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Evolution of Performance Measurement Methods in Conditions of Uncertainty: The Implementation of Fuzzy Sets in Performance Measurement

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Abstract : One of the basic issues of development management is connected with performance measurement as a prerequisite for identifying the achievement of development objectives. The aim of our research is to develop an improved model of assessing a company’s development results. The model should take into account the cyclical nature of development and the high degree of uncertainty in dealing with numerous management tasks. Our hypotheses may be formulated as follows: Hypothesis 1. The cycle of a company’s development may be studied from the standpoint of a project cycle. To do that, methods and tools of project analysis are to be used. Hypothesis 2. The problem of the uncertainty when justifying managerial decisions within the framework of a company’s development cycle can be solved through the use of the mathematical apparatus of fuzzy logic. The reasoned justification of the validity of the hypotheses made is given in the suggested article. The fuzzy logic toolkit applies to the case of technology shift within an enterprise. It is proven that some restrictions in performance measurement that are incurred to conventional methods could be eliminated by implementation of the fuzzy logic apparatus in performance measurement models.

Keywords : logic, fuzzy sets, performance measurement, project analysis
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