

## Chapter 12

# Improving Performance and Customer Satisfaction via the Use of Information Technologies in Public Transportation and Logistics Systems

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### **ABSTRACT**

*During the last two decades, the enhancements in Information Technologies (IT) and the extension of their usage have transformed completely the ways of doing business. In addition to providing a competitive advantage, the utilization of information technologies help businesses to organize all information related with their customers, increasing their level of satisfaction from the good or service provided, support decision making processes and increase the collaboration between supply chain members. Due to the increase in overseas trade and the globalization trends, the usage and importance of Information Technologies in transportation have risen up extremely. This chapter aims to emphasize the growing need for and role of IT in Turkish public logistics systems, present examples of these systems' implementation around the world, and specific benefits to be gained in terms of efficient operations and improved performance, profitability, customer satisfaction, and social welfare. In this respect, the authors aim to draw attention to the significance of the management Information Systems in different areas of public service.*

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## **INTRODUCTION**

Information technologies can be used in all operations and logistics systems in order to improve the decision making activities and increase utilization and efficiency in a competitive environment. The increasing demand regarding the improvement of logistics infrastructure and systems in countries that are in hub positions for global transportation networks makes the use and implementation of information technologies a necessity for ensuring effective and efficient transportation of goods across the world. In consideration of the importance of Turkey as a gateway between Europe and Asia, the use of management information systems and IT is vital in the successful management of logistics systems connecting these two continents. Turkey has a strategic position as a bridge between Europe and Asia, which makes the country a hub and a logistics center operating between three continents. In addition to its geographically advantageous position, Turkey's trade with European Union, Middle East, Asia and Africa could be considered as another important reason of the potential of the country to be a regional logistics center.

The Turkish government is aware of the importance of IT systems and adopting them in various areas of implementation. In public sector, projects of e-treasury and e-government are implemented and started to be used effectively with the core aim of public welfare. In spite of the expansive use of these systems, many governmental institutions such as Turkish State Railways and public ports have not yet adopted any sophisticated information technology systems. There are various reasons for this situation, including the high initial investment cost for such systems, insufficient traffic intensity to justify the need for such a system, or simply inattentive management. However, there are many successful implementations of information technologies in logistics systems that should be taken into consideration for improving the efficiency and effectiveness of these governmental institutions.

The employment of information technologies alone can be the source of growth through the improvement of main performance measures. The public reform in the logistics systems of the country can be realized by the adoption of information technologies.

Turkish State Railways and public ports are facing an aggressive competition, as global transportation companies operating in Turkey have highly effective operations. Therefore, improvements in the service quality and the satisfaction levels of customers are crucial for public railways and ports to have a competitive edge in this market.

In consideration of the opportunities that can be obtained via the effective use of IT systems, this chapter aims to emphasize the growing need for such systems, and the role they can have in public logistics. For this purpose, we first illustrate the lack of IT systems in public logistics in Turkey, and then examine some exemplary implementations around the world, and the specific benefits to be gained in terms of efficient operations and improved performance, profitability, customer satisfaction and social welfare.

## **HISTORY AND CURRENT SITUATION: TRANSPORTATION IN TURKEY**

Turkish State Railways (TCDD) was established in 1927 as a governmental institution to take over the existing railways in Anatolia which were held by private companies during the Ottoman Empire. Most of the country had no railways during 1930's and 1940's, and the main expenditure of the government was the extension of the existing railway network. Although some major lines were added to the network connecting the main cities of the country in the beginning, this extension came to a halt after the Second World War.<sup>1</sup> After 1990's, the need for urban mass transportation has given a rise to the investments for light rail and heavy metro systems (see Figure 1).

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