support of production processes is distorted, poorly managed and planned. Its activities affect business performance.

2. MATERIALS A METHODS

Previous research which preceded these steps, was conducted through a questionnaire survey. The paper deals with logistical audits, because previous research shows that the influence of balance on logistics performance is not too large. It will attempt to confirm or disprove the hypotheses that relate to the topic obtained facts.

Practical information was used to obtain data and information from the environment of companies. Research can be considered as qualitative. A few practical examples will be used to present of some results. Data and documents obtained by acting on personal logistics audits. Collection of information on the requirements for the execution of these companies and other audits preceded it all. Information to confirm or refute H1 can be obtained from it. All companies belong to the group of small and medium-sized enterprises based on the...
classification of the Czech Republic. Outputs were obtained using qualitative research and case studies. Names of companies and firms are not listed due to confidentiality of corporate information.

3. RESULTS

3.1 Priority objectives of companies

During dissertation thesis processing and research conducting, author personally involves in improvements and innovation projects in companies. It is a production company, where project execution or audit is required. Project or audit is required in several areas. It is divided into manufacturing, logistics, development and administration. This method of division is only basic, specifications of companies are more comprehensive, but always specialize in one of the listed. It can therefore be considered that it is required and that the requested area has great importance. There is logical reasoning that these requirements have already been through a narrower selection of company management. Selected area by companies are something unsatisfactory for the management, are bottleneck, do not meet the proposed requirements, constant outputs from process or in which company sees significant potential for future development. The last factor of development and eventually added value is very significant.

Also one of the possible indicators are weights of importance or priority improvement in some areas. Requested initial audits are input for next step in project. Financial costs for this decision are not negligible, because of level of participation can be evaluated, where current area of interest companies is. The result of this research is percentage of audits coated with subsequent projects, that companies focus on internal logistics processes. Research in this area is three years. The number of required audits focused on logistics was 27%. These activities have always been directed to solving current state of logistics, or to optimize these processes.%. These activities have been always directed to address the current state of the logistics or to optimize these processes. Production audits then occupied 70%, administration 2% and innovative 1%.

3.2 The approaches to logistic audit

The content of the following sections will mainly observed deviation, waste and defects of the desired activity or standard. The inefficient activities were discovered during audits. For clarity, the outputs of implemented methods are shown. In every audit is always a need to ensure quality of work and the proportion of each activity. The logistics audit activities are efficient transportation, empty ride, removing the material, searching, waiting and manipulation. Graph n. 3 shows a high proportion of unreasonable transportation and searching, which makes in total 29.3%, which represents a third of the working time. The searching was 56min of 6h30min in this case.

Graph 3 Činnosti vnitropodnikového logistického procesu

The causes of empty transport is usually lack of timetable, list of carriage or protocol of specicitations, result is random transport, based on the actual requirements of production workers. The causes of searching (Fig. 1) are the most problems with marking material, storing large volumes of material, non-compliance of the information and the real label and also very frequent blockage in communication.
The another tool for detecting gaps in the logistics audits is the spaghetti diagram. With this method could be comprehensively identify any transportation per audited period time in the area where the shipments are occured. There is detecting of crossing paths, inefficient transport and mapping of all charges. One of that diagrams is shown in Fig.2.

![Spaghetti diagram](image)

**Fig. 2** Spaghetti diagram

The errors and significiant defects could be sorted out into several areas. These are shown in Tab. 1.

<table>
<thead>
<tr>
<th>Deficiencies</th>
<th>Frequency / description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Searching material</td>
<td>13.38%</td>
</tr>
<tr>
<td>Unclaimed transport</td>
<td>24.30%</td>
</tr>
<tr>
<td>Rearranging material</td>
<td>5.05%</td>
</tr>
<tr>
<td>Distant pedestrian routes</td>
<td>even 4620m</td>
</tr>
<tr>
<td>Mismatches information</td>
<td>differences from IS</td>
</tr>
<tr>
<td>Nothing to transport</td>
<td>mistaken information</td>
</tr>
<tr>
<td>Utilization of priorities</td>
<td>priority transport</td>
</tr>
<tr>
<td>Absence accompanying documents</td>
<td>2x</td>
</tr>
<tr>
<td>Occupied space</td>
<td>In the area controlled warehouses</td>
</tr>
</tbody>
</table>

From the list, it is clear that despite the planned activities of logistics, there is considerable space for improvement. If it were only clearly measurable deficiencies so the space for improving is 42.7% of available time.

### 3.3 Contents logistics audit

The following section focuses on the initial steps, without it does not crawl continue smooth optimization and increase productivity and ultimately the company’s performance. This is an initial analysis aimed at the internal logistics company.
Tools and techniques for the analysis need to use for proper analysis process. This analysis is the default for subsequent optimization. Breakdown is based on the implementation of the classic analysis of manufacturing processes with application to logistic processes. Table 2 is designed to illustrate the implementation of of the audit. The proposals can be completed with the required specifications, which may differ according to the type of industry.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Analýza</td>
<td>Picture working day, VSM, Spaghetti diagram, utilization</td>
</tr>
<tr>
<td>2. Evaluation</td>
<td>Pareto analysis, mains analysis</td>
</tr>
<tr>
<td>3. Suggestion</td>
<td>Kaizen Blitz (VSM), new layout, rules, transport priorities</td>
</tr>
<tr>
<td>4. implementation</td>
<td>Standards, timetable, milk-run, production plan, Action plan</td>
</tr>
</tbody>
</table>

4. DISCUSSION

The research published by Mr. Assoc. Bobák already indicated that logistics respondents do not attach the highest importance - it is about 70%. Creation of value can be clarifying that takes place in the manufacturing process. Result of research confirms H1. Only 27% of the companies have requested audits of logistics. The companies do not attach much importance to internal logistics as the other processes. Practical application of logistics audits were used for the research of this article. The result was the fact that scope for improvement in up to 42.7% is in the clearly measurable parameters. This kind of wasting is going a lot of money from company. Companies have losses and reduces the performance to them. H2 is also confirmed.

5. CONCLUSION

The paper is devoted to the impact of logistics audit on the performance of the company. The importance of logistics is described and emphasized in the introduction. The characteristics of performance measurement outputs of the research is also the beginning of the content to which the paper follow-up. Defined hypotheses were confirmed by the results of research conducted in the environment of manufacturing companies. The logistics audit process was designed for use. The paper was supplemented by examples of practical implementation. The optimal organization of production, directness, the shortest length and continuity of material flow are the principle of internal logistics. That means uncovering deficiencies can be set through at first by logistics audits.

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LITERATURE
