

## Car fleet management problems in enterprises

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**Summary.** The paper presents impact of effective car fleet management on the development of the company. It lists and describes the major problems resulting from the maintenance of vehicles, such as cost of fuel and insurance, expenses related to servicing of vehicles, conducting their periodic inspections and repairs, etc. It also considers the options to acquire savings that can be used for investments that could contribute to the development of the company.

**Key words:** vehicle fleet management, transport companies, exploitation supervision systems

### INTRODUCTION

Dynamic growth of automotive branch enables greater access to means of transport. Most companies have, smaller or larger, vehicle fleet meant to carry out various tasks. In the vehicle fleet, depending on a company, there are cars that enable carrying out transport services related to passenger and cargo transport, personal cars exploited by the management, as well as special, public, fire fighting, military or medical vehicles meant to carry out specific tasks. Cost related to the fleet management, fuel purchase, insurance and service is considerable and significantly influences the company's financial condition [7]. Additionally, in the case of transport companies – the number of which is still increasing and this adds to greater competition on the services market – the clients' expectations pertaining to transport quality and related fees are increasing, too.

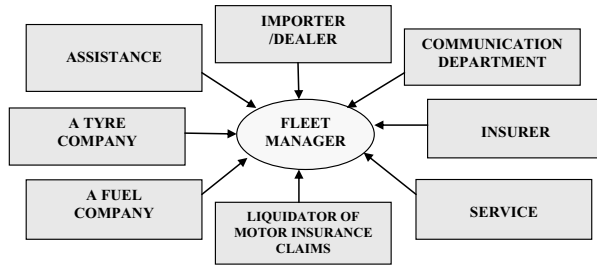
In order to decrease the vehicle fleet management-related costs, its proper management is vital [3,6]. Saved financial means resulting from effective vehicle fleet management in a transport company make it possible to lower rates for clients. An attractive price offer for passenger or cargo transport is not only an opportunity for getting regular orders, but also a chance for attracting new clients and developing the transport enterprise. Decreasing the

costs resulting from the fleet maintenance in every company means extra financial resources for carrying out various investments having an impact on improved functioning of the company.

### OUTSOURCING IN VEHICLE FLEET MANAGEMENT

Vehicle fleet management means proper planning and work organization for means of transport owned by the company. In order to guarantee operational readiness of the fleet its technical condition needs to be controlled during diagnostic tests, it must be serviced at regular intervals, insured, provided with fuel and other materials [1]. Vehicle fleet management means also dealing with all administrative issues related to its maintenance, sale and purchase of cars, coordinating and supervising cooperation with service stations, etc. Duties of the person dealing with the vehicles include negotiating conditions with fleet service providers and insurance companies (Fig.1) [13,17].

Proper vehicle fleet management is a key factor influencing its development and gaining a market position by the company. A crucial element facilitating vehicle fleet management is using telematic technologies [14]. Implementing such solutions and their correct use in transport companies adds to extending the scope of services, lowering the costs and improving the quality of carried out transport tasks. Taking advantage of new technologies and providing the drivers with suitable training packages meant to improve their skills leads to significant savings pertaining to more economic driving style [4,8,12]. Savings resulting from lower fuel consumption and smaller accidents rate add to generating greater profits in the company and creating its own reliable name. Good opinions about a transport company, i.e. reliability, clients' satisfaction, timely execution of tasks are all features of effective vehicle fleet management.



**Fig.1. Entities** with whom a fleet manager cooperates and deals [21]

More and more companies are aware of the role of proper fleet management. Most companies invest in their own fleet and suitable vehicles management systems. This gives the company’s management an opportunity of having complex control over the fleet they operate. Some companies give up their own fleet and decide to make use of external operators specializing in a given field. Delegating some duties to an external company (outsourcing) enables better coordination over the remaining tasks.

In many companies vehicle fleet management is worth outsourcing to specialists who can relieve the staff employed by the company owning a vehicle fleet of their workload. They can add to limiting the costs related to vehicles maintenance. In Poland, similarly as in many European countries, functions of fleets managing companies have been taken over by vehicles leasing enterprises [5,20]. Outsourcing a vehicle fleet management has become more and more common practice, both in large corporations and small companies owning just several vehicles. They receive, as a package:

- inspections and repairs in authorised service stations,
- complex scope of insurance services OC, AC, NW and supervision over the liquidation process of motor insurance claims,
- 24-hours Assistance, as well as an opportunity to get an interim vehicle,
- special fuel cards, owing to which fuel costs at petrol stations can be settled in a non-cash way,
- a system monitoring of the vehicle fleet GPS.

Tasks of a fleet managing company include the duty to replace the cars into new ones and disposal of the exploited ones. The client is only to pay a monthly fee related to potential vehicles rental and control over the costs. The fleet managing company also prepares a complex scope of analyses and managerial reports pertaining to exploitation of the client’s vehicle fleet. These types of analyses and reports are necessary for costs control and reduction. An appendix to such report can be a list of all transactions realized by particular users, specifying dates, places, fuel type and quantity, and even the vehicle filling up times.

A company deciding to outsource its vehicle fleet management can select one of several options described in Table 1 [21]. There are also solutions meaning partial transfer of duties related to vehicles maintenance to an external partner. This pertains to revolving lease, a service package, insurance lease, as well as lease with a service package. Regardless of the option selected by the company owning

a vehicle fleet, taking advantage of outsourcing services has many advantages. It is a perfect solution for enterprises treating their vehicles as business means which, after some period of operation, depreciate and should be replaced into new ones. Also, they do not experience problems related to current exploitation of vehicles.

**Table 1.** Outsourcing options in vehicle fleet management

Variant	Scope of duties
1. Full service leasing	– pertains to taking over all duties related to vehicles service maintenance.
2. Car fleet management	– means current vehicle fleet management, – the entity placing the order remains the vehicle owner, – the outsourcing company is only responsible for current fleet management, – within the scope of the order we provide service, liquidation of claims and other elements that can be offered by an outsourcing company, – the clients purchase vehicles themselves and insure them.
3. Lease-back	– it means re-sale of the fleet owed by the company to the managing company and then leaseback of the same vehicles, – the offer is addressed mainly to companies owing relatively new vehicle fleet, – taking advantage of this option can improve the flow of documents in the company and simplify settlements.

Selecting a suitable vehicle fleet managing company is crucial. Only an experienced and professional company can add to effective vehicles management, decreasing the costs and generating profits [10, 15]. Thus saving up extra financial means and their proper use can add to each company’s development.

**COSTS OF VEHICLES FLEET MANAGEMENT**

The most important problems related to vehicles maintenance in a company include expenses concerning fuel purchase and their depreciation costs. The costs constitute approx. 57% of general expenses related to owning a vehicle fleet. High depreciation rate has a direct impact on decreasing the vehicles’ book value and higher re-sale value. Compulsory insurances constitute 13% of the fleet maintenance costs. Other elements constituting the fleet-related expenses are: 12% – credit costs, 12% – inspections and tyres replacement, 6% – taxes and administrative costs (Fig.2).

In order to reduce high costs resulting from vehicle fleet maintenance, that significantly influence the company’s condition, one should implement various types of economy programs, effective control of all activities and optimization of expenses [2,16,18]. Owing to such activities, monthly expenses can be reduced by as much as 5-10%. Even a more effective way to save up to 10 – 20% is outsourcing the vehicle fleet management to an external company, as mentioned previously. Expenses borne by the company owning

the means of transport, the so-called TCO and ways of their reduction are presented in Tables 2 and 3. All costs related to the owned vehicles and hired drivers should be segregated separately, to know it precisely what specifically the money is spent on and on what one can save. Such accounting restricts undue expenses and individualizes the costs per a specific vehicles/driver.

An important problem in effective fleet management is proper attribution of means of transport to execute a specific task and, resulting from that, determining the required number of drivers. In solving the problem one can take

advantage of most recent IT and telematic technologies, such as [11,14]:

- OBD systems diagnosing and informing about vehicles damages,
- satellite navigation systems,
- geographic information systems,
- wireless communication systems.

Applying IT technologies enables continuous vehicles localization online, sending text messages, data collection and administration, time evidence, as well as keeping a route record.

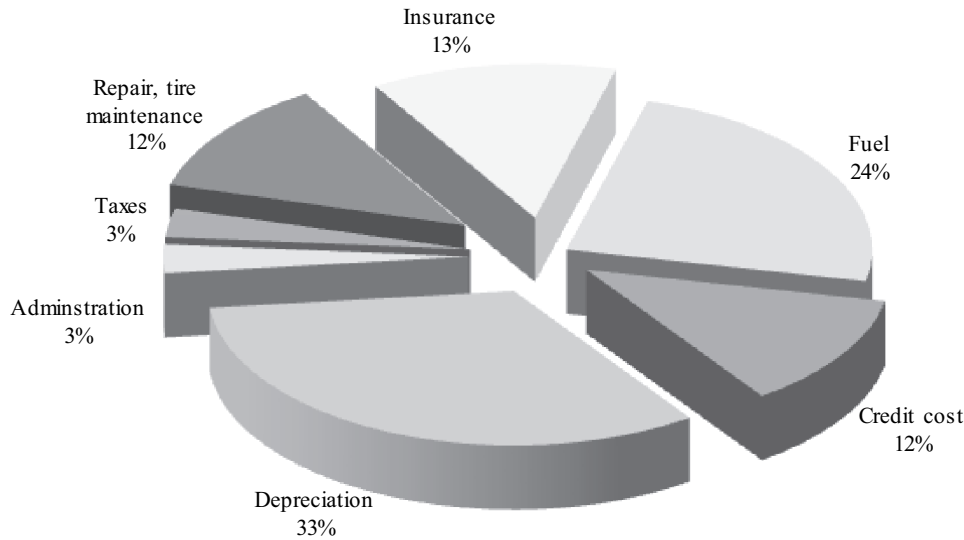


Fig. 2. Cost constituents of maintaining a 50-100 vehicles fleet [21]

Table 2. Ways of reducing costs related to vehicles' purchase and their servicing

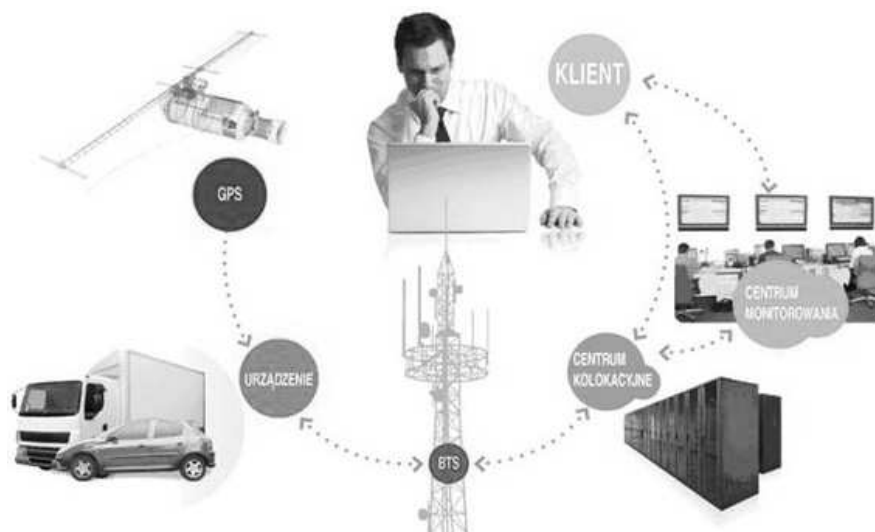
Cost	Costs reduction ways	Benefits
Purchase of vehicles	controlling expenses related to the sales offer	paying attention, during vehicles purchase, to: <ul style="list-style-type: none"> <li>- newest technologies increasing the driver's comfort and safety,</li> <li>- savings related to their exploitation (cars' manufacturers present the total vehicle maintenance cost for some period; the lower CO<sub>2</sub> emission, the less fuel a specific vehicles will consume, and this is related to lower tax rates),</li> <li>- same brand of vehicles – this results in savings related to vehicles' servicing by one service station and thus a possibility of discounts, faster repairs, inspections, tyres replacement, etc.,</li> </ul>
Service	analysis of offers from service stations	selection of the best technical and financial offer, punctuality and reliability of periodic inspections, pursuant to manufacturers' recommendations and guarantee conditions, because: <ul style="list-style-type: none"> <li>- an oversight related to this can result in a lost guarantee and generate extra costs (purchase of new spare parts),</li> <li>- an eventual failure may immobilize the vehicle for a longer period and thus reduce its operational ability and value, when intended for sale,</li> </ul>
	own repair service	facilitates functioning of a company owing a vehicle fleet and adds to significant savings, because: <ul style="list-style-type: none"> <li>- it guarantees high quality of performed services,</li> <li>- low inspection and repair costs,</li> <li>- fast and punctual inspections and repairs – this guarantees the vehicle can be timely returned for operation.</li> </ul>

**Table 3.** Ways of reducing costs related to fuel purchase and insurance of a vehicle fleet

Cost	Costs reduction ways	Benefits
Fuel purchase costs	fuel cards	non-cash transactions, owing to which the drives does not have to carry legal tenders (cash, debit card),
		discounts for fuel purchase,
		deferred payments terms,
		unlimited access to on-line systems enabling: – inspection of fuel expenses over a specific period, – having permanent control over transactions realized by means of a fuel card,
		control over drivers working time, since their location and fuel purchase time is known,
Fuel purchase costs	change of drivers' habits: – eco driving and defensive driving training sessions, – intelligent systems recording the driving style	improvement of the driving style, increasing safety,
		faster prediction of situations occurring on the road and thus better possibility of avoiding sudden braking and acceleration (also, accidents),
		decreasing fuel consumption (up to 15-20% a year) and fumes emission to the environment,
		lower fuel consumption,
Fuel purchase costs	selection of the optimum rout and its monitoring	control over the driver,
		this way one can currently control fuel consumption related to business strips during business hours,
Vehicle insurances	analysis of offers from insurance companies	selection of the best offer,
		insuring the entire fleet in one insurance company, since this enables: – negotiation of the proposed insurance policy terms and conditions, – getting better conditions (more vehicles – better offer),
	giving up voluntary insurance (eg with AC)	selection of an offer with extra options, i.e.: – third-party liability of motor vehicle owners which, in a package, includes also extra voluntary insurance, – an interim vehicle,
increased awareness of the driver, because he will bear financial consequences related to the vehicle or its equipment damage himself.		

On the Polish market modern technologies supporting vehicle fleet management have only been used in approx. 20%. Most Polish companies have purchased such systems mainly to control the drivers and check their location. Meanwhile, the telematic systems offered by manufacturers

are used mainly for effective and dynamic management and improved functioning of the entire company. Finder Online (fig.3) and AutoControl are examples of such systems. Characteristic features of the systems are presented in Table 4 [21].

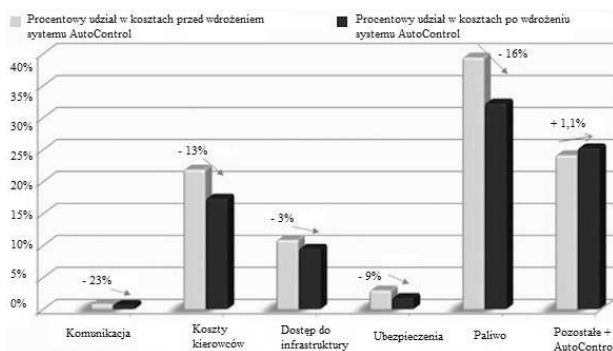


**Fig. 3.** Diagram of the system Finder On-Line [21]

**Table 4.** Characteristic features Finder Online i AutoControl

Finder Online	AutoControl
<ul style="list-style-type: none"> <li>– this is a complex solution addressed to large, medium and small companies who want to increase work effectiveness of their companies,</li> <li>– all data are recorded on a server by means of transmission,</li> <li>– devices installed in vehicles send information to a GSM operator and then the coded data is sent to the server,</li> <li>– when GPRS data transmission is not available, the devices record collected information owing to built-in flash memory,</li> <li>– Finder Pro devices are equipped with a 32-bit processor and an internal battery enabling 48 hours uninterrupted operation without external power supply,</li> <li>– the system is characterised with low current consumption and an aluminium enclosure that guarantees high resistance and aesthetic values.</li> </ul>	<ul style="list-style-type: none"> <li>– data transfer takes place similarly as in Finder system, i.e. by means of GSM network and GPS technology,</li> <li>– the system's operational range includes all European countries,</li> <li>– access to the system is possible through an Internet browser, by means of installing the software on the user's PC, as well as by means of a mobile version available for a mobile phone,</li> <li>– the application is available in 2.0 version and it enables: monitoring the means of transport and fuel consumption, planning the routes, analysis of the travelled route, sending messages and orders, data import from the driver's card and a digital tachograph, supervision of service activities, insurance deadlines, generating reports, creating and mapping own spots and zones, searching for addresses, distance measurement, mobile system management and integration with other systems.</li> </ul>

Tests carried out by AutoGuard company show savings caused by implementing IT technologies in a company. Results of the tests are presented in Figure 4.

**Fig. 4.** Percentage costs reduction after the system AutoControl implementation [21]

## CONCLUSIONS

Issues related to effective vehicle fleet management require complex and thorough analysis of transport tasks and making rational decisions within that scope. In order to facilitate management of the means of transport one should implement innovative technologies and telematic systems, because they guarantee quality and are a showcase of a modern enterprise. They cause that a company taking advantage of such systems is becoming more competitive on the market [9,19]. Modern technologies and telematic systems make it possible to reduce excessive costs related to vehicles' maintenance and this significantly adds to the company's development, because the saved financial means can be spend on making many investments.

The most recent proposals of companies producing fleet management systems are meant to save many problems that enterprises face. They offer an opportunity of vehicles monitoring, determining optimum routes, constant contact between the employer and the driver, electronic collection of fees resulting from using the road infrastructure. Positioning of facilities on the map, with 1 m accuracy, and using

open frequency, will be possible due to the implementing in Poland of a modern and detailed system – Galileo. To collect fees from truck drivers using paid sections of motorways and express roads, the viaTOLL system is used. It also enables weighing the vehicle when in motion and this enables fast and efficient control of its load and thus avoiding penalties resulting from the vehicle's overloading. An important solution for those managing the vehicle fleets is the system implemented by Elte GPS company, which enables authorization and identification of drivers and thus protects the vehicle and the cargo against theft and use by unauthorised parties.

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  - [www.autoguard.pl](http://www.autoguard.pl).

PROBLEMY ZARZĄDZANIA FLOTĄ  
SAMOCHODOWĄ W PRZEDSIĘBIORSTWACH

**Streszczenie.** W artykule przedstawiono wpływ efektywnego zarządzania flotą samochodową na rozwój przedsiębiorstwa. Wymieniono i opisano najważniejsze problemy wynikające z utrzymania pojazdów, tj. koszty zakupu paliwa oraz ubezpieczeń komunikacyjnych, wydatki związane z serwisowaniem pojazdów, z przeprowadzaniem ich okresowych przeglądów i napraw itp. Wskazano także na rozwiązania zmierzające do pozyskiwania oszczędności, które mogą być przeznaczone na realizację inwestycji przyczyniających się do rozwoju przedsiębiorstwa.

**Słowa kluczowe:** zarządzanie flotą samochodową, przedsiębiorstwa transportowe, systemy nadzoru eksploatacyjnego