

ІНФОРМАЦІЙНО-КОМУНІКАЦІЙНІ ТЕХНОЛОГІЇ ТА МАТЕМАТИЧНЕ МОДЕЛЮВАННЯ

prise development. **Originality.** It is shown that using the methods of the theory of optimal control and simulation modeling, it is possible to calculate the minimal amount of capital investments to improve the selected economic indicators that determine the efficiency of the enterprise performance, taking into account the random costs of intermediate transitions by the development stages. Such calculation does not depend on the specific content of economic indicators. **Practical value.** The proposed methodology for calculating the minimal volume of capital investments is quite simple, but at the same time it allows, on the one hand, determining the priority areas of the enterprise's investment activities. On the other hand, it increases the manageability and transparency of the enterprise's economic activity, and increases the manager's confidence in the correctness of the decisions made.

Keywords: optimal control; simulation modeling; economic indicators; efficiency; optimal investment volume; optimization; competitiveness; manageability; dynamic programming; optimal trajectory; random costs

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Поступила в редколлегию: 06.03.2019

Принята к печати: 01.07.2019