



REVIEW

From: *Prof. Krasimir Todorov Shishmanov, PhD,*

Scientific Specialty: „Application of Computer Technology in Economics”

D. A. Tsenov Academy of Economics – Svishtov

Subject: competition for occupying the academic position of "Associate Professor" in the scientific specialty „Application of Computer Technology in Economics” in the professional field: 3.8. ECONOMICS, scientific specialty: "Application of Computer Technology in Economics", professional field 3.8 Economics, higher education area 3. Social, Economic, and Legal Sciences, for the needs of the Department of “Business Informatics”, announced in the State Gazette, issue 60 dated July 25, 2025.

1 . Grounds for writing the review

The review is prepared in accordance with the decision of the Faculty Council of the "Management and Marketing" faculty (Protocol N1/17.09.2025), Order N 954/18.09.2025 of the Rector of the D. A. Tsenov Academy of Economics, the decision of the first meeting of the Scientific jury dated 29.09.2025, and pursuant to Art. 122, para. 1 of the Regulations for the Development of Academic Staff at "D. A. Tsenov" Academy of Economics.

2. Information about the candidates

One candidate is participating in this competition:

Head Assist. Prof. Kremena Mariyanova Marinova-Kostova, PhD

A lecturer in the Department of Business Informatics, Management and Marketing Faculty, at the D. A. Tsenov Academy of Economics — Svishtov.

3. Personal characteristics of the candidate

Head Assist. Prof. Kremena Mariyanova Marinova-Kostova, PhD, graduated with a bachelor's degree in the specialty "Informatics" in 2008 and simultaneously acquired additional professional training in Economic Pedagogy at the Centre for Postgraduate Studies and Continuing Education at the Academy.

In the period 2008-2009, she also received a master's degree in the specialty "Business Informatics", MP "Information Technologies in Business".

In 2013, after successfully defending a dissertation on the topic "Improvement of Electronic Customer Relationship Management systems in the financial sector ", she obtained the Educational and Scientific Degree "Doctor of Philosophy - PhD (diploma No. 2013012 of 29.04.2013) in the scientific specialty „Application of Computer Technology in Economics.”

In the same year, 2013, the academic career of Kremena Marinova-Kostova, PhD, began as an assistant professor at the Department of Business Informatics. Since 2017, she has been a Head Assistant Professor and Scientific Secretary of the Department of Business Informatics. In addition, Kremena Marinova-Kostova is the secretary of 2 master's programs "Electronic Business and Digital Markets" and "Electronic Commerce" at the department.

During her 12 years of teaching experience, in order to improve her qualifications and skills, Kremena Marinova-Kostova has participated in a number of courses, trainings and specializations. She has participated in 3 team projects for scientific research in the fields of science, in 1 infrastructure project for conducting quality and competitive scientific research, in 1 project for a scientific forum and in 1 international project.

She has also participated in 3 projects aimed at mobility and has accordingly implemented 4 international mobilities for teaching and training under the Erasmus+ program and other programs. She speaks freely – English and mainly German and Spanish. She has excellent computer and digital skills, as well as very good pedagogical and social competencies.

4. Quantitative and qualitative evaluation based on teaching criteria and compliance with requirements

Head Assistant Professor Kremena Marinova-Kostova PhD, has a total work experience of 13 years, of which nearly 12 years were as an assistant and head assistant at the D. A. Tsenov

Academy of Economics. Before taking up the aforementioned academic positions, she was a teacher of "Informatics" at the PSCHS "Dimitar Hadzhivasilev" for 1 year.

According to the academic workload records provided, for the last five academic years, the average annual number of hours of classroom employment of Kremena Marinova-Kostova is 534.74 hours, with a standard according to Regulations for the Development of Academic Staff at "D. A. Tsenov" Academy of Economics of 360 hours. The workload by academic year is as follows: 2020/2021 — 498,35 hours, 2021/2022 — 561,78 hours, 2022/2023 – 575,38 hours, 2023/2024 – 477.96 hours, 2024/2025 – 560,14 hours.

The candidate participated in the development and teaching of **23** lecture courses - **7** lecture courses in the Bachelor's Degree and **16** in the Master's Degree. Specifically, these are: **Bachelor's Degree** - Business Information Systems, Introduction to Information Systems, Electronic Government, Information Infrastructure, Tourism Information Systems, Business Information Systems, E-Business Fundamentals; **Master's Degree** - Information Systems in Business Organisation (in Bulgarian and English), Fundamentals of Electronic Business (in Bulgarian and English), Customer Relationship Management and Social Networks (in Bulgarian and English), Electronic Payment Systems (in Bulgarian and English), Electronic Business in Tourism, Introduction to Information Systems (in Bulgarian and English), Information Infrastructure, Electronic Commerce and Electronic Payments, Business Information Systems, Master's Seminar in Electronic Business and Digital Markets, Master's Practicum in Electronic Commerce.

The presented information shows that the candidate not only meets but significantly exceeds the quantitative requirements for teaching activity. The wide range of developed courses and taught disciplines, including those in English, presents Kremena Marinova-Kostova, PhD, as an instructor with strong specialized and theoretical training, which, combined with her accumulated pedagogical experience, provides a solid foundation for further development and professional growth.

5. Quantitative and qualitative evaluation based on research criteria and compliance with requirements

Based on the attached report on compliance with the minimum national requirements and the internal requirements of the D. A. Tsenov Academy of Economics, Head Assistant Professor Kremena Marinova-Kostova, PhD reports the following points according to the quantitative

criteria: Group A – Dissertation thesis – 50 points; Group B – Habilitation work (monograph) – 100 points; Group Г – Publications – 261.33 points (minimum required: 200); Group Д – Citations – 1,495 points (minimum required: 50); i.e. a total of 1,906.33 points (minimum required: 400). The achieved quantitative results significantly exceed thresholds set in Art. 2b, paras. 2 and 3 of the Act on the Development of Academic Staff in the Republic of Bulgaria and the Regulations for its application.

Head Assistant Professor Kremena Marinova-Kostova, PhD, submits 28 scientific works for participation in the announced competition. Structurally, her scientific output includes: 2 monographs, 8 articles, 14 conference papers, and 4 studies. The research works are authored individually or in co-authorship, with 8 of them (3 articles and 5 papers) published in scientific journals referenced and indexed in Scopus and Web of Science (with the internal Regulations for the Development of Academic Staff at "D. A. Tsenov" Academy of Economics, requiring only one scientific publication). Overall, the scientific output is sufficient both in volume and structure, and the substantial number of publications in globally recognized databases attests to the high quality, scientific achievements, and international recognition of the candidate's research activity.

Kremena Marinova-Kostova's scientific interests cover a wide range of problems in the field of information technologies, which can be systematized in several main areas: digital ecosystems and platforms, the application of Big Data and IoT in the economy and tourism, the development of financial and business technologies, as well as digital transformation in education, etc.

In the presented scientific works, themes that combine informational and educational issues can be found. The main habilitation work, "Research on internet technologies' potential to improve digital competence in education" is of the same nature. It explores the digital competence of the population, which, according to the author, is a key skill for successful adaptation and professional realization. The monograph reveals that many fields such as information technology, digital marketing, programming, and othersp require advanced digital skills, most of which are acquired in educational institutions. It asserts that the digital competence of learners is both a goal that educators strive to achieve and a means that supports students in mastering other disciplines and contributes to their future professional development. The study is based on a rich theoretical and empirical foundation, including an original survey conducted by the author. It presents a comprehensive and in-depth analysis of the state of digital competence among learners and

educators, as well as the use of internet technologies in the Bulgarian educational system. The identified strengths, weaknesses, opportunities, and threats are summarized through a SWOT analysis, while a PESTEL analysis outlines the environment in which the educational system operates and which influences the opportunities for technological innovation and structural reform within it. The current specifics for Bulgaria are outlined and a conclusion is formulated about the potential of Internet technologies in education, which shows that they can significantly contribute to increasing the digital competence of pupils and students. The need to provide appropriate resources, training and infrastructure to get the most out of these technologies is argued, as well as requiring an integrated approach, with strong participation of educational institutions, government bodies, industrial partners and the learners themselves.

Another significant part of the scientific work of Head Assistant Professor Kremena Marinova-Kostova is related to the application of the concept of the Internet of Things (IoT) and defining it as a key technological factor for the development of Industry 4.0 and as an important and decisive step in the process of digital transformation in business. In this context, issues related to digital ecosystems (DE), which are being established as a strategic tool for innovation and sustainable development, are also considered. The presented publications clarify the essence of the concept of "digital ecosystem", examining its multi-layered and multi-perspective nature, classifying its main types and components, and proposing a business model for creating value through an ecosystem approach.

Thematically related to the previous topics are the studies dedicated to Big Data and Big Data Analytics (BDA) for value creation. The goal of the studies in this direction is to identify the main factors that influence the implementation of BD and BDA, to analyze and compare existing models for generating value through them and how business organizations can use this potential.

Based on the technological foundations discussed above, ideas have been developed for some other technological solutions, such as digital service innovations (DSI). In the context of digital transformation and the growing need for personalized, efficient and innovative services, they are establishing themselves as a strategic approach for creating value and competitive advantage. Similar are the proposals in the field of tourism, where global challenges such as climate change, socio-economic inequalities and digital transformation confront the tourism industry with the need to adapt its management and development models. Analyses and arguments have been proposed on how digital technologies and the ecosystem approach can contribute to the

sustainability of tourist destinations, by considering economic, social, cultural, environmental and institutional aspects.

The candidate, Kremena Marinova-Kostova, PhD, also demonstrates active research interest in other contemporary and promising topics related to the digitalization and digital transformation of various sectors of the economy. These studies broaden the scope of her scientific work and highlight her engagement with the current challenges of modern business.

The presented scientific activity of Kremena Marinova-Kostova, PhD, is diverse and multidisciplinary, distinguished by both depth and relevance. Her research successfully combines theoretical frameworks with empirical evidence, aimed at identifying practical applications of information technologies in education and business.

6. Consistency of research contributions with those declared by the candidates.

In the Report on Scientific and Applied Contributions, Kremena Marinova-Kostova, PhD, organizes her scientific achievements into 12 points, corresponding to the research directions she has outlined in her work. In terms of content, the contributions objectively reflect the results achieved; however, they are numerous, and the formulations themselves are rather general, which, to some extent, makes it difficult to distinguish the core scientific accomplishments. Nevertheless, Kremena Marinova-Kostova's research contains a sufficient number of significant contributions, important both for theory and practice, which I propose to group as follows:

The scientific contributions include a thorough analysis of the concept of a digital educational ecosystem, in which technological tools, pedagogical practices, and digital competencies are viewed as interconnected elements of modern education, as well as a proposed interdisciplinary model for enhancing the competencies of both educators and learners through the integration of innovative internet technologies. Contributions also include the identified opportunities related to the potential of Big Data and IoT as leading technologies for building and improving intelligent business environments. Additionally, the concept of a digital ecosystem for a tourist destination — as an integrated set of digital platforms and application interfaces (APIs) — can be highlighted, along with the results of a comparative analysis of existing electronic identification tools in Bulgaria and the European Union.

The applied scientific contributions are reflected in the developed integrated model for building digital platforms for data management and analysis, applicable in the tourism sector and

service industries, as well as in the hybrid applied model for implementing digital transformation in large Bulgarian enterprises, which combines cloud services, integration of corporate information systems, and monitoring solutions. Another notable contribution is the proposal to use the Personal Identification Code (PIC) of the National Revenue Agency as a universal identifier for access to electronic administrative services, justified on the basis of the SWOT analysis conducted on the existing electronic identification tools in Bulgaria. The conducted studies have significant applied value. On their basis, the level of digital competence was assessed and the main challenges in the use of Internet technologies in education were identified. Recommendations were formulated for increasing digital skills through targeted training, resource support and implementation of hybrid learning models. As a result of the study, the opportunities and risks associated with the implementation of Big Data and IoT in Bulgarian business were analyzed and the study provided an opportunity for a realistic analysis of the current state of the digital transformation of the entities in the tourist destination of Veliko Tarnovo.

7. Academic visibility characteristic of the candidates

Based on the citation records, it becomes clear that the candidate has sufficient popularity among the scientific community and the research published by Kremena Marinova-Kostova, PhD, along with the results achieved, is of interest to numerous specialists both in Bulgaria and abroad.

In the report, the candidate provides evidence of a total of 110 citations, including 93 in scientific journals indexed and refereed in Scopus and Web of Science; 3 in monographs and edited volumes with scientific peer review; and 14 in non-indexed journals with scientific peer review. This amounts to a total of 1,495 points (with a required minimum of 50), once again far exceeding the required threshold.

8. Critical notes and recommendations

In view of my thorough knowledge of the scientific and teaching work of Kremena Marinova-Kostova PhD, I have no critical remarks. I would, however, like to offer a few recommendations. The first is to focus on the specific areas in which she works in order to achieve a higher degree of specialization. Based on this, the following are suggested: to take responsibility for participating in and leading research projects (including national and international), to supervise

and mentor future PhD students, and to continue her active publication record in scientific journals indexed and refereed in Scopus and Web of Science.

9. Summary conclusion and opinion

Taking into account the presented data, facts, and supporting documents with evidence, it can be stated that the candidate meets the requirements of the Act on the Development of Academic Staff in the Republic of Bulgaria, the Regulations for its application, and specifically Article 116 of the Regulations for the Development of Academic Staff at "D. A. Tsenov" Academy of Economics and deserves a positive evaluation for appointment to the academic position of "Associate Professor."

In conclusion, I express the opinion that the candidate for the academic position of "Associate Professor" is an established teacher and researcher, proven through many publications in the field of information technology theory. I recommend that the Scientific Jury propose to the Faculty Council of the Faculty of Management and Marketing at the D. A. Tsenov Academy of Economics - Head Assist. Prof. Kremena Mariyanova Marinova-Kostova, PhD to be elected to the academic position of "Associate Professor" in a scientific specialty: "Application of Computer Technology in Economics", professional field 3.8 Economics, higher education area 3. Social, Economic, and Legal Sciences.

October 20, 2025

Svishtov

Reviewer: :.....

/prof. K. Shishmanov/