

## Analysis of the Use of Logistic Systems in Motor Transport Facilities Based on the Example of a Car Showroom

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**Summary.** This paper describes the role of logistic system in the effective operation of motor transport facilities. The description covers systems that influence the improvement of the organization of work in such facilities based on the example of a selected car showroom and improvements related to product supply and distribution (e.g. new and used cars or indispensable spare parts for repair work). The paper also presents the effect of marketing and control activities on the improvement of the offered services as well as on the acquisition of new customers.

**Key words:** logistic systems, motor transport facilities, car showrooms, car dealerships.

### THE ROLE OF THE LOGISTIC SYSTEM IN MOTOR TRANSPORT FACILITIES

A logistic system is a set of closely connected elements, the aim of which is to facilitate the management in different enterprises, including motor transport facilities. A logistic system is characterized by cohesion and flexibility. The cohesion consists in that all systems are dependent on each other, and any change in one of the systems creates pressure for changes in the other systems. Whereas the flexibility consists in that a change in the external factors, i.e. the market demand, competition or, e.g., new regulations, does not involve any changes in that particular system but it accommodates itself to the new conditions. Criteria of identity for logistic systems are presented in Table 1 [7, 13, 15].

Proper organization of work is of vital significance in motor transport facilities. The responsibility for the proper organization of work lies with the company's management board. Its aim is to establish and authorize projects the company needs for its efficient operation. The managers' basic objectives include establishing the shared vision, mission, strategies and goals of the company. In order for the management to be able to achieve the intended objectives, they must have access to all information on the parameters that shape the particular organizations structures of the company, the results it achieves as well as on the costs that have an adverse effect on its development. The cost-effectiveness analysis, which consists in calculation of the business-related costs, and the gain-loss evaluation are of great importance to every company.

In motor transport facilities, it is important to properly plan all the assignments to be undertaken and to ensure equipment required for their execution. In order for the services to be offered at a high level, the qualifications of

### INTRODUCTION

Motor transport facilities, such as filling stations, repair shops or diagnostic centres are important for proper and safe operation of the motor vehicles used by individuals and transport companies which carry out various kinds of tasks related to relocation of people or cargos [1, 5]. For the provision of services in the technical facilities to the highest standards, the equipment, the qualified staff and various kinds of systems to facilitate the work are of considerable importance.

The activities influencing the improvement of the operation of motor transport facilities include the use of appropriate logistic systems. They facilitate the organization of planning, control and inspection tasks. They enable proper management of supply, production, distribution and marketing, which also contributes to the improvement of the offered services. The currently used logistic systems are integrated with computer programs that enhance effectiveness of companies and help them develop and make profits.

**Table 1.** Criteria of identity for logistic systems

No.	Criteria	Systems
1.	Structural and organizational criterion	<ul style="list-style-type: none"> <li>– Planning system for gathering and organizing information necessary to launch a company.</li> <li>– Organization system to execute the activities planned in advance and to organize all means essential for the company to operate.</li> <li>– Steering system to control the mechanisms behind the company’s operation.</li> <li>– Control system responsible for controlling anything that makes the subject of the company.</li> </ul>
2.	Functional criterion	<ul style="list-style-type: none"> <li>– Supply system to protect, store and supply the means needed by a company to make a product, i.e. machinery, equipment, materials, raw materials, components etc.</li> <li>– Production system to make and manage the means supplied by the supply system.</li> <li>– Distribution system to go between the production and the output market and to supply the product straight from the production line or warehouses to the customer, in the agreed quantity and within the specified time limit.</li> <li>– Marketing system to promote the product and improve the production-customer relationship in order for the company to gain as high income as possible.</li> <li>– Recycling system to recycle and utilize wastes, by which it can contribute to reduction of the environmental pollution.</li> </ul>

those employed in the particular technical facilities are also of vital significance [3, 20]. Internal and external controls are of considerable importance, too. They allow for detection and elimination of any irregularities. In addition, the controls support the planning and help coordinate the decision-making process.

Among the important systems in motor transport facilities there is also one that is related to the procurement as it ensures continuity of work. Appropriate reserves of raw materials or spare parts in the warehouses protect companies against costly stoppages. Each stoppage means that a service may be not completed in the specified time limit and, as a consequence, the dissatisfied customer and some profit are lost. The customer’s satisfaction is the proof of quality of the offered services. The main demands and expectations of customers include easy access to all information, prompt completion of services, reliability and completion of orders in the manner expected by the customer. The equipment, instrumentation, meeting the requirements related to occupational health and safety as well as comfort and the aesthetic qualities of the service space also have an effect on the positive quality assessment of the offered services. The factors affecting quality of the offered services are named in Fig. 1.

Among major logistic systems, the distribution and the marketing ones are those that play an important role. The distribution system acts as a ‘go-between’ between the production and the output market. It deals not only with supplying a product or a service in the agreed quantity straight to the customer and within the specified time limit but it also completes all related formalities. The marketing system deals, in turn, with promotion of the product or service and with the improvement of the relationships with potential customers in order for the company make as high income as possible. The recycling system is another one that is important from the environmental point of view. This system is responsible for the recycling and utilization of wastes [17].

The following factors are to be taken into account in order to create a logistic system to manage a given motor transport facility [2, 14, 19]:

- Material factors: Adjustment of the service type to the rooms, means and conditions for relocation.
- Personal factors: Qualifications and organizational skills of the staff.
- Information factors: Storage, processing and data handling methods as well as the software level.
- Financial factors: Availability of all financial means.



**Fig. 1.** Factors underpinning the service quality in motor transport facilities

The proper operation of motor transport facilities is determined, apart from the logistic systems, by other factors which are presented in Fig. 2. Their efficiency may be enhanced by, inter alia, automation, mechanization and modernization, as well as by integration of the partial systems, suppliers, logistic units and customers.

**PLANNING AND WORK ORGANIZATION SYSTEM IN CAR DEALERSHIPS**

The planning of work in car dealerships is one of the basic factors that have a direct impact on the company's development. The plans may be involve both short and long execution times. Most often, they are fixed by the company's management board and concern the company's overall activity [10]. Long-term plans may involve a wider range of services on offer, an increase in the company's productivity or its wider influence on the market. These plans may not be executed without prior implementation of short-term plans. In order to accomplish each planned activity, the company should analyse the data and make use of the staff's engagement, their competences, skills and qualifications. Implementation of an appropriate employee motivation system is very helpful here. This may involve urging the employees to carry out specific tasks and taking into account, at the same time, their ambition needs, i.e. the needs for fulfilment or success etc.,

Car showrooms offer a wide range of services. Apart from their basic function which is the sale of new and used vehicles, they also repair, rent out or insure vehicles. The proper execution of the particular tasks is the responsibility of the highly qualified staff in different departments. In order for the particular departments making up the organizational structure of the dealership to be improved and their efficiency enhanced, appropriate systems and computer programs to streamline all activities must be introduced (Fig. 3) [6,11]. Such programs are usually based on simple solutions consisting in that that important information is put in an integrated customer data base that can be accessed by the managers of the sales departments for new and used cars, repair and marketing. Additionally, these programs make it possible to establish work schedules, account for the working time and to keep a task accomplishment register. In the case of a repair shop, appropriate programs give the opportunity to quickly and more precisely estimate the repair time and costs and to plan the work for the individual stands for all vehicle brands handled by the shop in a more efficient way.

In a car showroom selected for the analysis, the sales staff have workstations equipped with computers with access to the Internet and the Global Connect and eCARS21 programs (Table 2).

They also have commercial offers and all the documents necessary to order a car. In order for the sales assistants to be able to offer the highest service quality, they are trained

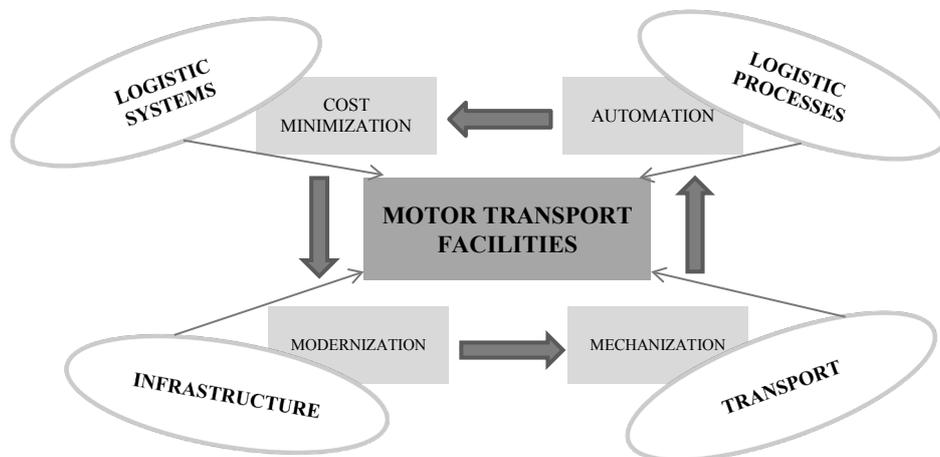


Fig. 2. Factors underpinning the effectiveness of motor transport facilities



Fig. 3. Function of the planning and organization system in car showrooms

**Table 2.** Characteristics of the Global Connect and eCARS21 programs

Global Connect	eCARS21
<ul style="list-style-type: none"> <li>– Introduced in 2010.</li> <li>– Originally, this was a program using the English language only but after some time, the Polish version was added.</li> <li>– Uses Internet connection which enables searching information in a continuous and quick manner.</li> <li>– Enables continuing upgrade including the changes made by the company which prevents entry of invalid data during making an order.</li> <li>– Has a tool platform divided into orders, sales, repairs, spare parts and business service.</li> </ul>	<ul style="list-style-type: none"> <li>– Ensures easy service and independence as well as uniform communication with the manufacturers' systems, including Global Connect.</li> <li>– Is intended for use by any dealership, irrespective of its size.</li> <li>– As an application that supports work with many warehouses and many branches, the system is based on a technology that helps minimize the costs of operations between the branches.</li> <li>– Has a range of modules, one of which being a module to support the sale of cars.</li> </ul>

in customer service, i.e. they acquire skills in the following areas:

- establishing contact and building up appropriate relationships with the customer,
- discerning the needs and the current situation of the customer,
- presentation of the company and its commercial offer,
- methods to manage the customer's problems,
- effective methods to conclude sale transactions.

#### SUPPLY AND DISTRIBUTION SYSTEM IN CAR DEALERSHIPS

An important task of the supply and distribution system in the car showrooms is supply chain management – delivering vehicles from producers to clients in the required time limit, whilst ensuring transport security guarantees. Safe movement of vehicles is an extremely important element of distribution, so all showrooms should cooperate with reliable transport forms that perform their services at a high level and in a timely manner, have appropriately suitable transport available and a highly-qualified work team. A well-organized supply and distribution system should also be distinguished by maximizing services while at the same time minimizing costs [12,16].

Car dealerships can use a variety of computer programs to improve their supply and distribution systems. They facilitate demand forecasting and quality and supply management; distribution planning; warehouse inventory management; efficient data exchange with suppliers, customers and other systems; radio frequency identification technology services; and control of serial numbers, creating and service of contracts and repair orders, as well as cost-benefit analyses.

The supply and distribution in the analysed car dealership was streamlined by the Global Connect and eCARS21 systems. Global Connect has a procurement function that is divided into tabs related to cars, car composition and the prices for specific models. Support for the procurement function is done only by the sales manager. Each dealer that uses Global Connect is tasked with ordering approximately 20 cars from the factories each month. The cars are manufactured in the factories and then are moved to warehouses, where they await transport to the dealer. These cars can stay in the warehouse without a fee for up to 30 days in cases where a dealer has filed an order in the amount defined in

the assignment. If the dealer has not fulfilled the monthly order requirements, then interest will be charged for the storage of the vehicles. The eCARS21 program includes, among other things, a sales module that streamlines tasks, i.e. appraisals, discount policies, orders, taking inventory and commissions. This module supports the sales of new and used cars, including internal margins, accounting for old cars and descriptions of cars available in the warehouse. The module's interface is straightforward and intuitive, leading to improved performance of the sales department. The model has built-in tools for sales management. These tools work in an on-line mode, which helps with rapid sales and customer information management, inventory control as well as in the preparation of cost estimates. Additionally, the tools manage catalogues of new and used cars, as well as orders for new cars.

Distribution in the described car dealership is done in two ways. One is the execution of a "tailored" order, that is, to meet the client's specific needs, while the second is related to the ordering of vehicles by the dealer to the dealership. In case of ordering cars to meet the clients' needs, production of the car is faster than those ordered for the warehouse. When ordering, the dealer has the opportunity to define the week of production, i.e. designate a date when the car will be manufactured. Another option is for the dealer to order cars with different specifications without customer input for the warehouse. These cars are ready for sale on the spot, but there is no option for individual customization. This involves risk, as some of the options chosen by the dealer may not appeal to customers. Thus, this car could remain at the dealership and, after a certain time, accrue losses.

#### MARKETING SYSTEM IN CAR DEALERSHIPS

In car dealerships, a significant role is played by the marketing department, which deals with the exchange of information between the company and customers, contractors, suppliers and the market in order to obtain financial advantages. The staff of the marketing department systematically collects and analyses information related to the current needs of clients, such as checking which car models have the highest demand, which can be afforded by the average consumer, what accessories are the best options, what the relationships are between the class of the car and its price, and what is offered by competitors. This and other information is necessary in developing the company's

operational strategy with the aim of attracting the most customers and eventually achieving the greatest profits with the lowest possible costs. The marketing department is also responsible for supporting the decision-making process in the showroom (Fig. 2.4).

So that an excess of information and leading many advertising campaigns does not limit the reaction time of the marketing team to significant changes on the market, they can make use of the following programs [4, 8, 18]:

- Analysis and reporting the results of all marketing activities.
- Control the management of funds meant for advertising.
- Dividing customers into different groups and automated marketing.
- Comparing actual and projected revenues.
- Price management and discounts for goods and services.
- Simulations associated with the creation of tenders and contracts.

In the assessed car showroom, one way of attracting customers is a number of promotional actions. One of these actions is a large New Year’s sale, which has an offer consisting of discounts for cars produced in the past year. The company also offers discounts for “professional groups”, including pharmacists, auditors, journalists and academics.

**CONTROL SYSTEM IN CAR DEALERSHIPS**

In dealerships, the control system plays an important role because it is responsible for proper execution of all assigned tasks by all departments active in the company. Controls, both internal and external, have the objective to detect any irregularities and deviations from the established rules and plans. In order for the control system to be effective, it must be properly prepared and adapted to the conditions prevailing in a particular company. Choosing a control system depends on the company’s size – the number of employees, branches, the scope and area of its operations (i.e. geographical factors), as well as on the types of cars, spare parts and any related services being offered.

Checks in dealerships can be on the department for sales of new and used cars, services performed in the repair shop

and marketing actions aimed at encouraging customers to take advantage of the company’s offers and in pursuit of operational benefits. Inspections may also be related to monitoring the implementation level of an established concept by the firm as well as controlling all processes taking place in real time and the results achieved after a certain period of activity. The control system usually contributes to increasing employee productivity in the dealerships, improving the quality of the services offered and also achieving the results intended by the firm [9].

A very important factor that should be monitored by the employer is working time. The point here mainly is about the time employees spend at work and on activities connected to it, as well as on what their unproductive habits are. Programs allowing employers to increase employees’ self-discipline and eliminate undesirable behaviours are increasingly used in car dealerships. The programs automatically collect data on the activities performed by employees, registering only specific events and the duration of use of individual programs without interfering in the privacy of the employees. Cameras monitoring all areas of the company have also had an important impact on safety in car dealerships. They ensure the protection of dealership property, in the repair shop and the warehouses, from theft and all forms of vandalism as well as making an impact on improving employees’ performance.

An important aspect in the functioning of the firm that also is subject to checks is the protection of the natural environment. Increasingly, car dealerships create conditions conducive to building awareness for protecting the environment, the rational use of energy and natural resources, and respecting environmental requirements. They promote ‘ecological car driving’ – turning the engine off when shut-downs last more than one minute, earlier changes to high gears, ensuring a smooth ride without unnecessary acceleration and breaking, avoiding opening windows to decrease resistance movement and using air conditioning only when necessary. All of these activities are beneficial for drivers, as they help minimize fuel consumption, which contributes to minimizing significant savings in vehicle operations as well as decreases CO<sub>2</sub> emissions – all of which contribute to protecting the environment [17].

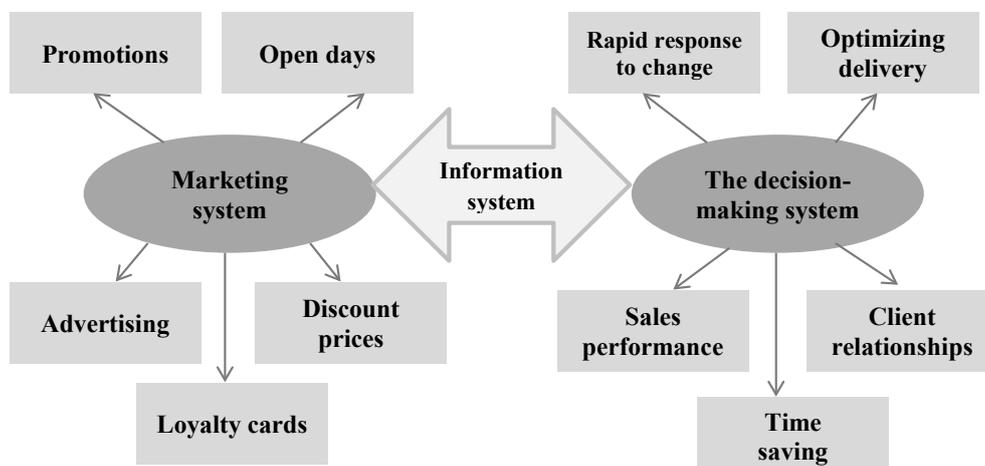


Fig. 4. Diagram of the relationship between the operation of the marketing and decision-making systems

## CONCLUSIONS

Like in any development-oriented company, the use of logistic systems in car showrooms is extremely important, because it contributes to the improvement of the efficiency of their operation. The improvement of the executed tasks through implementation of relevant programs helps save time which can be used in other areas of the company's activity, for example to raise the service standards, thus acquiring customers.

Among the many systems that have a positive impact on the function of showrooms, those related to organization of work and to control of all the company's objectives deserve special attention. Good organization of work, with relevant equipment and programs used for this purpose, has an impact on the improvement of all the activities of the staff, and in particular, on the completion of all orders in the proper and timely manner, which is particularly essential for the customers making use of services of the specific showroom. Customers satisfied with the offered services will come back and encourage the others to come, which will allow the company to gain financial advantages it needs for further operation.

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ANALIZA ZASTOSOWANIA SYSTEMÓW  
LOGISTYCZNYCH W PRZEDSIĘBIORSTWACH  
TRANSPORTOWYCH SA NA PRZYKŁADZIE SALONU  
SAMOCHODOWEGO

**Streszczenie.** Przedstawiono rolę systemu logistycznego w efektywnym zarządzaniu przedsiębiorstwem transportowym. Opisane są systemy, które pozytywnie wpływają na organizację pracy w takich przedsiębiorstwach na przykładzie wybranego salonu samochodowego oraz ulepszenia w zakresie dostawy i dystrybucji produktów (np. nowych i używanych samochodów oraz części zapasowych niezbędnych w celu dokonywania napraw). Artykuł przedstawia też wpływ marketingu i czynności kontrolnych na poprawę jakości oferowanych usług oraz pozyskiwanie nowych klientów.

**słowa kluczowe:** system logistyczny, przedsiębiorstwa transportowe, salony samochodowe, handel samochodami.