

## AUTOMATED SYSTEM TO SUPPORT THE PROCESS OF SERVICING MAINTENANCE STATIONS

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### Abstracts

The paper shows the current state of development of the computerization process of service stations of technical service in automobile service. The general characteristic of the development of computer-service auto-service in Ukraine and the peculiarities of distribution services to other service sphere activities are provided. The structure and functional properties of various organizational units of technical service stations in automotive service are shown. It is shown the expediency of using automated systems in the field of auto service. The purpose, object, and subject of research for the maintenance service station's process are defined. The tasks of developing an automated system for supporting the service of service stations of automotive service are described.

**Keywords:** An automated system, the current state of development of computer development stations for auto service, auto-service computing, software development.

### Анотація

В роботі показано сучасний стан розвитку комп'ютеризації процесу обслуговування станцій технічного обслуговування автомобільного сервісу. Надана загальна характеристика розвитку комп'ютеризації автосервісного господарства на території України та особливості розповсюдження сервісів на іншу діяльність сфери обслуговування. Показана структура та функціональні властивості різних організаційних підрозділів станцій технічного обслуговування автомобільного сервісу. Показано доцільність використання автоматизованих систем у сфері комп'ютеризації автосервісу. Визначені мета, об'єкт та предмет дослідження процесу обслуговування станцій технічного обслуговування. Описані задачі розробки автоматизованої системи підтримки процесу обслуговування станцій технічного обслуговування автомобільного сервісу.

**Ключові слова:** програмна розробка, автоматизована система, автоматизація процесів поставки товарів, управління складськими приміщеннями.

Modern business is extremely dynamic. However, the organization of operational accounting, planning, control, and management varies according to the needs of the business. Therefore, to date, the computerization of maintenance stations is considered a fundamental process.

Start activities without computerization in any service area are a losing solution. Therefore, many enterprises develop their software complexes and have a good system to automate everyday operations. However, the demands of modern information management do not have the fact that the developers of automated systems at Ukrainian car service centers are most often only programmers. At the same time, customers can not properly put tasks for developing similar systems as they do not have the necessary knowledge.

The development of automated systems for car centers in Ukraine has the following trends. On the one hand, the labor market has long been ready-made integrated automated systems. They are developed based on analyzing many consumers' experiences and taking into account the requirements of modern information management. Such ready-made integrated systems are better than homemade ones. They have sufficient long-term work practices in consumers. They are also executed with specialists' participation in many specialties in financial, industrial, and trading management, logistics, engineering.

On the other hand, customers cannot only put the task but sometimes can not estimate the benefits of the modern information system. Therefore, they often do not support the use of many functions and parameters of automated systems. A rich experience with specialists in modern management methods have units. Wanting to learn a new one is not so much in each enterprise.

Therefore, a computer-automated system should become an assistant and tool to perform the necessary technology of business processes in the auto service sphere. The effect on modern business vehicles from computerization can fundamentally influence the entire company's performance, only if it is entrusted to professionals reengineering business processes, pre-making serious reforms in the organization

of production operations. But even the best software complexes will not give complete returns if they are not subject to professionals who are well understood in the customer's business management.

Costs for computerization car centers are completely payable. The enterprise's managers seem to be the cost of computerization - it's money that will give to the development of the program and services for its installation. This is due to too many expectations in saving money and underestimating the cost of implementation and maintenance of information systems.

But in the introduction of modern automated systems, success is achieved not by reducing costs but by a sharp increase in the efficiency of work in integrated workplaces. Due to this, a spectrum of executable operations or services is significantly expanding while improving customer service quality and efficiency car centers.

The introduction of new software involves the transition to more progressive job technologies. Costs do not grow as they grew due to a constant increase in states. Therefore, in modern car centers, there is a need for various services. This leads to the development of various functions of auto-service computers.

The maintenance service station is a complex of organizational and technical measures and productions that provide realization, utility, performance, and storage of motor vehicles by their owners' requirements. The car service covers the largest period of motor vehicles' life cycle from the moment of its exit from the factory - the manufacturer to their final utilization.

Under the auto service, understand support (i.e., maintenance) and recovery (repair) of the performance of motor vehicles of main cars at maintenance stations. However, the provision of services at maintenance stations to consumers related to motor vehicles' operation is much wider.

So, by the early '90s, the car service in Ukraine had a fairly small number of maintenance stations and automobile owners' repair. Most drivers were still serving and repairing their cars in their own garages and repair zones of collective parking. At the same time, the costs of drivers to maintain and especially for repairs at that time were quite significant. But the owners of cars are practically not evaluated, and the quality of repair is most often evaluated when the inspection passes once a year without instrumental control of the technical condition.

State-owned enterprises about the technical inspection of the cars over 5 years of age require compulsory instrumental control in diagnostic centers or at the maintenance stations of cars having a corresponding license. Detected in this, disadvantages are usually eliminated in the same or closest maintenance station.

So, at present, the automobile park in Ukraine is quite developed, which determines the growth of the car service's role in the life cycle of operation of cars and promotes the further development of state and private enterprises of the car service.

Also, the growth of the car service's role in recent years is due to economic considerations. Much of the cars and their owners are involved in the production process, in which every hour of labor is characterized by or the magnitude of wages or the magnitude of profit.

The owner of the car must be a specialist in its field of activity, which provides him with a certain level of well-being, involuntarily compares the time spent to work with the repair and maintenance of its own car with what income would be at the same time, working on a specialty. Most often, considering the quality of the performed work, the average prospects are inclined to the need to apply to the maintenance station.

Promotes car service's role and such unpleasant to motorists tendency as rising prices for fuel and lubricants. This makes it possible to monitor fuel and lubricants' costs and timely remove disadvantages that lead to increased costs for each car.

Thus, developing an automated system was to increase the efficiency of the service station manager. The research object includes the processes of functioning of automated systems that perform a service dispenser of maintenance. The research subject is methods and software applications that allow you to determine the effective operation of the maintenance station dispatcher.

The practical significance of the developed modules was to develop and test the automated system of service dispensers.

Following the goal, must perform the following tasks:

- to perform an analysis of the subject area of service of maintenance stations;
- perform a comparative analysis of standard software that uses Java programming language;
- execute the design of the automated system for a service dispenser;
- develop an algorithm and software code of the automated system of a high-level java;

- perform testing of the graphic part of the automated system.

#### Literature

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