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ASSESSMENT OF COMPLEXITY TO DESIGN CLOUD SOFTWARE PRODUCTS

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Abstract:
The article shows the relevance of assessing the complexity of designing cloud software products for informatization enterprises in the production of market software products. A classification of cloud software products is proposed depending on the complexity of their design. The distribution of methods for assessing the complexity of designing cloud software products by design stages is recommended. The features of the approach to assessing the complexity of software product design taking into account the requirements of cloud computing and the tasks of the digital economy are formulated.

Key Words: *cloud service, software, cloud products, designing cloud software products*

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INTRODUCTION:

Development digital economy represents a new stage in the informatization of the national economy of the Russian Federation [1].

The relevance of the formation of the digital economy is evidenced by the Project of the program "Digital Economy of the Russian Federation", in which the main tasks of the development of this direction are formulated [2].

Digital economy software is associated with cloud technology and the development of related software products.

Import substitution in this area is associated with the need to intensify the activities of domestic informatization enterprises in the development of cloud software products for the digital economy.

Entering the market for this kind of software products requires an assessment of the complexity of their development. Evaluation of the complexity of designing cloud software products is the basis for calculating the duration of the production cycle and the cost of their design.

Evaluation of the complexity of designing cloud software products for the digital economy involves the classification and analysis of objects for assessing the complexity, as well as the choice of methods for this assessment, taking into account the specifics of the software products under consideration. These issues are addressed in the proposed article.

DISCUSSIONS:

Classification and functionality of cloud software products for the digital economy.

Cloud platforms of the world leaders in the IT industry provide extensive opportunities for the deployment of various types of cloud software products [3].

Cloud software products for the most part are services focused on solving certain functional problems. The following can be distinguished in large scale: application software (business applications, mobile applications, etc.), cloud data management and storage systems (cloud storage, service model data provision, etc.), business intelligence tools, cloud system software for virtualization, deployment and maintenance integrated solutions.

Recently, the Internet of Things (IoT) technology is gaining popularity. A separate place in the diversity of cloud software products is software for information security.

Distribution of methods for assessing the complexity of designing cloud software products by design stages.

Pricing for a software product project is carried out in accordance with well-known methods: "cost + profit", with a focus on competitors, with a focus on consumers [4].

Methods for assessing the complexity are based on information that is concretized as the design process moves forward in stages. They differ in their approach to estimating the size of a project.

After receiving an application for designing a cloud-based software product, expert and statistical evaluation methods are used to provide an estimated expected estimate of the size of the work. These include the Delphi expert method, expert assessments of the company's developer of a cloud software product based on the statistics they collected, and the function point method [4, 5].

Based on the results of the analysis of business processes and the construction of their model, the method of object points can be used, characterizing the size of the cloud software product by the number of screen forms for entering information, the number of reports and an approximate assessment of the associated database tables.

According to the updated data, the method of object points can be used as the basis for assessing the complexity at the design stage. The assessment of the complexity of the design of IP at the programming stage can be done on the basis of refined algorithms for the solved functional problems obtained at the design stage, taking into account the programming of those tasks that are not among the types previously programmed.

As a result of the programming stage, a program code of a certain length is obtained. The length of this code (Lines of Code, LOC) in thousands of lines of code indicates the complexity of designing a cloud software product and is proportional to it.

Program code is the main result of designing a cloud software product presented to a customer, in addition to design documentation.

The length of the program code is used both to assess the total actual complexity of the design and to evaluate the expected assessment of the complexity of the testing phase and implementation stage.

After the completion of the implementation stage, the informatization enterprise should replenish the database of statistical data on the complexity and its structure by the design stages for cloud software products of this class.

Features of approaches to assessing the complexity of designing cloud software products for the digital economy. Features associated with the need to take into account the following requirements imposed by cloud technology [7],
including:
• scalability and load balancing;
• information security;
• fault tolerance;
• guaranteed delivery of messages between the components of the software product;
• deploying distributed software product components.

The development of the digital economy in the Russian Federation is at the initial stage, there is a lag behind international best practices by several years [2]. Currently, existing statistics characterizing the assessment of the complexity of designing cloud software products are clearly not enough. It is required to improve telemetry in this area.

At the same time, it should be noted that with the intensification of the work of informatization enterprises, taking into account the results of domestic and foreign studies, as well as the accumulated domestic and foreign experience in the development of cloud software products 19 for the digital economy, there are all prerequisites to bridge the existing gap.

CONCLUSION:

The article presents the following scientific results:

1. The relevance of assessing the complexity of designing cloud software products for informatization enterprises in the production of market software products is shown;
2. A classification of cloud software products for the digital economy is proposed, which is necessary to assess the complexity of their design;
3. The distribution of methods for assessing the complexity of designing cloud software products by design stages is recommended;
4. The features of the approach to assessing the complexity of software product design taking into account the requirements of cloud computing and the tasks of the digital economy are formulated.

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