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ECONOMIC MODEL OF SCIENTIFIC-BASED SELECTION OF ERP SYSTEM FOR MANAGEMENT OF ENTERPRISES

The object of the article is to develop theoretical and practical recommendations for a scientifically based selection of Enterprise Resource Planning (ERP) systems and their composition with the use of economic and mathematical modeling for businesses in Ukraine. The study of theoretical and practical problems in the management of the implementation, or the modernization of the ERP, determines the following objectives: to develop an economic and mathematical approach that allows us to find the optimal version of the ERP implementation, considering many criteria that are formulated by all parties involved in the implementation of the ERP; to develop a decision-making algorithm that can be implemented in an application software.

Methodology. The theoretical and methodological basis of the study is fundamental principles of modern economic theory, the scientific work of scientists. During the research, the following methods were used: mathematical modeling (to solve the problem of multicriterial optimization consisting in finding optimal variants of the introduction of automated information systems for the management of industrial enterprises); graphic (for visual presentation of search results); analytical and structural (by optimizing the choice of ERP by analytical hierarchical approach).

Results. The complex approach is proposed to find with the use of modeling, such an ERP that meets and harmonizes the requirements of the company under conditions of uncertainty. A system of methodological guidelines is developed, adapted and suitable for use in practice. The method of multicriteria

comparative estimation for the selection of the best ERP systems is proposed. A two-stage algorithm for optimal determination of the best systems by many criteria and an optimal choice among them using expert estimates and analytical hierarchical analysis is proposed. Based on the research carried out for machine-building enterprises, a comparative analysis of the common EPP systems in Ukraine was made. it is advisable to consider the analysis when formulating the criteria and constraints for choosing an ERP system for an enterprise.

Novelty. The optimal multi-criteria selection method of the ERP system under conditions of uncertainty is developed, which allows the company to select ERP systems according to their own optimality criteria.

Value (originality). The results of the study will allow companies to reduce the costs of implementing ERP systems, the proposed method and algorithm can be implemented in applications for computers and mobile devices to automate the process of choosing an ERP system and its composition. The method of multicriteria comparative estimation for the selection of the best ERP systems is proposed. A two-stage algorithm for optimal determination of the best systems by many criteria and an optimal choice among them using expert estimates and analytical hierarchical analysis is proposed. Based on the research, carried out for machine-building enterprises, a comparative analysis of the common EPP systems in Ukraine was made.