The Maple System – Support for Digitization of Analyzes of Company´s Processes

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Abstract

Purpose of the article Nowadays, digitization of processes is an important priority. From the economy point of view, it leads companies to invest in the information and communication technologies to increase their economic value, to keep market share and profit stability and to meet strategic goals, etc. The aim of this paper is to present the possibilities of implementation of the advanced computer system Maple in the decision-making process in a case study on the suitability of investment and keeping stock of the company. The sub-goal is to present selected features of the actually released version Maple 2018, which provides many resources for digitization support in the form of mathematical models, visualizations, simulations, self-education, etc. The article follows the successfully defended bachelor's and master's thesis (2015 and 2018 - by one of the co-authors) at the FBM (BUT), as a sample of synthesis the practice and the theory using modern information and communication systems.

Methodology/methods Selected quantitative methods (mathematical modeling and visualization, optimization, statistical characteristics), interactive simulations of phenomena and their analysis, applications of built-in subsystems and libraries of the Maple system.

Scientific aim Support for the development of the digital economy based on the intersection of more areas (mathematical, economic and informatics and communication).

Findings Finding an effective solution of the problem, especially in the area of investment, for the strategic management of a company.

Conclusions To provide an example of the implementation of the Maple computer system in the analysis of the company's processes with the aim of optimizing its activities and the effectiveness of its outputs, eventually possibility of evaluation of the corporate sustainability performance.

Keywords: mathematical modeling and interactive simulation, Maple system, company's process

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