Software as a strategic tool for the development and improvement of the efficiency of organizations

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Abstract. The modern market is characterized by a high degree of dynamism and volatility, which complicates the tasks of organizations in achieving a competitive advantage. The article explores the use of software to develop and improve the efficiency of organizations. In a rapidly changing market, business process automation is becoming an integral part of the success of organizations, as it is a tool that allows them to thrive in a highly competitive environment. The article discusses the main view and functionality of the application.

1 Introduction

The modern world is embraced by technological innovations, which leads to significant changes in the ways of processing information and managing processes [1]. Due to the growing volume of production and data, it becomes much more difficult to process information. As a result, there is a need for new systems for organizing information processing to ensure the efficient and accurate functioning of processes that require automation [2, 3].

Increasing the productivity of an organization is achieved through automation and systematization of information flows, and new artificial intelligence tools are constantly being introduced as automation solutions for organizations and enterprises in various market segments [4]. Automatic data processing helps to minimize the human factor, which, in turn, is a source of inaccuracies. In addition, the automation of information flows allows the organization to improve interaction with customers and partners [5]. Through the use of artificial intelligence in customer relationship management systems, it is possible to provide personalized and accurately tracked services, which increases customer satisfaction and promotes customer retention [6]. Automation of artificial intelligence allows you to quickly analyze huge amounts of data to make informed and informed decisions, which, in turn,

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allows enterprises to quickly respond to market changes, as well as anticipate and adapt to customer needs [7, 8].

But do not forget about data security, because with the increase in the amount of data stored in digital format, the risk of cyber-attacks and information leaks increases [9]. As a result, ensuring reliable data protection and strict adherence to confidentiality becomes a necessity [10, 11].

Automation and the use of artificial intelligence are an indispensable tool for modern organizations and enterprises that can increase work efficiency and improve the quality of services provided. Companies that consciously and competently implement these technologies will be able to improve their competitiveness and successfully overcome the challenges of the modern market [12-14].

2 Materials and method

Due to the growing scale and globalization taking place today, in the modern world it is extremely difficult to do without the same technologies that keep up with the times.

Any car enthusiast has to deal with the purchase of spare parts for his vehicle, whether it is an ordinary replacement of technical fluids and filters or a full-fledged car repair and maintenance [15]. But not every motorist wants to understand the structure of car units, maintenance rules and characteristics of parts and fluids, most vehicle owners just want to drive without any problems [16]. However, there are no non-breaking cars, parts have their own resource and wear out during operation, liquids lose their properties or simply run out [17, 18].

In this scenario, an application that would collect all the car parts, fluids and filters prescribed according to the technical data sheet, and other consumables, would be as relevant as possible for both experienced motorists and beginners or those who do not want to understand the car device [19, 20]. A simple application with every part of the vehicle would simplify the selection of spare parts for the inhabitants of the automotive world and sweep the process of purchasing spare parts to a minimum [21].

The software is developed for the convenience of selecting spare parts, for partial automation of the work process of the store itself, and also for tracking the status of ordered spare parts [22-25].

To create the system, modern technologies and tools were used to ensure reliability, efficiency, and ease of use [26, 27]. The project was implemented using the Java programming language, providing powerful opportunities for developing highly functional and reliable applications, integrated development environments - IntelliJ IDEA and Eclipse, which provide a wide range of tools for debugging, code completion and project management, database management system - PostgreSQL, distributed version control system - Git, systematization of tasks and project management - Github. The system should be developed as a mobile application. The databases of the software must be implemented in the PostgreSQL relational database management system.

Figure 1 shows a prototype of the project layout, according to which the appearance of the future software will be developed [28, 29].

The architecture of the system is shown in Figure 1.
Each user must have PC skills as a user and know the principles of working with Android applications.

The users of the system are: the store owner, employees and customers. Three subsystems have been created for their interaction:
1. The subsystem of work with personnel (intended for hiring and firing employees).
2. Consultation subsystem (intended for consultation by employees of the customer store).
3. The subsystem for selecting a part and placing an order (intended for selecting a part from the catalog, adding it to the basket, choosing a method of payment and delivery, and for placing an order).

Each user must have PC skills as a user and know the principles of working with Android applications.

3 Results

A prototype of the project layout, according to which the appearance of the future software will be developed, is shown in Figure 2.
When designing a system, the intended implementation of all functions is presented in the use case diagrams in Figures 3-5.

**Fig. 3.** Diagram of use cases "Work with personnel".

The user logs in with the corresponding store owner account. Then he can choose the functionality of adding an employee to the database. To do this, he needs to fill in the data about the employee. At the end, he needs to generate a username and password for the employee.

**Fig. 4.** Diagram of "Consultation" use cases.

The user logs into the system through the corresponding employee account. Then he listens to customers and helps them select and order spare parts.

**Fig. 5.** Use case diagram "Part selection and ordering".
The user logs in with the corresponding customer account. Drives in the VIN number of the car, or looks through the catalog, or by part number, then adds the selected parts to the cart. Selects the payment method and specifies the data for order delivery.

The order of implementation of the priority functions of the system in the form of a flowchart is shown in Figure 6.

![Flowchart](image)

**Fig. 6.** Flowchart "Procedure for the implementation of the system's priority functions".

### 4 Discussion

The implementation of the system concept will allow creating a product that can facilitate and improve the activities of each stakeholder. Each employee will find the use of this system in their activities, thereby simplifying and automating some functions [30].

The daily, weekly and monthly report automatically generated by this system will save a huge amount of time for the director and employees when analyzing productivity. Also, automatic analysis of reporting will allow you to easily identify patterns in the sales of certain types of goods by season.

### 5 Conclusion

The development of a system in accordance with the given terms of reference in the presented document will create a product that can facilitate and improve the activities of each interested person. Each employee will find the use of this system in their activities, thereby increasing their productivity and automating some functions.
The system will allow top management to optimize the work of store employees and reduce the number of offices.

A simple interface will attract a variety of customers.

Thus, we can conclude that the system will not only reduce a huge amount of time to perform all duties, but also increase employee productivity, customer satisfaction and company profits as a whole.

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