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Dynamic Modelling of a Knowledge Management System Evolution for a Technological Corporation

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The paper describes a dynamic mathematical model of a knowledge management system for a technological corporation. The model consists of three equations for generalized variables which characterize the human capacity, accumulated knowledge and profits interrelated by means of the Cobb-Douglas production function. The presented model is intended to simulate the system evolution over time including identification of possible catastrophic behavior of the system and can be used to solve various problems of forecasting the development of knowledge management systems in technological corporations, and assess the effectiveness of organizational measures aimed at improving the system efficiency. Using this model, it is possible to simulate the system evolution over time and conduct scenario research in the changing internal and external conditions as well as select the optimal system parameters in order to achieve certain goals and formulate requirements for the system components.
The authors present the results of applying this model in simulating the dynamics of the knowledge management system development in a technological corporation and discuss some methodological issues related to the mathematical modeling of processes and models of knowledge management.

Country or International Organization

Russian Federation

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