https://doi.org/10.53656/str2025-1s-13-sme

INNOVATIONS IN SMALL AND MEDIUM ENTERPRISES – STATE AND CHALLENGES

Dr. Boyko Takov, Assist. Prof
University of National and World Economy

Abstract. Developing technologies, changing consumer demands, and increasing competitive pressure compel small and medium enterprises (SMEs) to innovate across all aspects of their operations continuously. Their innovation activity significantly influences the overall innovation performance of our country and, consequently, the pace of its development.

Unfortunately, the innovation activity of SMEs remains unsatisfactory, with most of them failing to utilize the potential of modern, high-performance technologies fully. At their current stage of development, adopting innovations and new technologies remains their most critical challenge. This is also a challenge for Bulgaria as a whole, as the country significantly lags behind the European Union average in terms of implementing innovations and new technologies. The main reason for this lag is the underdeveloped innovation system in Bulgaria.

Assessing the state and challenges of innovation activity in the SME sector is hindered by insufficient statistical data. At the same time, such an assessment is necessary for comparative purposes and for devising government policies and measures to stimulate it.

In light of this, this publication aims to present summarized results regarding the innovation activity of SMEs and the key factors hindering it based on empirical research. These results can be useful in directing the efforts of governmental bodies and managers toward fostering the development of SMEs and promoting innovation within them.

Keywords: SMEs; innovation; digital transformation; development; assessment; analysis

Introduction

Developing technologies, changing consumer demands, and increasing competitive pressure compel small and medium enterprises (SMEs) to innovate across all areas of their operations continuously. Their innovation activity significantly influences the overall innovation performance of our country and, consequently, the pace of its development. It is undeniable that fostering innovation and adopting modern technologies within SMEs is a crucial mechanism for achieving competitiveness and economic success not only for individual enterprises but also for the nation as a whole (Aleksandrov 2024; Veleva, Velev 2023).

Unfortunately, SMEs' innovation activity is still unsatisfactory, with the majority failing to take full advantage of modern, high-performance technologies (Veleva, Tsvetanova 2020). At their current stage of development, adopting innovations and new technologies remains their most critical challenge. This challenge extends to Bulgaria as a whole, which significantly lags behind the European Union average in terms of implementing innovations and new technologies. The primary reason for this lag is the inadequately developed innovation system in the country.

The state of the innovation environment and the level of innovation activity in Bulgaria are evaluated through the Global Innovation Index (GII) (WIPO 2024). This index, developed by the World Intellectual Property Organization, assesses the innovation capabilities of different countries. Bulgaria consistently ranks in the lower half of countries, according to the GII. In the 2024 ranking, it occupies the 38th position among 133 global economies, showing no significant progress compared to previous years when it had achieved better positions. Bulgaria remains well below the EU average, ranking 24th among 39 European countries. However, among middle-income countries, Bulgaria ranks 4th.

The GII assessments reveal that in 2023 and 2024, Bulgaria made insufficient improvements to its innovation system. Its ranking in innovation inputs (conditions for innovation) deteriorated, reaching 50th place. Slightly better results were achieved in innovation outputs compared to the previous year.

A comparison of Bulgaria with the top 10 countries globally and the European average highlights significant lagging across nearly all elements of the innovation environment. The only exception is infrastructure development, where Bulgaria surpasses the European average. Key strengths identified for Bulgaria include ISO 14001 environmental standards per billion PPP GDP, ISO 9001 quality standards per billion PPP GDP, and labor productivity growth.

Similar conclusions are drawn in the **European Innovation Scoreboard 2024**. Bulgaria is categorized as an emerging innovator, ranking 33rd among European countries with an overall innovation index score of 50.6. This places Bulgaria at 46% of the EU average. Its performance is also below the average for emerging innovators (48%). Denmark is identified as the most innovative EU member state in 2024, surpassing Sweden, which held the leading position from 2017 to 2022.

According to the EIS 2024 assessments, the innovation performance of SMEs in Bulgaria is unsatisfactory. Regarding the adoption of product innovations, SMEs are at only 44.4% of the EU average, while process innovations reach just 17%.

Given this context, this publication aims to present summarized results on the innovation activity of SMEs and the main factors hindering it based on empirical research. These results can help guide the efforts of government bodies and managers to stimulate SME development and innovation.

Methodology

The analysis and conclusions presented here are based on empirical research conducted by the Executive Agency for the Promotion of Small and Medium Enterprises (BSMEPA). The research approach involved collecting, processing, and analyzing empirical data from active SMEs in Bulgaria. The study employed a quantitative survey method using an online questionnaire (CAWI). The definition of innovation used aligns with OECD and Eurostat standards (OECD and Eurostat, 2005):

Innovation is introducing a new or significantly improved product (good or service), process, marketing method, or organizational method in business practices, workplace organization, or external relations.

Target Groups and Coverage

The target groups included representatives (owners and managers) of small and medium-sized enterprises across Bulgaria. The survey was conducted nationally from October to November 2024 (BSMEPA, October – November 2024).

The survey responses provided direct feedback from owners and managers on their assessment of the state and challenges of innovation activity within SMEs. This feedback offered a rapid and accurate evaluation of areas where SMEs require support and their views on how such support should be provided by the government.

For this publication, the results were compared with those from a previous study conducted in February 2024 (BSMEPA, February 2024). While the SME samples in both studies did not represent the country as a whole, the findings indicate the challenges facing SME innovation activity. These findings can inform the efforts of government bodies responsible for supporting SME development.

Sample Composition

Due to several constraints, the full alignment of the studied enterprises between the two surveys was not achieved. However, the distribution of enterprises by size was maintained and corresponds to the established distribution of SMEs in the country.

Key Findings

Given the limited scope of this publication, the findings presented here are summarized for the entire set of surveyed SMEs.

The February 2024 study results revealed that, in the past year, **34.9% of SMEs did not implement any innovations at all**, and almost all innovations carried out were minor and of low value. Product and process innovations were the most prevalent types of innovation observed (Fig. 1).

These findings underscore the persistent challenges faced by SMEs in Bulgaria in fostering meaningful and impactful innovation activities. The predominance of small-scale innovations highlights the need for targeted policies and support mechanisms to encourage more substantial and transformative innovation efforts in the sector.

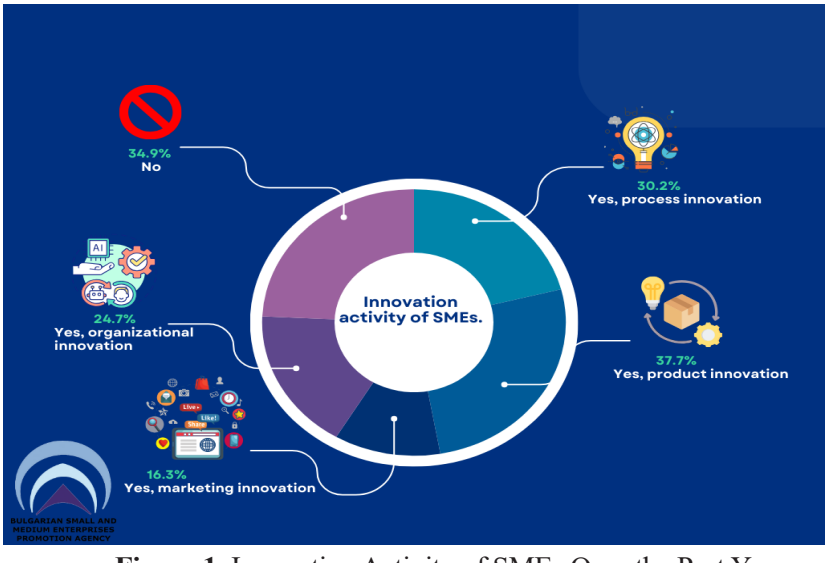

Figure 1. Innovation Activity of SMEs Over the Past Year
Source: BSMEPA

The November 2024 survey results reaffirm that innovation activity among SMEs in Bulgaria remains low. A significant portion of innovations are minor and of limited value. Notably, **42.9% of SMEs reported no innovations** during the past two years.

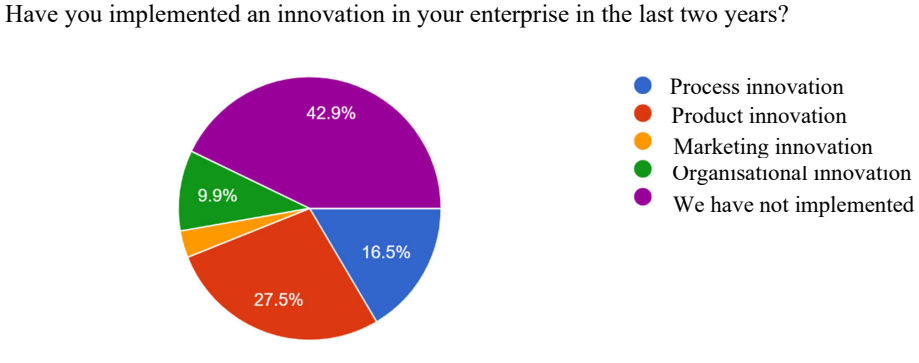

Figure 2. Innovation Activity of SMEs Over the Past Two Years
Source: BSMEPA, November 2024

As illustrated in **Figure 2**, the primary focus of SME innovation efforts over the past two years has been on **product innovations (27.5%)**, while only **16.5% of SMEs** engaged in process innovations.

This trend may reflect not only a **lack of sufficient funding for investment in new technologies** but also an **unexpectedly positive self-assessment by SME representatives** regarding their technological equipment. According to the survey:

– **50.5%** of respondents rated their technological equipment as "adequate," and

– **30.8%** considered it "modern" (Figure 3).

These perceptions could explain the relatively limited emphasis on process innovations, as SMEs may not perceive an urgent need to upgrade their technology further.

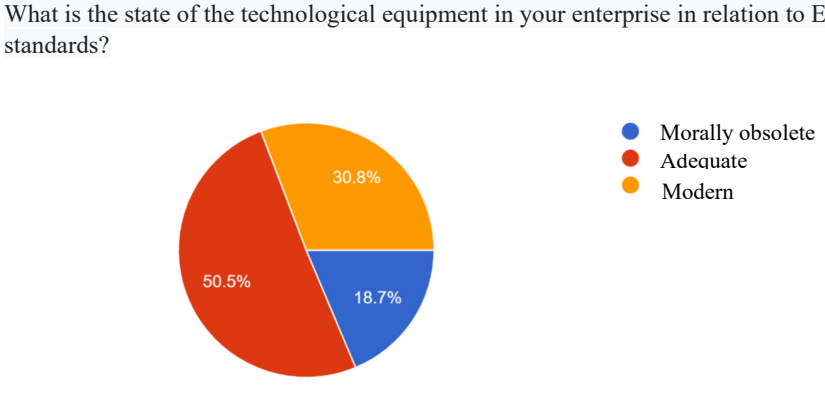

Figure 3. SME Technology Equipment Appraisal Assessment.
Source: BSMEPA, November 2024

The survey results provide grounds to conclude that the main factors hindering the innovation activities of SMEs in Bulgaria are the lack of qualified personnel and the shortage of financial resources. The surveyed SME representatives specifically point to the lack of skilled labor as their enterprises' main problem. This issue was identified by **80.2%** of respondents, marking a significant increase compared to the **61.9%** reported in the previous survey conducted at the beginning of 2024. The lack of sufficient financial resources for introducing innovations was also mentioned as a difficult-to-overcome problem by **50.5%** of respondents, compared to **47%** in the previous survey. At the same time, SME representatives have clearly expressed their understanding of the need to invest in new initiatives and innovations as important conditions for achieving competitiveness and sustainable business growth. In the February 2024 survey, **23.3%** of respondents were willing to invest more than **500,000 BGN** in their businesses over the next three years, while

34.4% were willing to invest between **150,000 and 500,000 BGN**. However, they indicated that they could not implement these intentions due to insufficient financial means to realize them. The answers to the survey questions show that, in fact, the financial capabilities of SMEs to make the necessary investments are insufficient. For example, **74%** of respondents said they could only provide between **10% and 30%** of the required financial resources (Fig. 4).

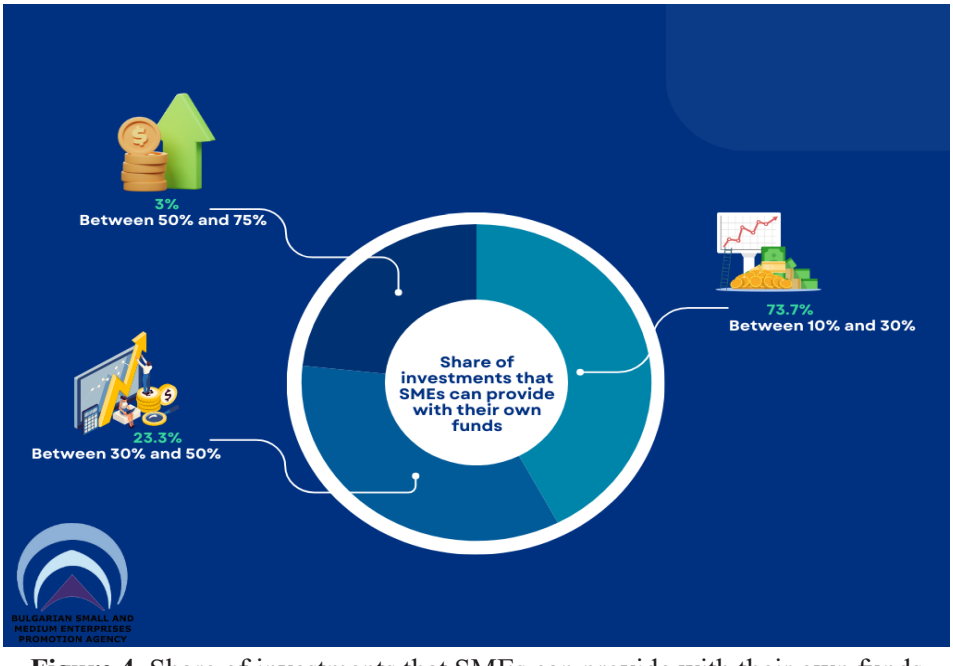

Figure 4. Share of investments that SMEs can provide with their own funds
Source: BSMEPA, November 2024

The shortage of financial resources and the lack of skilled labor have also had a negative impact on the digital transformation of Bulgarian SMEs. This process, which involves the introduction and use of new technologies, digital tools, online platforms, digital data for automation, and decision-making, is crucial for improving their competitiveness and development in the modern environment (Krushkov, Zayakova-Krushkova 2024; Papagalska 2024). SMEs are falling behind in this process, which requires continuous efforts to introduce and use digital technologies and services and enhance the workforce‘s qualifications. According to The Digital Economy and Society Index (DESI), prepared by the European Commission (European Commission, DESI, 2022), our country, including SMEs, has ranked low in the index in recent years. This is particularly true regarding broadband

internet, digital skills, and the use of digital public services. For 2022, Bulgaria ranked **26th** out of **27 EU member states** with a score of **37.7 points**, while the EU average was **52.3 points**. The significant gap between Bulgaria and the EU average is also evident from the values of the constituent indicators for the level of digital transformation, according to the DESI 2023 dashboard for the Digital Decade (European Commission, DESI 2023).

The percentage of the population with at least basic digital skills in Bulgaria is **31.18%**, while the percentage with higher-than-basic digital skills is only **7.82%**. These percentages are far below the EU averages of **53.92%** and **26.46%**, respectively. The percentage of ICT specialists among all employed in Bulgaria is **3.80%**, compared to **4.60%** in Europe, while the percentage of graduates in ICT as a share of all graduates is **4.90%** in Bulgaria, compared to **4.20%** in Europe (Digital Transformation of Bulgaria for the period 2020 – 2030).

Regarding SMEs in Bulgaria, the DESI 2023 dashboard for the Digital Decade evaluates that they significantly lag behind the EU average in their digital transformation. It is reported that the percentage of SMEs with at least a basic level of digital intensity is **47.20%**, compared to the EU average of **69.10%**, while the percentage of those using electronic data exchange is only **21.80%**, compared to **38.00%** for the EU. Only **12.90%** of Bulgarian SMEs use social media in their business, compared to the EU average of **29.30%**. Only **7.00%** of Bulgarian enterprises use big data in their business, while the EU average is **14.20%**. Just **9.90%** use cloud technologies in their business, compared to **34.00%** in the EU. The percentage of Bulgarian enterprises using AI in their business is **3.30%**, compared to **7.90%** in the EU.

The percentage of Bulgarian companies using electronic invoices in their business is very low at **10.00%**, compared to **32.20%** in the EU. Only **11.30%** of Bulgarian companies sell online, and **3.70%** sell online to other countries. For the EU, these figures are **19.10%** and **8.70%** respectively. The e-commerce turnover of Bulgarian enterprises, as a percentage of their total turnover, is **4.70%**, compared to the EU average of **11.30%**.

Similar conclusions about Bulgaria's significant lag behind the EU average in terms of digital transformation have been drawn in the World Bank's Digitrans Project – Gaps and Opportunities: State of Firms' Digitalization in Bulgaria, Poland, and Slovakia, Country-specific reports on Programs, Institutions, and Barriers, 2023. It is noted that Bulgarian companies have the lowest level of digital intensity among all EU countries. More than 50% of Bulgarian firms have very low digital intensity, which measures overall technology adoption by companies. Bulgaria has the lowest share of firms with a high digital intensity index – only **16%**, compared to the EU average of **29%**. This places Bulgarian firms at the region's bottom of the digitalization scale. This trend is observed across all company sizes and sectors, indicating that the delay in adopting and using digital technologies in Bulgarian business is widespread.

Additionally, SMEs of different sizes show significant differences in their digital maturity. Small companies with 5 – 19 employees have a much lower technology adoption index. In contrast, medium-sized companies with 20 – 99 employees have a higher index, suggesting a greater tendency to adopt modern technologies. Empirical evidence shows that the differences in technology adoption for general business functions across sectors are insignificant.

The World Bank's study found that Bulgaria companies tend to use basic and slightly advanced technological methods to perform general tasks. Bulgarian businesses primarily distribute their goods and services directly, including physical means, phone calls, or email communications. Conventional techniques are used to ensure quality, while computer software is mainly used for functions like planning, production, service delivery, and procurement. For administrative tasks, such as accounting, human resources, and others, companies use a combination of specialized software and standard applications. They often use online banking services or cash transactions for their financial operations.

The application of digital technologies varies significantly across different business functions. The areas where digital technologies are most widespread are business administration (in **83.7%** of companies) and payment methods (**87.4%**). The use of modern digital tools is weakest in quality control, with fewer than one-third of companies in Bulgaria adopting such technologies. The percentage of companies using digital technologies for production or service planning is **60.8%**, for procurement and supply is **49.6%**, for sales is **36.4%**, and for marketing and product development is **38.1%**.

Overall, the data show that the percentage of completely non-digitalized companies in the country is relatively low at **11.3%**, indicating a gradual reduction in dependence on manual or visual technologies alone. Using advanced digital technologies across the full spectrum of business operations, fully digitalized companies make up **37.7%** of Bulgarian companies, which is a promising indicator of the nation's digital maturity.

The survey conducted by the Executive Agency for the Promotion of Small and Medium Enterprises (BSMEPA) in November 2024 confirmed the finding that Bulgarian SMEs have a low level of digitalization and lag behind in the adoption and use of digital technologies. Digitalization is primarily observed in some administrative and accounting activities. A large proportion of SMEs have an electronic signature for their managers (**87.9%**), as well as a company website (**78%**). They frequently use online banking services and financial transactions (**61.5%**) (Fig. 5).

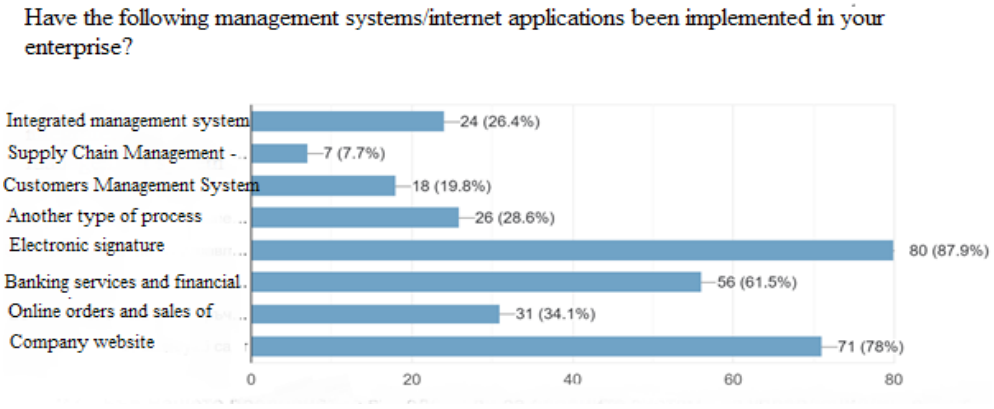

Figure 5. Assessment of the degree of digitization of SME management
Source: BSMEPA, November 2024

The data analysis regarding the state of the innovation system in Bulgaria, digital skills, and the level of digitalization in businesses shows lagging in many aspects compared to other EU countries. Despite some positive results, Bulgaria remains significantly below the EU average in almost all indicators. This, in turn, negatively impacts innovation activities and SMEs' adoption of modern, high-performance technologies.

Conclusion

The publication presents summarized results on the innovation activity of SMEs and the main factors hindering it. These results are based on empirical research by the Executive Agency for the Promotion of Small and Medium Enterprises (BSMEPA) and European and global assessments.

It is concluded that SMEs in Bulgaria lag behind the EU average in innovation. The gap in digital skills and the level of digitalization in business is especially large. This lag has led to slower adoption of new technologies and processes, negatively affecting the overall development of businesses and the country. The main factors hindering the accelerated introduction of innovations in SMEs are related to the underdeveloped innovation environment in the country, the lack of qualified specialists, and their insufficient financial resources. To improve the innovation capacity of SMEs, it is necessary to increase investments in research and development, encourage collaboration between academia and business, and create a supportive regulatory and financially incentivizing environment.

The presented results can be useful for properly directing the efforts of government bodies, including BSMEPA, and managers to stimulate the development of SMEs and innovation within them.

REFERENCES

ALEKSANDROV, A., 2024. Innovation, Technical Progress and Economic Development. *Strategies for Policy in Science and Education-Strategii na Obrazovatelnata i Nauchnata Politika*, vol. 32, no. 1s, pp. 26 – 37. DOI:10.53656/str2024-1s-2-inn.

BSMEPA, February 2024. *Results of a national survey among Bulgarian SMEs*.

BSMEPA, October-November 2024. *Survey among Bulgarian SMEs*. *Digital Transformation of Bulgaria for the period 2020 – 2030* (Digital Skills and Jobs Platform).

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT / The World Bank, 2023, *Gaps and Opportunities: State of Firms' Digitalization in Bulgaria, Poland, and Slovakia*, Digitrans Project – Output 2. *Country-specific reports on Programs, Institutions, and Barriers*.

KRUSHKOV, N. & ZAYAKOVA-KRUSHKOVA, R., 2024. Competitiveness as a Result of Creativity and Innovation. *Strategies for Policy in Science and Education-Strategii na Obrazovatelnata i Nauchnata Politika,* vol. 32, no. 1s, pp. 7 – 25. DOI: 10.53656/str2024-1s-1-com.

OECD and Eurostat, 2005. *Oslo Manual*.

PAPAGALSKA, D., 2024. Knowledge Management and Intellectual Property in the Organization. *Strategies for Policy in Science and Education-Strategii na Obrazovatelnata i Nauchnata Politika*, vol. 32, no. 1s, pp. 131 – 138. DOI:10.53656/str2024-1s-10-kno.

VELEVA, S. & VELEV, M., 2023. The role of innovation for post-crisis recovery of small and medium-sized enterprises. *Strategies for Policy in Science and Education-Strategii na Obrazovatelnata i Nauchnata Politika*, vol. 31, no. 3s, pp. 117 – 125. DOI: 10.53656/str2023-3s-9-inn.

VELEVA, S. & TSVETANOVA, A., 2020. *Business Model Innovation*. Sofia: Softtrade Publishing. ISBN 978-954-334-230-3 (in Bulgarian).

Websites

European Commission, *Digital Economy and Society Index (DESI) 2022* (https://digital-strategy.ec.europa.eu/en/policies/desi).

European Commission, *DESI 2023 dashboard for the Digital Decade* (https://digital-decade-desi.digital-strategy.ec.europa.eu/datasets/desi/charts).

European Innovation Scoreboard 2024 (https://ec.europa.eu/assets/rtd/eis/2024/ec_rtd_eis-country-profile-bg.pdf).

WIPO, 2024. *Global Innovation Index – GII* (https://www.wipo.int/en/web/global-innovation-index/2024/index).

✉ **Dr. Boyko Takov, Assist. Prof.**
Intellectual Property and Technological Transfer Department
Business Faculty
University of National and World Economy
19, December 8th St.
1700 Sofia, Bulgaria
E-mail: boyko.takov@unwe.bg