

# The New Logistics Trends in Support of Retail

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In today's business environment, business rules are little more than guidelines that drive the company. If the sales process was properly used, they could be instruments for competitive advantage, which will enable the company to be more innovative, more productive, and react more quickly to market changes and can make a successful collaboration with employees, partners, and customers. Importance of business rules for the operation must not be neglected. Today, there are new logistics trends that are accelerating and that positively affect sales, but despite this, it is obvious that there is a large number of enterprise staff who still use the outdated, rigid, and other inappropriate applications. Starting from the fact that the transportation and logistics represent one of the key factors for the development of a country's trade, and thus to encourage economic development and to connect with the world economic trends, there was a need to analyze the emerging logistics trends and to perceive their role and importance in the process of sales, as a condition for the development of sales at macro and micro levels.

*Keywords:* logistics, logistics trends, merchandising, productivity

## Introduction

Computerization, globalization, and internationalization have led to drastic changes in retailing. These processes resulted in the acceleration of retail processes, creating new distribution channels and revenue growth in the retail trade, as well as globally. Globalization and the changing dynamics of the industry have forced retail businesses to review their business strategies and to implement new technological solutions to improve customer service. Especially, logistics in the past decade has the greatest impact on the development of retail, thanks to the constant development of new technologies present in logistics (Ellram, LaLonde, & Webwr, 1999). The use of new technologies stems from labelling goods and becomes conducive to faster electronic receipt, labelling, and sale. The new technology consists in labelling with bar code and radio technology (Radio Frequency Identification (RFID)) that affects further full automation of trade processes, particularly in the transport, storage, and supply of goods.

## The Role and Importance of Logistics in the Modern System of Reproduction

Logistics in the 20th century, developed very quickly, especially affirms the economy (Zelenika, 2005), and it has become an important factor in the development of the country and has a significant impact on the retail sector. Research conducted by the McKinsey Global Institute has revealed the impact of logistics on national productivity, i.e., the development of the retail sector and the impact of the world's leading retailers Wal-Mart for developing countries (Mangan, Lalwani, & Butcher, 2008).

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The importance of logistics to the national economy is reflected in the share of logistics services in the gross domestic product (GDP) of the country. This share varies and is higher in developed countries compared to countries in transition and developing countries. Logistics services share in GDP in highly developed countries (e.g., Germany, France, United States of America (USA), and Japan) for the past 20 years has been around 10%-15% (Wifi Croatia, 2009). Level of development of logistics depends on a number of factors that cause the intensity of development to vary within individual sectors. In accordance with Table 1, which shows the share of logistics services in GDP in transition countries and developed countries, it is evident that the highest intensity of development of logistics is in the tertiary sector.

Table 1

*Logistics Services Share in GDP in Developed Countries and Countries in Transition*

| Sector    | Highly developed countries (% , year 2000) | Countries in transition (% , year 2000) |
|-----------|--|---|
| Primary   | 25   | < from 10                               |
| Secondary | 30   | < from 10                               |
| Tertiary  | 50   | 10-20                                   |
| Quarterly | 30   | 10-20                                   |
| Quintaly  | 30   | < from 15                               |

Note. Source: Wikipedia (2009). Retrieved from [http://www.hr.wikipedia.org/wiki/Gospodarski\\_zna%C4%8Daj\\_logistike](http://www.hr.wikipedia.org/wiki/Gospodarski_zna%C4%8Daj_logistike).

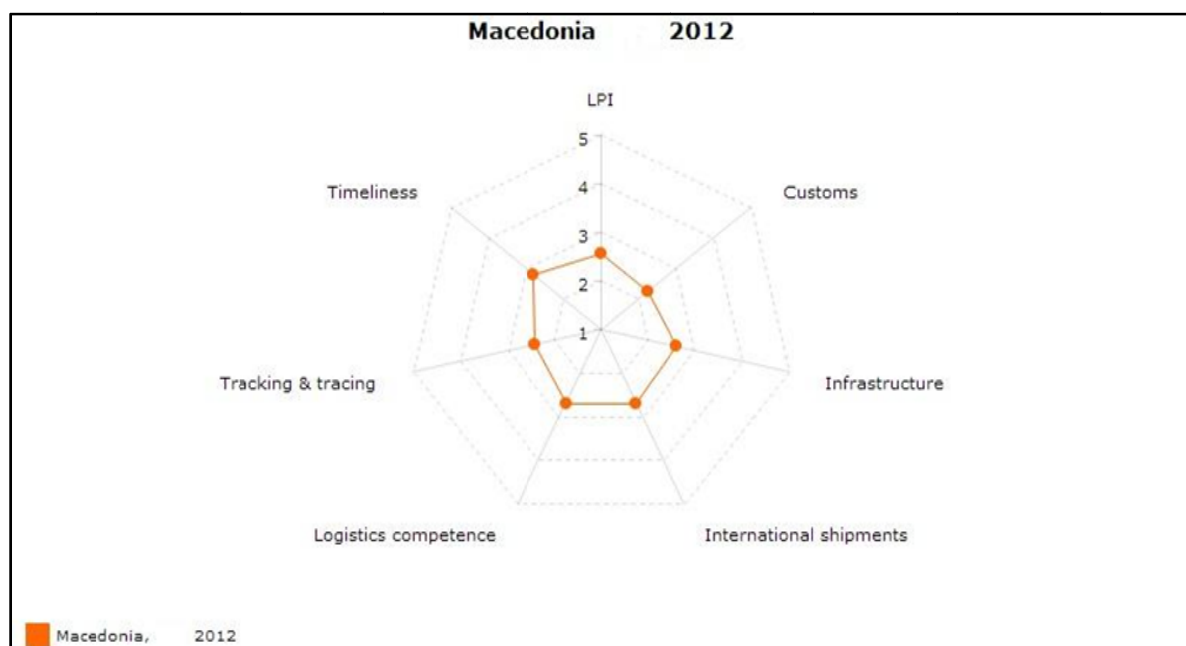


Figure 1. Value of the logistics performance index (LPI) of Macedonia. Source: The World Bank (2012c).

According to the research carried out in Western Europe, the share of logistics costs in total operating costs of companies accounted for an average of 10%-25% (Wikipedia, 2009), and the results of studies conducted in 2003 in Europe show that logistics costs accounted for 7.8% of revenue, and in year 2008 an increase of 8.5% (Segetlija, 2005).

Ranking countries in logistics operations, United States (US) consulting firm AT Kearney uses global logistics operations index (engl. global LPI) developed by the World Bank (Mangan et al., 2008). Logistic implementation index, i.e., logistical excellence, includes seven indicators: customs, infrastructure international

transport (engl. international shipments), logistical capability (engl. logistics competence), tracking of goods (engl. tracking and tracing), domestic logistics costs (engl. domestic logistics costs), and the timeliness of delivery of items to required destinations (engl. timeliness). The goal of logistic implementation index is a comparison of the average performance index of 150 countries according to the above indicators and quality assessment of individual indicators of nominal scale (ranging from 1 to 5, where 1 is the worst score and 5 is the best score) as well as the ranking of countries in terms of other countries (The World Bank, 2012a). According to the logistic implementation index, the leading country in logistics operations is Singapore (LPI value = 413) (The World Bank, 2012b), while the Republic of Macedonia ranks the 99th with the LPI value being 2.56475 (The World Bank, 2012c), as shown in Figure 1. Figure 1 shows that the best indicator in the Republic of Macedonia is the timely delivery of shipments to required destinations, with a value of 2.79079.

### **New Technology in Logistics—RFID**

RFID is still considered as the domain of young technology, because it develops at a longer period, lately come to its commercial exploitation and varied use of the same (Roussos & Kostakos, 2009). RFID is an electronic procedure for the identification and marking of goods and living creatures. It is a technology that uses radio frequency to exchange data between the handheld device and computer memory. RFID system typically consists of a transponder (tag that contains information about the product) which communicates with transponders and antenna controller that controls and monitors communication between the antenna and the computer. The ultimate goal of the use of this technology is that any product, each element, or each part of a complex product has its own unique number and can be monitored in the whole chain, from production to waste at everywhere and anytime (Ustundag & Tanyas, 2009). Use of this technology allows continuous insight into the amount of inventory, automated ordering product, and simplified recovery. Although RFID has been mentioned for over a decade, the implementation of this technology has recently begun at the request of the US military and major shopping chains, including Wal-Mart and their suppliers who have delivered such marked goods. Wal-Mart, in the middle of 2003, asked its 100 largest suppliers to place RFID tags on all products until January 1, 2005, and the project responded to Gillette companies, Hewlett-Packard, Kimberly-Clark, Sara Lee, and Johnson & Johnson (Petljak & Tupanić, 2009). The main reason for the slow implementation of modern technology for marking products on the Macedonian market is the high cost of equipment and the work that is generally not included in the value of the end product. Nowadays, solutions for product declarations are developed by using databases, Internet, and other product declarations that can provide all necessary information on how some products are being crafted and what are the components of the product, and such information is provided by the global electronic network (engl. Electronic Product Code (EPC) Global Network, Grasso, 2004). Electronic global network enables tracing and monitoring products and data stored on the product throughout the entire supply chain. In this way, users have access to all requested data. EPC Global Network is the backbone of the RFID technology which is unique compared to other available technologies that enable the exchange and processing of data over the Internet and a much faster way compared to all known technologies. The greatest value of the RFID system is contained in the EPC Global Network that offers each participant in the supply chain automatic data collection, processing, storage, and control over the information collected through the Internet for each object. In terms of cost, it can be said that more physical proximity of the goods means increased costs for companies. Potential savings depend on the automation of handling products. Figure 2 shows

the costs of enterprises in the US (in %) in the total commodity handling (Brand, 2006). It is evident that the greatest costs of enterprises in the total cost of handling goods represent entry controls (36%), order processing (32%), and delay of goods (23%).

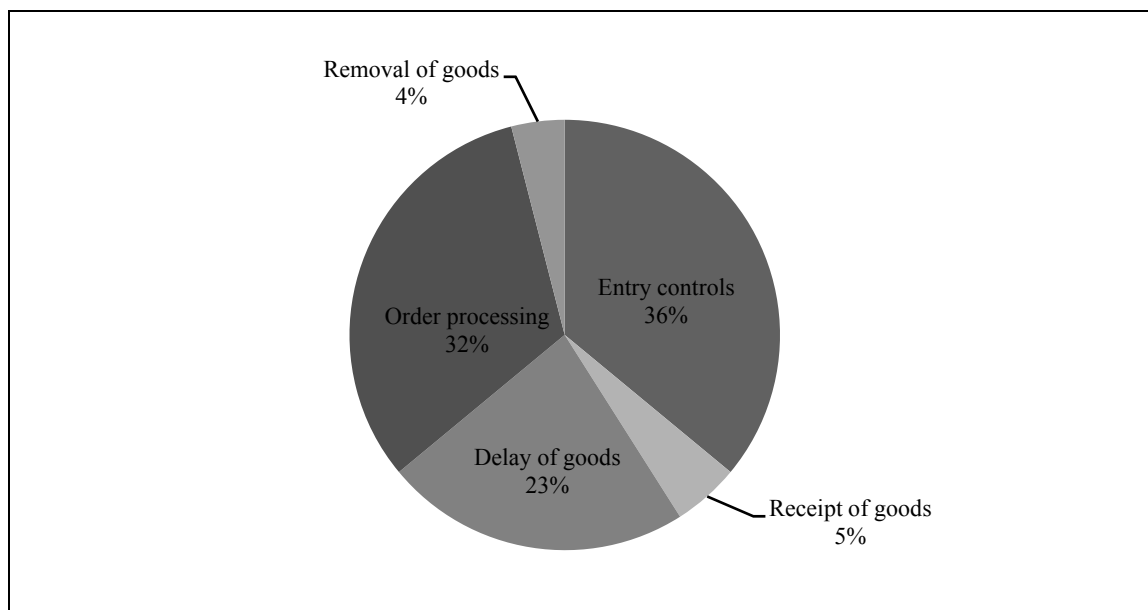


Figure 2. Share of individual works in the overall handling with goods.

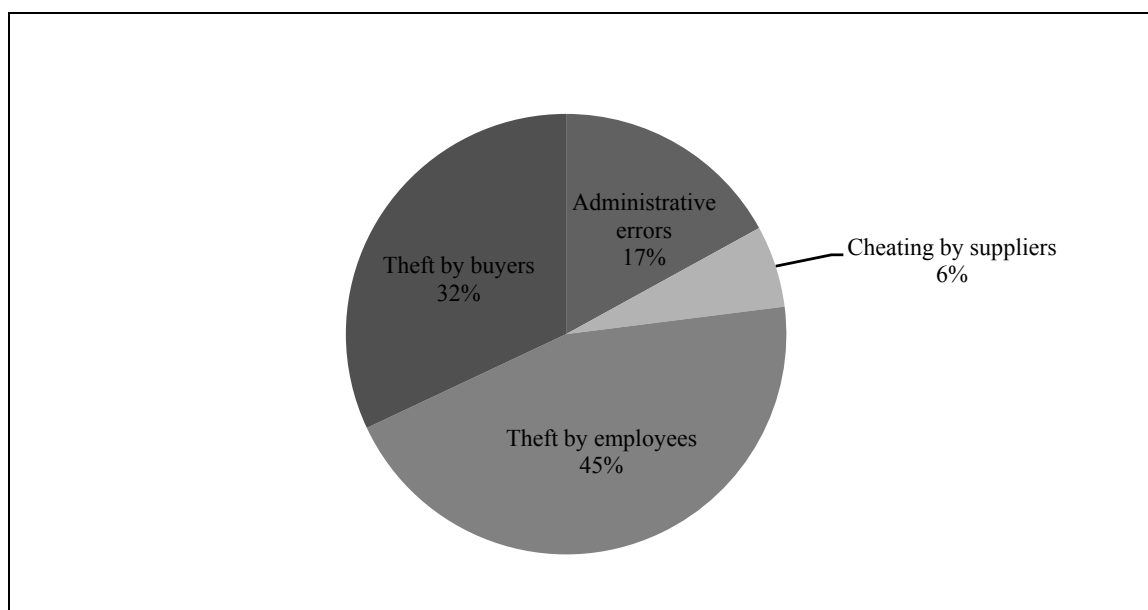


Figure 3. Display of loss of goods in a company. Source: Brand (2006).

Figure 3 shows the loss of the products in the enterprise, and it is evident that the greatest costs of loss are caused by stolen products, theft by employees (45%), as well as theft by buyers (32%). Computer simulations show that the application of RFID technology is a potential saving in these activities between 5% and 40% (Brand, 2006). Similar analyses associated with the use of RFID technology are made in companies dealing with transport.

### Conclusions

Soon, the use of RFID technology in the retail supply chain management (SCM) will become a necessity for survival in the global market. Its further development and expansion is unquestionable, but it certainly will not pass without interference.

Inevitable barrier present is still the relatively high price of RFID tags. Currently, it is around 15-20 cents for a passive tag, and it tends to fall below five cents per tag, which will enable the mass use of tags, because it will not significantly affect the cost of the final product. Also, there would inevitably come to further deepening of the cooperation between retailers and suppliers in order, they together, to be able to take advantage of the benefits that investment in RFID technology enables them. This cooperation, in the course of development, has not always been mutually accepted. This stems from the fact that retailers using the influence most of the cost of introducing RFID technology have shifted to the suppliers/manufacturers.

They are required to embed RFID tags in products that represent the largest costs in the implementation of RFID technology in the supply chain (buying tag machines used for installation of tags and readers that can read and write data, and all other associated RFID equipments). On the other hand, retailers only take advantage of tags that manufacturers install, and it requires considerably less expensive infrastructure. Of course, because of all these extra costs, the suppliers have to drop off the market (it is especially true of smaller suppliers who can reduce the increased fixed costs of production in quantity).

The biggest problem arises in meeting the requirements of many different organizations for the protection of consumers, as well as the European Union, emphasizing the need for legal and technological insurances privacy of consumers who may be harmed by unethical use of RFID technology. Improving standardization and being able to use RFID technology for different activities are just some of the challenges for the future of RFID. But even now, it is certain that RFID technology is a revolutionary technology that allows many ways for successful optimization of logistics processes in the supply chain.

High reliability means that RFID technology is highly profitable and that companies which do not implement this technology in the near future will not be able to survive in the market. Such companies will be competitive and compliant to meet the demands of the environment.

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