OPINION

by Associate professor Boriana Vatchova Ph.D. at the Institute of Information and Communication Technologies-BAS

Member of the Scientific Jury appointed by the Director of IICT-BAS

Order №61/28.03.2025

About: Dissertation thesis of Naiden Kirilov Naidenov entitled "Research and Modelling of business processes supporting decision-making related to digital transformation" presented for acquisition of educational and scientific degree "Doctor" in a doctoral program "Informatics",

professional field: 4.6. "Informatics and Computer Science"

At the first meeting of the scientific jury, which took place on 02.04.2025, I was appointed to prepare an opinion on the procedure, for which I received all necessary documents.

ACTUALITY

The digital transformation is an organizational change that is triggered and shaped by the increasing spread of digital technologies. It has a huge impact on the business climate in companies, which leads to a completely new rethinking of goals and strategies in different organizations. The digital transformation is a multidimensional process that encompasses a number of components, including technological, organizational, and cultural aspects. Its influence on the development of technologies in companies leads to the creation of new perspectives on their management.

KNOWLEDGE OF THE PROBLEM

From the overview made, as well as from the published results on the subject of the dissertation work, it can be concluded that the PhD student is well prepared with the nature of the research. Additional proof of this is the number of literatures sources used and good publication records.

ANALYTICAL CHARACTERISTIC

The doctoral study has a total volume of 126 pages, 30 figures,16 tables and 187 literary sources. It is structured as follows: introduction,3 chapters, conclusion, possibilities for future development, scientific and scientific-applied contributions, list of publications

on the topic of the dissertation, list of citations, declaration of originality of results, bibliography.

Chapter 1 provides an overview of the main tasks contributing to the achievement of digital transformation. The main business processes are analysed, as well as the stages for successful digital transformation.

Chapter 2 describes the proposed models that support decision-making in various processes related to digital transformation. An integrated approach is presented for assessing the progress of digital transformation using multiple objective and subjective indicators.

Chapter 3 presents the numerical experiments conducted on the proposed models. The results of testing the proposed integrated approach for assessing the progress of digital transformation using multiple objective and subjective indicators are described.

The conclusion summarizes the results obtained from the proposed and tested mathematical models for supporting decision-making related to digital transformation.

OBJECT AND METHODOLOGY OF THE RESEARCH

The object of the study is the impact of digital transformation on technologies, processes, culture, experience. The purpose of the dissertation is to investigate business processes related to digital transformation, on the basis of which to propose appropriate mathematical models that support decision-making and lead to the improvement of digital transformation processes.

The methodology used to achieve the goals is based on multi-criteria analysis, mathematical modeling, numerical experiments, comparative analysis of business processes, methods for data processing, optimization of management decisions. The dissertation makes a significant contribution to the scientific community dealing with digital transformation and management decision-making.

ABSTRACT

The submitted abstracts in Bulgarian and English, faithfully reflect the content of the dissertation research and correspond to the requirements of Law and on the Development of the Academic Staff in the Republic of Bulgaria and the Rules of its Implementation. From the submitted declaration of originality, as well as of the publication records on the subject of the dissertation, it can be determined that described results are personal work of the author.

EVALUATION OF COMPLIANCE WITH THE MINIMUM NATIONAL REQUIREMENTS AND THE ADDITIONAL REQUIERMENTS UNDER ART.1A, AL.2

A total of 3 publications on the topic of the dissertation and 1 in pre-print publication are presented. All of them are indexed in the world databases for scientific information and 3 of them are in publication with SJR. The presented publications on the subject of the dissertation research fully satisfied the specific requirements of IICT-BAS for the acquisition of the educational and scientific degree "Doctor", science the doctoral student has 60 points. The minimum requirements points are 30.

CONTRIBUTIONS

I fully accept the formulated contributions of the doctoral student.

CRITICAL REMARKS AND RECOMMENDATIONS

I do not have any critical remarks about the dissertation work, but only editorial ones. Following the recommendations made by me during the extended meeting of the Department on 21.03.2025, regarding the preliminary discussion of the dissertation of Naiden Naidenov, I confirm that he has worked them out and reflected them in his final version of his research.

FINAL COMPREHENSIVE ASSESMENT

The results obtained on the subject of the dissertation work show that Naiden Naidenov possesses the necessary theoretical knowledge and practical skills in the field of informatics and computer science as well as proven abilities for independent scientific research. The presented dissertation meets the requirements of the Law and Development of the Academic Staff in the Republic of Bulgaria, the Rules for its implementation, as well as the Rules for Specific Conditions for Acquiring Scientific Degree and Holding Academic Position at IICT-BAS. **The obtained results on the topic of the dissertation research give me sufficient reason to give a categorically positive assessment of the presented dissertation work and I propose to the respected Scientic Jury to award Naiden Naidenov the educational and scientific degree "Doctor" in the doctoral program "Informatics", professional direction 4.6."Informatics and Computer Science".**

На основание
ЗЗЛД

13 May 2025