A NEW APPROACH OF THE LOGISTICS AUDIT

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Abstract

The article is dedicated to a new approach of the logistics audit according to the methodology of the Chamber of Logistics Auditors of the Czech Republic. In 2002, the new foundations were established for the uniform and complex diagnosis of logistic processes in the production and sales organizations. The original methodology has been currently reviewed and complemented. The logistics audit – in a frame of the new concept – is strictly based on system approach. The audit examines and diagnoses the logistics planning system, the system of logistics data and the whole material flow. There are approximately 100 questions aiming to 32 key logistics functions occurring in companies. Auditors in collaboration with the audited company select suitable answers to these questions from the predetermined range of answers. The result of the logistics audit is the evaluation of all the logistics functions (in percents) linked to the strictly structured and very exact list of the deficiencies in logistics. The list is followed by the set of proposals and recommendations how to improve the logistic processes in the company.

Keywords: Logistics, logistics audit, auditing, logistics audit, methodology

1. INTRODUCTION

Despite we are getting used to necessity of an audit presence as an inseparable part of the company life, this word does not awaken very pleasant feelings inside of us. Accounting/Financial audit, Quality systems audit, Ecological audit, Information systems audit – we can imagine under these words controlling activities, which have to be realised to protect us from imminent sanctions. It is necessary to assign to this group the Logistics Audit also, which is more and more frequently discussed word in both theory and corporate practice. [1] There are next principal reasons why to think over and to discuss over the logistics audit (even more, to implement it). The only logistics characteristic issue’s identification is, in the present days, so significant, on the one hand, and so complex, on the other hand, that this general perceived mission of the introduction analysis part is worth to be explained separately.

The Chamber of the Logistics Auditors laid the foundations of the unit complex and systematic diagnostics of the logistic processes in manufacturing and trade companies. The author’s goal is the methods innovation, which has been required by practical experience and changes in logistic processes.

2. LOGISTICS AUDIT

The Logistics Audit word is more and more frequently word, which has been discussed and mentioned in theory related to logistic processes and to the logistics as a whole.

Marham states that in the future commercial success will be dependent on ability to manage changes. That is why it is essential for every company to study and analyse effectiveness and efficiency of logistic processes. The Logistics Audit can be very helpful and useful tool in that analysis. [2]

Sople states analogously: „For enhancing the performance of the logistics system, it is necessary to take stock of the efficiency and effectiveness status of the various sub-systems of the logistical chain. This process is called Logistics Audit“. [3]
Logistics Audit cannot solve existing or awaited tasks/issues, which a company faces in the logistics area. However, it is not the only status declaring without taking into the account ways leading to its positive change.

To answer the question WHAT TO CHANGE it is necessary also, as the Audit declares, to deliver basic answers to questions HOW, WHO, WHEN and HOW MUCH will cost to realize the change. Previous audit experience shows that this form of entering into the logistics management application is very efficient and economically well-founded product of the logistics consultancy service, in the ration of value for money.

Kroker states: „Logistics audit should provide information about possibilities and directions how to improve present situation in the corporate logistics system and in processes which are implemented in the system. Issued recommendations and advises should to highlight processes which it is possible logistic cost reduction or optimization, customer services quality level increase (internal and external) in a company, and flow acceleration in logistic units system, linked to stocks decrease.” [4]

Repeatability is also very important aspect of the logistics audit according to Voortman. The author points out to necessity to carry out the audit by external specialists because of their independence. [5]

3. **INNOVATED METHODS OF THE LOGISTICS AUDIT**

Logistics Audit is the method for complex and independent diagnostics of the corporate logistics system functionality. Strategy, tactics, and shortage removing plan determinative are the part of the logistics audit, and subsequent logistics system improvement.

The method how to perform and realise the logistics audit is built from free subsequent parts:

- Descriptive,
- Diagnostic,
- Proposal.

### 3.1 Descriptive part of the Logistics Audit

Descriptive part of the Audit is summarizing and describing all key parameters, measurable values and practice statuses of the logistics corporate system. This audit part includes:

1. Logistic chain scheme of the audited company as the Sankey’s diagram of the material flow,
2. Basic space layout of the audited chain
3. Verbal description of the implemented logistic strategy, management principals and logistic process realisation
4. Summary of all measurable parameters and logistics system figures

Measurable parameters can be divided into two categories:

- B – Basic measurable figures – these figures are „obligatory” for audit process.
- C – Complementary measurable figures – these can be complemented and adjusted by an auditor according to the particular situation in the audited company.

Each of the measurable parameter and figure is categorised according to the validity level by auditor validity:

I. Figure can be evaluated exactly and easily
   E.g.: Forklift truck quantity, immediate inventory status, revenues from good’s sales.

II. Figure can be evaluated laboriously and difficultly, it was estimated for audit’s purposes only
   E.g.: inventory turning time, time usability of forklift trucks, pallet per a day storage costs.

III. Figure cannot be evaluated exactly; it can be estimated very roughly or not at all for audit’s purposes.
   E.g.: One-pallet receiving process costs, ordering costs per one figure of the purchase receipt.
3.2 Diagnostic Part of the Logistics Audit

Diagnostic audit part goal is to analyse to what extent corporate logistics systems are optimized or to what extent these systems meet practical requirements in the particular company environment. The extent is expressed by the positive answer’s percentage in ratio to the set of defined questions referred to the audited company logistics system. The audited company logistics system is divided into four parts during the audit (see figure 1):

- Logistics strategy,
- Planning and controlling system,
- Information system,
- Material flow.

![Fig. 1 Corporate logistics system diagram](image)

Logistics system units correspond to particular objects in the Logistic Processes diagram (see figure 2).

![Fig. 2 Logistic Processes diagram](image)
Diagnostic questions are divided into two categories:

- **A** – questions related to the logistics system as a whole or sub-system,
- **B** – questions related to single system or sub-system units.

It is necessary to answer each question by one of free possibilities: YES, NO, PARTIALLY, NOT EVALUABLE.

An auditor always connects the comment with reasons for the status in an audited company if the question is evaluated by answer NO or PARTIALLY. At the same time, the sign is connected to each of, in such way, evaluated question whether this means weakness, opportunity to improve or threat.

**Evaluation scale:**

- **A:** 95 – 100 % - excellent logistics system,
- **B:** 80 – 95 % - successful logistics system,
- **C:** 60 – 80% - acceptable logistics system,
- **D:** 0 - 60 – not acceptable logistics system.

Evaluation is further decomposed to single logistic sub-systems (corporate logistics system, Planning and controlling system, information system and material system); mathematical method is similar to the overall evaluation.

### 3.3 Proposal Part of the Logistics Audit

Proposal audit part is formulated as such called Action Plan. This is chronologically sorted activities description. The evaluation change of diagnostic questions from NO or PARTIALLY status to YES can be reached by these activities implementation. Activity can be:

- **Measure** – simply implemented instruction or command in extent of existing managing structures, not requiring any financial costs.
- **Task** – independently resolvable (e.g. workshop presentation), not requiring significant investments or time lost, but requiring coordination and cooperation of employees who are interested in implementation
- **Project** – systemically managed change requiring project management principal’s application paralleling with increased investment and time demands.

Priority to solve is defined for each measure, task or project:

- **α** – the highest priority – not resolving threatens the company competitiveness,
- **β** – high priority can to improve logistics system functionality significantly,
- **γ** – opportunity to improve a situation.

It is necessary to assign to each activity also:

- time and investment demand estimation,
- necessary human or material resources to solve issues,
- responsibility,
- risks,
- if needed the comment.

### 4. EXAMPLES OF THE LOGISTICS AUDIT OUTPUTS

Worked-out methodology has been tested in the existing company. Tangible graphic outputs are shown in Figures 3 and 4. The figure 3 is showing the whole level of the researched logistics system, including its four parts. Each part is further dividend into particular areas, which are shown in the figure 4.
Fig. 3 Overall status evaluation

Fig. 4 Detailed evaluation of particular processes
Distribution Strategy, Logistic services providing strategy, Strategy of the supplier relationship management, Production Strategy, Visions, Operating purchase, Purchase planning, Sales planning, Production Planning, Inventory Planning, Forecast, Distribution Management, Stock operation management, Production Management, Inventory Management, Generally, Order Processing, Supplier Relationship Management, Transport (IN), receiving, Transport (OUT), expedition, Material flow manipulation in the production, Storage of main production and goods, Material storage, Generally, Backward flow, Workshop orders, Expedition orders, Purchase orders, MATERIAL REQUIREMENTS, ordering requirements, Customer requirements, Sales orders, Supplier accompanying documents, Transfer document to stock, transfer document to production, Order to dispense, storage orders, generally, production dispatch note, production orders

5. CONCLUSION

The article introduces a new approach to the logistics audit methodology, which has been used by the Chamber of the Logistics Auditors of the Czech Republic to audit/evaluate logistics systems and processes. These methodology assets are complexity, focusing on tangible outputs in a form of defined action plans, standard interpretation allowing repeatable evaluation or researched systems and processes and all-purpose usage, including their benchmarking. On the other hand, the element of openness is kept to be able to evaluate specific conditions of the particular logistics system or process. The method is supported by software tool, which is offering systematic and transparent outputs.

LITERATURE