

TRANSPORT LOGISTICS MANAGEMENT ANALYSIS FOR CORPORATE USING MODERN TECHNOLOGIES

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ABSTRACT

Logistics, concerned with the planning and control of the movement and storage of materials/goods and people's transport is very important to the modern economy and services. In today's world the companies face the challenge of getting the right materials/goods or people to the right place at the right time.

The logistics management or the supply chain management is the administration and integration of procurement, inventory management, warehouse management and distribution, related to information etc.

In this paper, the transport's logistics management in a corporation and in an urban passenger transport is analyzed, trying to build the common model. At the both study cases the monitoring and information systems for different logistics activities have been built using modern technologies (GPRS, GPS, GIS etc.)

The recommendations based on results of analysis could be very useful and of importance for further improvement of existing monitoring and information systems in the corporate.

Key words: Logistics Management, Corporate, Urban Passengers' Transport, Modern Technologies

1. INTRODUCTION

In developing countries the need for constant development of transportation projects is a key requirement for economic and social sustainability. This is achieved by using models applicable depending on the demand for goods and passenger transportation.

The application of models using modern technologies, gives a better chance to meet the requirements, and thus achieve the goal set.

The purpose of this paper is that through logistics management to achieve superior transport of goods and passengers, service quality during transport, enabling a special attention to monitoring and information during the transport process and as well considering the vehicles' maintenance as a key to the success of a corporation.

For the logistics in the corporate for transport of freight and passengers, the main challenge is to make management of all transportation system elements, linked with each other in achieving desired goals.

In the study two cases will be analyzed:

- Managing the transport of goods in corporate, and
- Managing the urban transport of passengers.

In both cases there are similarities in terms of management, but each has its specificity and very special.

2. THE MANAGEMENT OF TRANSPORT LOGISTICS

Logistics in the transport represents a perfect system/entirety, where each part of it is defined and as the system is oriented to the realization of the certain purpose. It means rational exploitation of the vehicles in order to achieve a profit as planned with minimal expenses. The management of transportation fleet regards to usage of vehicles depending on the requirements for the needed transporting capacities, their carrying weight, the legislative procedures, efficient maintenance and exploitation, the management of cases for the accidents during work, fuel supply etc.

To respond to these requirements successfully in the organizational structure of the transport system, following departments are needed to exist:

- Sales Department,
- Marketing Department,
- Finance Department, and
- Logistics Department.

The size, importance, role and development of transport systems in these departments vary by size, nature and performance of their duties.

Basic scientific and professional duties which develop a management system are: planning, organization, structure (providing the staff needed for management), execution (implementation), leadership (decision) and checking/control.

In both study cases of the transport, control is the most important part where the aimed results set by planning, organizing, framing, execution and leadership are observed.

- In the transport of goods door to door, control is an integral part and important, because besides transport often goods must be secured, depending on its nature, and real time monitoring is necessary.

- In the passenger transportation control is essential and very important. It is achieved by monitoring all urban bus lines, which interferes directly in informing the passengers on real-time arrival of busses at stations.

The fundamental functions that the leadership should fulfill on managing with a transporting system are: finding and obtaining transportation duties, rational organization of transport processes, supply of tools and items of work necessary for the development of transport processes, objective and timely information (real time), and regular use and technical and economical maintenance of all means of transportation and other technical parts of transport system.

3. VEHICLES MONITORING AND PASSENGER INFORMATION

For normal operation of monitoring and information system it is required that the needs, opportunities and restrictions be clearly defined. The project idea is built in two phases.

In the first phase, the work should be directed on aims and methods for their realization, starting with the concept of working company/corporate, content and structure of database and determination of the inter-dependence of the system and its working environment.

In the second phase, the unique corporate information system should be recognized including elements such are: recording of situation, phases of design, propose of conceptual solution, calculation of necessary resources, assessment of expenses, and expected effects.

Monitoring the transport of goods and passengers, can be done through intelligent devices that function through: GPRS, GPS, GIS, etc..

Monitoring is done from the main base of the corporation, and the devices work in real time, with data stored in the main corporate servers. Equipment which will be discussed because of the economic feasibility work through GPRS (General Packet Radio Services) and the data transferred to the server through the GSM (Global System for Mobile Communications) and ISP (Internet Service Provider).

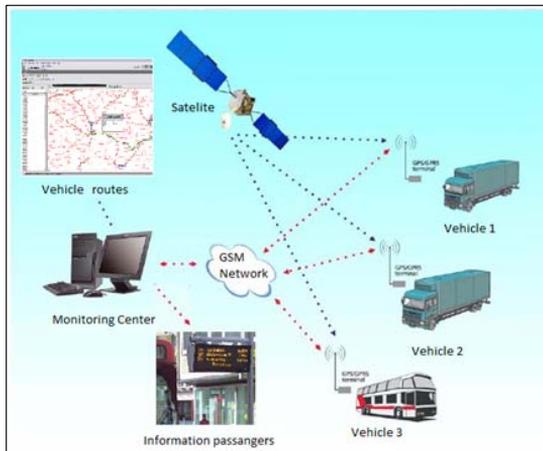


Figure 1. Logical scheme on functioning of the monitoring and information system

Monitoring the transport of goods is efficient because the transport of goods from door to door driver who transports is obliged to stick to the road set by the leadership (management) for conducting the preliminary plan and to eliminate possible offenses which may occur during this process.

Monitoring the transport of passengers serves as a receiver of information on the location of buses in the respective lines and transmission of information through modern equipment which can work via GPRS and Wireless to the passengers through the visual image and notice the sound monitors, fig.1.

3.1. Monitoring corporate vehicles

The monitoring of the vehicles is done to check during the transport of the goods from the main warehouse to the point distributions while respecting the routes defined from the management.

The GPS device through GPRS sends data online telling the location of the vehicle in real time, it sends data every 3 seconds from GPS device to the Server. In occasion of goods transportation the distribution route, time of stay in selling points and speed limit is defined to the driver of the vehicle.

To the driver that breaks one of these defined restrictions, the management sends the signal via SMS and notifies by reporting the status.

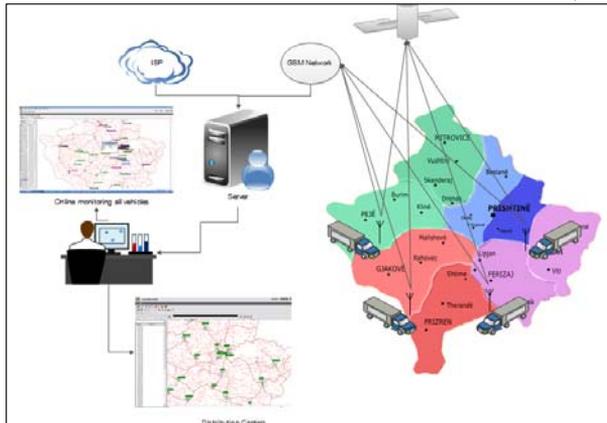


Figure 2. Logical scheme of monitoring corporate vehicles

The monitoring system works through devices shown in fig.2. Primarily the data is sent from the vehicle to the satellite through GPS, from GPRS antenna through GSM Network to the Server. Using ISP, the software in the server processes data and precise coordinates of the vehicle giving their locations in the map, where can be viewed stopping points, vehicle speed, time movement. From these data daily reports, monthly, yearly circulation of corporate vehicles are created.

3.2. Monitoring and passenger information

Monitoring the respective bus lines, is made to offer better and more comfortable conditions for public transport users as it enables determination of accurate location in the real time and then to inform correctly on the bus line and its arrival time. The monitoring system functions via GPS (Global Position System) where data are being transferred via GPRS into the main server, then via software they are processed and the exact location of the respective bus line is found, fig.3.

Following monitoring, data in the proceeding center are refined via passenger information software

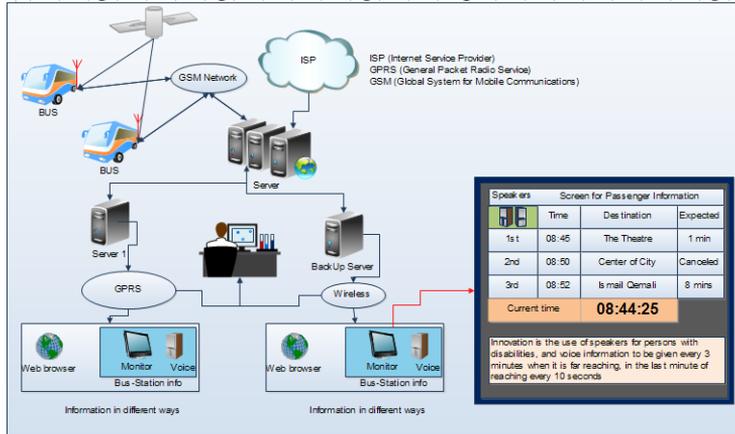


Figure 3. Logical scheme of monitoring and passenger information

4. CONCLUSIONS

Based on theory of logistics and transportation management of goods and passengers the new organization schemes are built using modern technologies. Therefore, analyzing two study cases, for the monitoring of corporate vehicles for transportation of goods can be concluded that:

- System showed in fig.2, enables better monitoring of vehicles in real time;
- Increases security for driver and as well ensures that goods will be delivered at aimed point;
- Better logistic planning of transport in certain time and control;
- Easier and more accurate reports.

and for monitoring and passenger information in urban transport, fig.3 can be concluded that proposed system:

- Enables real time information on timetable of buses and stop points with possibility using on-line website;
- Ensures better information for passengers with limited abilities;
- Is more suitable for elimination of delays in the use of school students and citizens that works.

5. REFERENCES

- [1] Ghiani G., Laporte G., Musmanno R: Logistics Systems Planning and Control, J. Wiley, 2004
- [2] Edited by Taylor G.D.: Introduction to Logistics in Engineering, CRC Press, 2008
- [3] Stock R.J., Lambert M.D.: Strategic logistics Management, McGraw Hill/Irwin, 2000
- [4] Liu J.: Supply Chain Management and Transport Logistics, Taylor & Francis, 2011