

# **ANALYSIS OF MATHEMATICAL MODELS OF PLANNING IN MULTI-PROJECT ENVIRONMENT**

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The main purpose of this paper is a critical analysis of management and planning models in multi-project environment, identifying key characteristics of the environment, the criteria that should be satisfied with the models. It is important to both quantitative and qualitative aspects.

Mathematical models provide efficient use of existing resources, assist in planning of project organizations. They cover various components and provide guidance in making decisions. This is an important stage in the multi-project environment. It is expected that there will be no further dispersion of forces on projects for which resources are not enough.

Effective planning in multi-project environment and application of the models is very relevant today: many organizations operate in the form of projects. Today there is clearly a problem when doing projects: a large part of them is unfulfilled in terms and amounts that were allocated for implementation. The problem is that many organizations do not know what resources they actually possess. It is necessary to isolate key resources. It often happens that the number of projects is very large and useful to discard some of them.

This problem is urgent and requires immediate solution. Existing models do not meet modern requirements in this area, do not meet modern needs. Important is the development of new algorithms.

Investigation into the current state of multi-project environment is conducted. Particular attention is paid to the practical disadvantages of current project management. Prospective measures aimed at improving the situation are analyzed.

The article has theoretical and practical value. The mathematical models of optimization: buying, storing, and distribution of resources are considered. The current status of the project management is considered. System analysis was applied, as the model is consistent with the objectives and tools present in such an environment. The results can be applied when developing new models.

Projects must be balanced. There should be a balance between projects that develop the market and the industrial components, between the risks and possible benefits of implementing risk projects, between research and development.

There should be efficient use of valuable, strategic resource of the organization that will ensure getting the most significant results.

Keywords – multiproject, optimization, project management office planning.