

UDC 65.011.56:004.942

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## **ASSESSMENT OF THE ECONOMIC FEASIBILITY OF INNOVATIVE IT PRODUCTS WITHIN THE FRAMEWORK OF PROJECT MANAGEMENT AT AN ENTERPRISE**

Modern enterprises operate in a dynamic digital environment where success depends on the ability to quickly create and implement innovative IT products. Such products not only automate activities, but also create new sources of added value, influence market structure, and contribute to increased competitiveness. The development of such products requires significant financial, labor, and time resources, as well as clear management throughout all phases of their life cycle. Effective management decision-making in the IT development sphere is only possible with a thorough assessment of the economic feasibility of the development project, considering the life cycle model, risks, costs, and expected revenues.

In the work of Wang C. and Zhang X. [4], special attention was paid to determining key indicators of the economic feasibility of innovative IT projects. A separate explanation of all the advantages of life cycle models (from waterfall to Agile) with practical examples of their implementation were reflected in the works of Ogwueleka F. [3], Bassil Y. [1], Hendrix T. [2], and Zhang H. [5].

The purpose of the work is to examine approaches to assessing the economic feasibility of innovative IT products in the framework of their life cycle, as well as to analyze optimal project management models that ensure effective management decision-making at the enterprise.

The life cycle of an IT product is defined as a structured sequence of stages from the emergence of a need for the product to the cessation of its use due to moral or technical obsolescence. Scientific literature identifies the following main phases: requirements analysis, design, implementation, testing, deployment, and support. Each stage has its own management tasks, from formulating requirements to ensuring stable operation and product modernization. Proper management of these stages determines the economic feasibility of the project, since costs and potential returns are distributed unevenly throughout the entire life cycle.

The most common models are the following:

1. The Waterfall model is a sequential structure that is effective for projects with clearly defined requirements but is not appropriate for innovative products due to its limited flexibility [1].

2. Incremental model involves the gradual development of a product through a series of versions, allowing for faster results and minimized risks [3].

3. The spiral model combines elements of iterative development with continuous risk analysis, making it optimal for complex and science-intensive projects [2].

4. Agile model is based on flexible development management through short iterations (sprints), which allows the product to be adapted to market changes [5].

Therefore, the IT product life cycle serves as a strategic project management tool that determines cost dynamics, payback speed, and risk levels.

Feasibility assessment is a multifaceted process that combines financial, technical, and market analysis. Its purpose is to determine whether a project is viable and will deliver the expected return on investment. Within the framework of project management, such an assessment involves defining performance criteria, which can be quantitative (economic indicators) and qualitative (organizational, social, technological factors) [4].

Quantitative indicators allow to accurately measure economic benefits, while qualitative indicators assess intangible effects, such as improved management, increased customer satisfaction, or optimized business processes. It is important to consider both groups of indicators, as they reflect the systemic effect of IT project implementation.

In modern project management practice, three main groups of methods are used to evaluate the effectiveness of IT projects [4]:

1. Traditional financial (quantitative) methods include calculating net present value (NPV), internal rate of return (IRR), payback period (PP), discounted payback period (DPP), profitability index (PI), and average rate of return (ARR). These indicators allow to assess the financial stability of the project and determine the feasibility of investments.

2. Probabilistic methods, for instance, real options valuation or applied information economics, take into account uncertainty and risks, allowing for the modeling of market or technology change scenarios.

3. Qualitative methods, such as the Balanced Scorecard and Information Economics, connect financial and non-financial metrics, making it possible to consider the strategic impact of IT on business.

In project management, the evaluation of the economic feasibility of an IT product should accompany each stage of its life cycle. For example, at the requirements analysis stage, it is appropriate to use predictive cost models, at the development stage to conduct NPV and PI assessments, and during implementation and support to assess actual returns and utilization efficiency ratios.

However, it is also worth mentioning that each approach has its advantages and disadvantages. Financial methods provide clear results but do not take into account strategic benefits; probabilistic methods assess risks but require statistical

data; qualitative methods provide a holistic view but depend on subjective expert assessments. Huawei's experience shows that integrating economic assessment into the lifecycle management system improves decision-making accuracy and reduces time to market.

As a result of analyzing IT product life cycle models and approaches to assessing their economic efficiency, there is a clear correlation between the effectiveness of the coordination of technical, organizational, and financial components and the success of innovative projects. Flexible life cycle models, including incremental, spiral, or Agile, provide opportunities for gradual product improvement, increase adaptability to changing market conditions, and reduce the risks of unjustified investments. At the same time, the systematic application of economic analysis methods allows for a quantitative assessment of a project's effectiveness and determination of its profitability and resource efficiency. In conclusion, the integration of IT product lifecycle management with economic efficiency assessment forms a complex decision-making assistance system, which is essential for increasing the competitiveness of an enterprise in the digital economy.

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