

To the Department of
Finance and Insurance,
Higher School of Insurance
and Finance, Sofia

OPINION

by Prof. Dr. Stoyan Prodanov with a scientific specialty in "Finance, Monetary Circulation, Credit, and Insurance", registered at NACID since December 1, 2018, member of the Scientific Jury, Order No. 135/22.03.2024 by Prof. Boris Velchev, Rector of Higher School of Insurance and Finance, Sofia on the composition of a scientific jury for the dissertation of Ph.D. candidate Dobromir Valentinov Donchev on the topic " Creating a Governance Model of Digital Transformation of Business Entities in the Digital Economy through Process Mining Methodologies". The scientific advisor of the Ph.D. candidate is Assoc. Prof. Radostin Vazov, Ph.D., Department of Finance and Insurance, Higher School of Insurance and Finance, Sofia.

Dear members of the scientific jury,

The topic of the dissertation work of Ph.D. candidate Dobromir Valentinov Donchev is " Creating a Governance Model of Digital Transformation of Business Entities in the Digital Economy through Process Mining Methodologies". This opinion has been developed in accordance with the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria - ZRASRB, the Regulation for the Implementation of ZRASRB - PPZRASRB, and the Regulation for the Admission and Training of Ph.D. students at the Higher School of Insurance and Finance.

1. Information about the Ph.D. candidate

Ph.D. Student Dobromir Donchev has obtained bachelor's and master's degrees from universities in the country. In 2003 he completed a Bachelor's degree in "Mechanical Engineering - Precision Engineering" at TU - Sofia. In 2012 - a Master's degree in Electronic Business and Electronic Management, UNIBIT, Sofia, and in 2013 - MBA, major in Leadership, Management, and Finance (in partnership with Ambient), Higher School of Insurance and Finance, Sofia.

The training as a doctoral student is carried out independently in a doctoral program at the Department of Finance and Insurance, Higher School of Insurance and Finance, Sofia. Scientific supervisor is Assoc. Prof. Radostin Vazov, Ph.D.

2. General Presentation of the Dissertation

This opinion has been prepared in accordance with the regulatory requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria, the Regulation for the Implementation of the Law on the Development of Academic Staff in the Republic of Bulgaria, and the applicable internal regulatory framework of VUZF.

The dissertation presented for scientific assessment explores the management of digital transformation of business entities in the conditions of a digital economy through process research methodologies. Additionally, a list of the main scientific and scientifically-applied contributions, a list of publications on the topic, used literature, a list of included figures, and two appendices are provided. The volume of the main text is 184 pages, including 67 figures and 4 tables.

In the introduction, the relevance of the researched problem is substantiated, and its dissertability is justified. The first two chapters of the study outline the methodological and contextual framework. The first chapter examines the scientifically applied paradigms that determine the choice of methodological approaches with a focus on business analysis and requirements management. The second chapter focuses on the technical aspects of managing digital initiatives, models for managing and developing processes, and the main concepts of the new data science concepts, including the paradigm for process research (Process mining).

The third chapter provides a detailed analysis of the new paradigms that support the management of digital innovations. The main attention is directed to the introduction and application of the methodology for process research as an innovative model for business process management. This methodology helps to solve main tasks related to the management of large data arrays, resources, and the need for rapid adaptation to the conditions of the developing digital economy. The conclusion summarizes the main findings of the dissertation work and presents problem areas for future research.

Every company in its daily activities deals with generating and managing knowledge, which is key to making management decisions, developing new products, and solving customer problems. The main processes in companies, such as management, value creation, and development, depend on the generation of new

knowledge. The productivity formula is expressed as a product of knowledge and resources, and strategies for development can focus either on increasing resources (extensive development) or on knowledge (intensive). In the contemporary socio-economic environment, knowledge-based solutions are less costly and efficient, contributing to increased effectiveness. Efficient generation of knowledge requires constant rethinking of existing processes and seeking improvements through new information and perspectives. In practice, the introduction of innovative management models in a digital environment can significantly improve process management, integration of core activities with management, and the ability of organizations to develop and adapt to changes. The approach to change management, modification of IT systems, and behavioral changes in employees are key to the successful application of such models. Measuring success through realized value indicators and return on investment Measuring success through indicators of realized value and return on investment (ROI) is essential for assessing the impact of the innovations introduced.

The purpose of this dissertation is to explore the influence of organizational factors on the digitalization process of business and to identify opportunities for optimization of the company through the application of process mining methodologies. The work presents a comparative analysis of the main business sectors and develops an innovative model for managing risk investments in the digital economy, ultimately aiming to develop an adapted model for managing digital transformation, focused on improving efficiency and satisfaction of customers and staff.

The tasks of the dissertation include the development of a conceptual innovative management model, studying the readiness for the application of Agile methodologies and CMMI in the context of business requirements, a detailed analysis of various flexible development models, and the study of the possibilities for integration of Process mining methodologies in business processes.

The study covers innovative business projects focusing on the entire life cycle of business cases from creation to optimization and includes the strategic development of investments. The impact of flexible management methodologies, quality control systems, and process research is analyzed.

The main hypotheses of the study are that the existing models for managing digital products require adaptation to the technological and social environment of each company and that the integration of various organizational components can significantly improve the competitiveness of firms in the digitalization process.

The methodology includes theoretical analysis, survey research, SWOT analysis, and the application of the principles of objectivity, transparency, comprehensiveness, and applicability. The study is aimed at identifying the most significant aspects of digital transformation, without covering human resources, cybersecurity, and standardization in the field of ICT.)

3. Assessment of the Scientific and Applied Scientific Results

The tasks set in the dissertation are assessed as achieved and resolved. The formulated and scientifically derived results in the dissertation confirm the correct application of the methodology for analysis and research.

The dissertation contains scientific-applied and applied results, which represent an original contribution to science and meet all the requirements of the Law for Development of the Academic Staff in the Republic of Bulgaria (ZRASRB) and the Regulation for the Implementation of ZRASRB. The presented materials and dissertation results fully meet the specific requirements of the Regulation for Admission and Training of PhD students at the Higher School of Insurance and Finance.

4. Assessment of Formulated Contributions and Achieved Theoretical and Empirical Results

The proposed dissertation examines scientific-practical approaches for renewing objects, processes, and technologies in the economy, production, and management of digital products. The work presents a new innovative model for managing the lifecycle of digital products, which meets the need for flexible planning of capacity, sales, and resources in a dynamically changing economic environment. This model aims to increase the productivity and profitability of the business. The following contributions are drawn:

1. Detailed analysis of BA, CMMI, and Agile methodologies.
2. Determining the synergy between the reviewed models and Process Mining practices.
3. Analysis of the main problems and their causes in the life cycle of digitization of companies.
4. Identifying the interdependencies between organizational factors and the quality of digital products/services produced and systematizing approaches for their resolution.
5. Proposal for a new applied model for interpreting the main

methodologies.

6. Development of a model serving as a basis for future development of process innovation, based on integration between data sciences and a complex management approach in a digital environment with real-time data. The assessment of the established scientific contributions is positive. The presence of a precisely built and expertly guided doctoral candidate by their scientific advisor is confirmed.

5. Assessment of the Publications on the Dissertation

The dissertation has presented five publications, four of which are independent. The publications confirm the achievement of the necessary level of publicity.

6. Assessment of the Dissertation Abstract

The dissertation abstract of 49 pages meets the requirements for a systematic exposition of the main achievements in the dissertation work. It systematically presents all the main aspects of the dissertation work.

7. Critical Remarks, Recommendations, and Questions

Questions for discussion at the public defense:

1. What role could artificial intelligence and machine learning play in optimizing the new innovative model for managing the lifecycle of digital products and how could this impact the strategic planning and competitiveness of enterprises?
2. How can traditional industries, which traditionally rely on heavy physical processes and productions, adapt to the principles of Process Mining to improve their operational flexibility and response to rapidly changing market conditions?

8. Conclusion

The dissertation shows that the candidate Dobromir Valentinov Donchev possesses profound theoretical knowledge and professional skills in Professional Direction 3.8. Economics, demonstrating qualities and skills for independently conducting scientific research.

Based on the study of the dissertation, in accordance with Article 8(3) of the Law for Development of the Academic Staff in the Republic of Bulgaria, considering the very good knowledge of the theory and practice in the studied field, as well as the original analytical results contained in the presented dissertation work, I propose that the scientific jury award the educational and scientific degree "Doctor" to Ph.D. candidate Dobromir Valentinov Donchev.

17.4.2024 г.
Svishtov

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/ Prof. Stoyan Prodanov, PhD/