



10th International Scientific Conference Transbaltica 2017:  
Transportation Science and Technology

## Work Standards in Selected Third Party Logistics Operations: MTM-LOGISTICS Case Study

Michal Koptak<sup>a</sup>, Martina Džubáková<sup>a</sup>,  
Virgilija Vasilienė-Vasiliauskienė<sup>b,\*</sup>, Aidas Vasilis Vasiliauskas<sup>b</sup>

<sup>a</sup>University of Economics in Bratislava, Slovakia

<sup>b</sup>Vilnius Gediminas Technical University, Lithuania

---

### Abstract

Good relations between company, suppliers and logistics provider must be based on a win-win strategy, so quality (and price) of services is essential factor in establishing long-term relationships. In this paper we offer the MTM (Methods Time Measurement) standard development as basis for determining quality and price parameters for fair 3PL contract. We use case study and “MTM draft development” to show opportunities to increase the productivity and reduce the costs related to outsourced processes in the selected enterprise. We provide a brief overview of the methodology MTM-logistics and show MTM as a tool for optimization of logistics operations in order to create the standards of individual activities that are outsourced to external companies in selected industrial enterprise. Standardization gives us a good basis for quality improvement and price negotiation.

© 2017 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of the organizing committee of the 10th International Scientific Conference Transbaltica 2017

*Keywords:* MTM-logistics, logistics, outsourcing, 3 PL services, value stream mapping

---

---

\* Corresponding author.

E-mail address: [virgilija.zinkeviciute@vgtu.lt](mailto:virgilija.zinkeviciute@vgtu.lt)

## 1. Introduction

Modern industry is aimed at producing well-designed products that are available to the large number of consumers as soon as possible. Furthermore the business environment is characterized by high competition, while the requirements of consumers increase. Many companies focus on their core competences and outsource other activities, to reduce cost or increase customer service level and revenues. The goal is to reduce lead-times and increase flexibility and responsiveness. Specialized company can provide required services faster and cheaper. Outsourcing can therefore be defined as strategic application of external resources in areas traditionally provided by internal employees. That means the process of shifting responsibility for specific business activities from one company employees to other subjects. In order to continuously reduce costs, companies outsource one or more logistical functions to Third Party Logistics companies (3PL) [6]. Although 3PL has many definitions, we take one from Sink and Langley [9]: 3PL provider is an external supplier performing some or all of a manufacturer's or customer's logistical functions". 3PL companies providing logistical outsourcing are oriented to provide comprehensive and high-quality logistics solutions that lead to the service quality improvement of the final product in order to make customers feel more comfortable [12]. Logistics services may represent the source of competitiveness to any company. Trying to meet more customers' needs of quality and price, companies are forced to find some real options how to increase their services inside a particular process and across the entire supply chain. Good relations between suppliers and logistics service provider must be based on a win-win strategy, so the quality and price of services is essential factor in long-term relationship.

## 2. Methodology and approach

To show the perspective of MTM (Methods Time Measurement) in logistics, we provide a case study. MTM-logistics specifies standard processes in logistics, which describes and at the same time assigns the rules and affecting quantities to determine the time standards based on tables. Setting up of standards for those processes using this method leads into the optimization of times. Along with logistics processes almost all companies run the similar actions with high repeatability that in general underlie the same rules. Just within the frame of the analysis is necessary to take into consideration individual variations in the processes as well.

### 2.1. MTM in Logistics

Historical evolution of work analysis contains a variety of processes and techniques more or less accurate. First research, started by Taylor and his Time Studies, ended up in observing a job and breaking it down into individual tasks [10]. Work standards enabled the workman to work faster and with better quality than before. Many scientific studies occurred with further development of work standards and Predetermined Motion Time Systems (PMTS). The foundation of PMTS was laid out by the research and development of Frank B. and Lillian M. Gilbreth [2]. PMTS work measurement systems based on the division of work into basic human movements, classified according to the nature of each movement and the conditions under which it is made. One of the significant advantages of PMTS was that they require a detailed description of the working method, and are thus useful for studying how work is done, how it can be improved as well as measuring the time it should take [5]. PMTS allowed the use of standard predetermined tables of the smallest body movements, and integrating them to predict the time needed to perform a simple task. Predetermined motion time systems has gained crucial importance, it can predict work time and quality without observing the actual work. In the 50s Maynard, Stegemerten and Schwab developed Methods Time Measurement (MTM) [7]. MTM was the first of a series of predetermined motion time systems, predetermined in the sense that estimates of time are not determined in individually, but are derived from an industry standard.

MTM method is the most widespread method used for measurement and work analysis. High productivity of this method relates to the speed, which enables to make a draft of time standards that means boost of productivity of supervisor by time standards, of course. Since founding the MTM Association (1951) and the national associations (Sweden in 1955, France 1957, Switzerland in 1956, etc.) there is a long tradition of using and distributing MTM in logistics. MTM – data catalogue for transport and storage was founded at request of members of the association

Download English Version:

<https://daneshyari.com/en/article/5027866>

Download Persian Version:

<https://daneshyari.com/article/5027866>

[Daneshyari.com](https://daneshyari.com)