

OPTIMIZING PROJECT TIME-COST-QUALITY BY USING GENETIC ALGORITHMS

Prof. Dr. Constanta-Nicoleta BODEA, bodea@ase.ro,
Ileana Ruxandra BADEA, badea_ruxandra@yahoo.com
(The Academy of Economic Studies, Bucharest, Romania)

Abstract: Project management causes the problem of efficient resource assignment, activity, time constraints and relationships between activities. Traditional scheduling methods like CPM and PERT are incomplete tools to use in practice because they do not consider constraints regarding resources and cannot be realistic as they consider infinite resources. Optimization of project time-costs-quality is very complex and can be achieved by using meta-heuristic methods as Genetic Algorithms, Ant Algorithm, Tabu Search. In this article we study the state of the art in this domain, define the optimization problem we want to solve and propose some improvements for a genetic algorithm, starting from GENOCOP I (Genetic Algorithm for Numerical Optimizations of Constrained Problems) developed by Michalewicz and Janikow[12], later improved to GENOCOP V (Suzuki [9]).

Keywords: planning and scheduling, time-costs trade-off problem, genetic algorithms

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