НОВ БЪЛГАРСКИ УНИВЕРСИТЕТ

# REVIEW

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**4.5. Mathematics**

**About procedure for obtaining a scientific degree "doctor" in a professional direction 4.6. Informatics and computer science with candidate Penko Zhelev Ivanov**

The presented dissertation "Analytics in IT projects" examines an essential aspect in the field of the IT-related industry. The growing complexity of projects in this area requires the application of a number of analytical approaches in the analysis of the processes in them. The dissertation is focused on the successful integration of analytics in IT project management and the improvement of education in this field. The objectives set before the dissertation include a critical analysis of existing methodologies and standards for integrating the analytical approach in IT projects, a proposal for a methodological framework, consistent with modern industry standards, which considers the analytical approach as an essential part of the management of IT project processes, as well as and guidelines for an educational framework for training specialists in this field. The considered methodologies are validated through their application in real IT projects and educational programs.

The dissertation is structured into nine main chapters. It is developed in a volume of 300 pages in its main part, including 80 figures, 12 tables, 8 samples of program code. The bibliographic reference includes 149 sources.

In the first chapter of the dissertation, the main issues in the application of analytical approaches in IT project management are discussed. In the second chapter, a systematic review of the literature in this direction is made. Existing methodologies and the impact of the availability of large volumes of data and the effects of large language models on the modeling of project management processes are reviewed.

The third chapter is devoted to a description of the research methodology, data collection and processing. The fourth chapter presents the developed methodological framework and outlines the advantages over existing methodologies. In the fifth chapter, specific applications of the considered methodology are presented, showing its practical application.

The sixth chapter is focused on the educational aspects of the proposed methodology. The need for an educational framework that prepares students for its goals and bridging the gap between academic knowledge and industry requirements is discussed.

Chapters 7 and 8 examine various case studies that demonstrate applications of the methodology discussed.

The main results of the dissertation are presented in the fourth and fifth chapters.

The methodology studied in the dissertation covers a not particularly popular topic in the field of project management methodology in the field of IT. Using an analytical approach in this activity could (as shown in the work) improve the efficiency and quality of project management. It was noted that the effective application of such a methodology requires specific changes in the paradigms of the process of training specialists in this field. The work examines both the basic principles of the proposed methodology and the application in several specific empirical cases.

The dissertation has a clearly formulated objective: To examine the aspects of the analytical approach in project management, as well as the necessary paradigms in education in this field.

As the topic is a relatively unexplored area in this scientific direction, the development of the doctoral student is original and is the result of his professional interests in recent years.

The rich professional experience of the doctoral student in this area allows for an up-to-date presentation of the problem, as well as the current state of research in this area. The used literary sources show the completeness of the current state of the subject area. The development of the proposed methodological framework is largely based on the systematic review of the literature sources.

The methodology used includes both qualitative and quantitative approaches in analyzing specific cases. This is essential to validate the conclusions drawn and demonstrates the applicability and effectiveness of the presented approach.

The approach proposed in the dissertation has a direct impact on the quality and efficiency of the activity in the field of IT project management. The proposed methodology considers the entire project development cycle and combines within itself some of the generally accepted industry standards in this area.

The research proposed in the dissertation demonstrates the ability of the doctoral student Penko Ivanov for independent research, including both the development of a theoretical framework and the practical application of this framework in specific practical examples. This combines both the necessary scientific innovation and the practical means to solve real-world problems, as well as the means to evaluate their effectiveness.

The results presented in the dissertation have been published in several articles, one of which is in an indexed scientific publication. This satisfies the requirements of ZRAS for obtaining the scientific degree "doctor".

**Remarks:**

The approach presented in the work largely interacts with a number of methodologies that are standardized with a view to their correct application (for example, through BDS). This aspect is not reflected in the work. How would this impact the methodology developed.

**Conclusion:**

Представения от докторанта Пенко Иванов дисертационен труд покрива изискванията за придобиване на образователна и научна степен “доктор” съгласно ЗРАС на РБ. Убедителните научни и научно приложни качества на работата ми позволяват да дам положителна оценка на работата и да препоръчам придобиването от Пенко Иванов на образователната и научна степен “доктор”.

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