

Innovation.bg

Innovation.bg is the flagship initiative of ARC Fund.

- The *Innovation.bg* report provides annual assessments of the Bulgarian economy's innovation performance and of the innovation system's current status and development prospects. *Innovation.bg* 2020 focuses on the strategic framework of the European Commission for the programming period 2021–2027 with its priorities and measures for a more innovative and greener European economy. The report analyses the policy of the Bulgarian government for supporting competitive businesses in the context of the growing challenges on the global stage.
- The *National Innovation Forum* is a platform for exchange of ideas and cooperation among the government, the business community and research organizations. It enhances the performance of Bulgarian companies and boosts the innovation potential of the economy by promoting the introduction of new products and technologies and by facilitating business contacts with European partners.
- The *Innovative Enterprise of the Year* contest is open to participants from all sectors of the industry nationwide. The award acknowledges innovative enterprises which have developed new, or have significantly improved their existing products, services or processes over the last three years.

Innovation.bg 2020

Innovation.bg is the Applied Research and Communications Fund's major instrument for shaping the national innovation policy agenda. It combines several components which offer expertise, own policy building and impact assessment know-how.



Since 2004, the *Innovation.bg* report has been presenting a comprehensive annual performance assessment, which provides independent analysis of the national innovation system and the innovation performance of the national economy. *Innovation.bg* applies its own original methodology to assess the degree of business innovation by type and the degree of innovativeness of products and processes. The report evaluates Bulgaria's innovation potential in five fields:

- 1) **Gross Innovation Product** – reviews the results of the national innovation system, the main innovation targets of the enterprises and the problems they face in their innovation activities.
- 2) **Entrepreneurship and innovation networks** – outlines the characteristics of two major sources of innovation in the Bulgarian economy – the setting up of new enterprises and the participation of Bulgarian producers in national and international value chains for the development of new products and services.

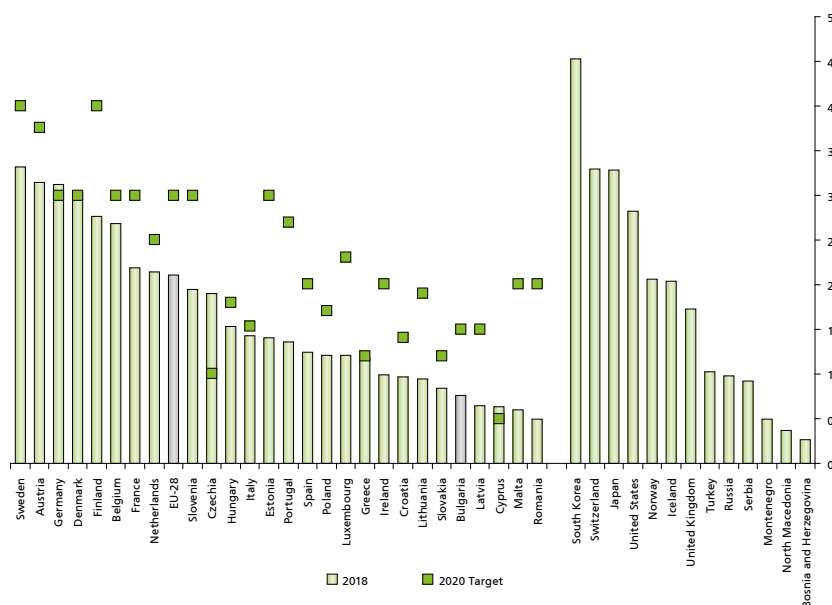
3) **Investment and Financing of Innovation** – considers the role of foreign direct investment and the import of R&D products and knowledge as well as the available instruments for R&D investment.

4) **Human capital for innovation** – reviews the available human resources for the adoption of foreign and the creation of local innovation in the economy.

5) **Information and communication technologies (ICT)** – analyzes the existing ICT infrastructure as an R&D catalyst.

The leading theme of *Innovation.bg 2020* was the strategic framework of the European Commission for the programming period 2021–2027 with its priorities and measures for a more innovative and greener European economy. The report focused on the policy of the Bulgarian government for supporting competitive businesses in the context of the rising challenges on the global stage.

Fig. 1. R&D spending as share of GDP – 2018 and 2020 EU Member States' targets



Source: Eurostat, 2020.

In the year marked by COVID-19, a number of Bulgarian companies managed to gain from the opportunities a crisis provides. The need to optimize production, ensure a safe working environment and create new products in response to changing demands led companies to implement new business models, improve their product portfolio, and launch innovations in the workplace.

In the past year, about 58% of companies implemented innovations and over 30% of those who had refrained from innovating,

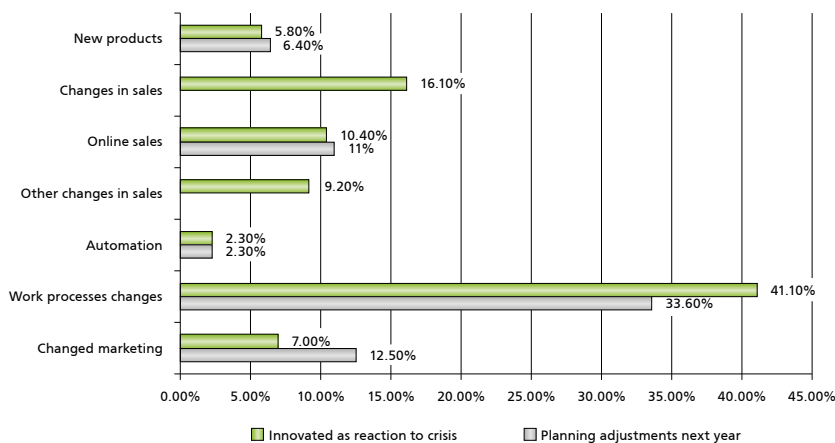
planned to do so in the following year. According to the data from the survey of innovation activity of enterprises in Bulgaria INA-5, which the Applied Research and Communications Fund has been conducting since 2004, if all intentions are realized, 70.4% of enterprises will innovate in 2020–2021, which corresponds with the findings from the post-crisis period in the years after 2008.

Innovative Bulgarian companies have actually benefitted from the crisis at the inter-

national level. This finding has important policy implications. Instead of recognizing such trends and supporting them in order to strengthen their positive effect on the country's economy, though, the Bulgarian government has started to transform funds intended to support innovation under the

Innovation and Competitiveness Operational Program into "support for all". In the medium term, such solutions may hinder the growth of innovative Bulgarian companies by limiting the number of people they could hire and the size of payment they could offer to their staff.

Fig. 2. COVID-19 crisis impact



Source: INA-5, Applied Research and Communications Fund, 2020.

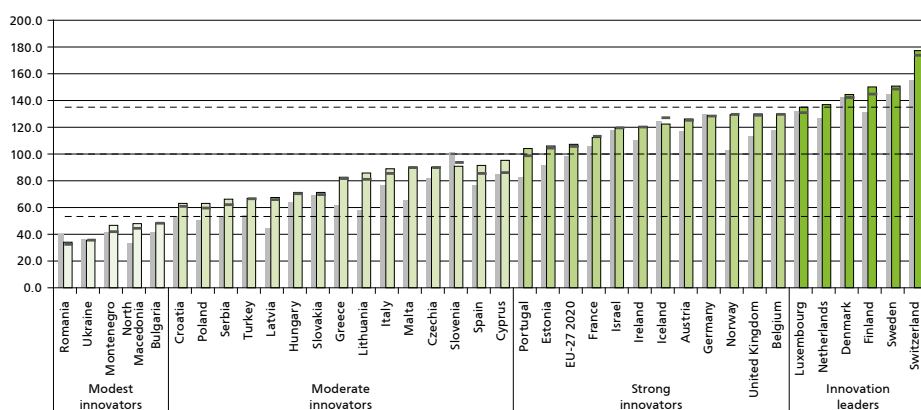
The crisis has affected both the manufacturing and the service sector. The education system in Bulgaria went through a shocking change with the outbreak of the COVID-19 pandemic in March 2020 and the forced transition of all educational institutions to online schooling. This unanticipated development drew public attention to the much-discussed lag in the introduction of teaching and learning methods appropriate for the digital age. It seems that the education system now faces the challenge of building upon and stimulating this change to achieve a full-fledged digitalization of the educational process. The latter would require a profound shift in the type of educational content.

In 2020, the second programming period of Bulgaria's full membership in the EU came to an end. A number of *European Innovation Scoreboard* indicators, though, show that innovation-wise Bulgaria has not made any

progress. The country remains in the group of modest innovators, despite the goal it has set to increase R&D spending as a share of the GDP to the level of 1.5% by 2020 and to move up into the group of moderate innovators.

Patent activity in Bulgaria reached another ten-year peak in 2019 (181 patents were awarded to Bulgarian individuals and entities). The number of foreign patents amounted to 2,624, the majority of which (99.63%) were issued by the European Patent Office (EPO) and are valid in Bulgaria. With a few exceptions, within the surveyed period individual-patent holders remain leaders in the structure of patent activity in Bulgaria. For 2019, their share was 40%, and for the last 20 years – 57%. Despite the growth of patents granted to businesses and the Bulgarian Academy of Sciences (BAS) (the leading public sector institution in this area), individuals continue to play a

Fig. 3. Performance of European innovation systems



Source: *European Innovation Scoreboard, 2020.*

key role, which has grown once again in the last four years.

The COVID pandemic has also influenced entrepreneurial activity. Major changes have taken place in terms of access to finance, the structure of the portfolio of financial instruments and the main guidelines for their spending. The government's financial measures were mainly aimed at overcoming the negative effects of the crisis, including support to companies from the worst affected economic sectors and the laid-off employees, in some cases at the expense of initiatives for the promotion of innovation and entrepreneurship.

Currently, the need for social entrepreneurship of all kinds is greater than ever before. It is a way to quickly respond to the unprecedented circumstances, provide support to the unemployed or families on the poverty line, and design technological solutions to emerging problems related to the digitalization of business processes and social life.

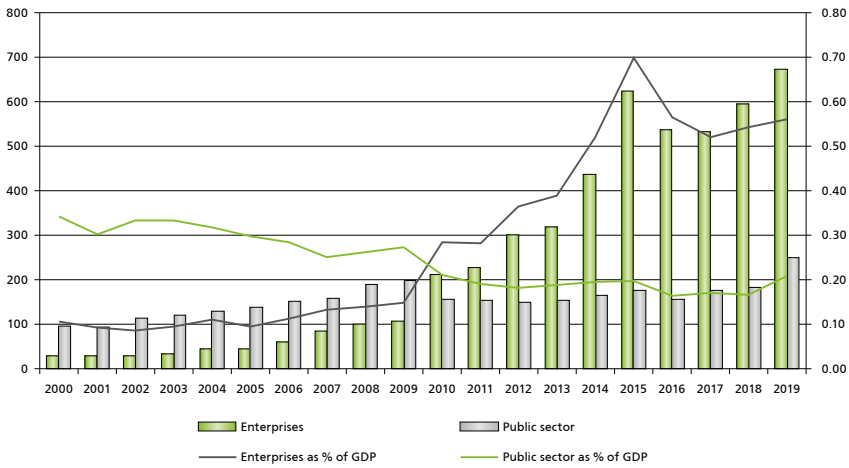
In 2019, total R&D expenditures amounted to BGN 1,002 million, or 0.84% of the GDP. Investments in the Bulgarian research sector continued to grow steadily both in absolute terms (21% increase on an annual

basis) and as a share of the GDP (11% increase on an annual basis). After the decline in 2016 and 2017, all R&D sectors improved, but Bulgaria is still a long way from its 2020 national target (set in 2014) of 1.5% in terms of R&D expenditure as a share of the GDP.

The largest R&D spending in 2019, as in previous years, was in the business sector (BGN 673 million, or 0.56% of the GDP), which is a 13% increase from the previous year and within the normal change for the sector in recent years. Although the business sector made record R&D investments in 2019, their total volume remained many times as small as the investments of an average global company.

In 2019, Bulgaria was among the fastest growing business hubs in Europe, particularly in high-tech employment where the country ranked higher than the average for the continent. The index *Geography of Europe's Brain Business Jobs 2020* of the European Centre for Entrepreneurship and Policy Reform compares 31 European countries by concentration of high-tech jobs. Compared to the base year 2014, Bulgaria ranked 8th with a 28.6% increase in the number of jobs in knowledge-intensive businesses per 1,000 people of the working

Fig. 4. R&D spending, enterprises and public sector, 2000 – 2019



Source: National Statistical Institute, 2020.

age population. Of the 39,400 new jobs created, 73% were in ICT, 12% in the creative industries, 8% in the technology sector, and 7% in services.

The ICT sector is growing every year by all indicators – number of companies, number of employees, share of exports, share of the GDP. In 2020, of the top 100 employer companies, 21 were in ICT, providing 21% of the jobs in the largest companies. The boundaries between ICT and other sectors

such as finance, insurance, retail, security, entertainment, and education have been rapidly blurring. The digital transformation of the various sectors has led to a significant change in the source of added value and this is increasingly related to the introduction of new digital technologies. Healthcare in Bulgaria, however, continues to lag behind global trends in e-health, which is expected to produce a long-term negative impact.

The Sixteenth National Innovation Forum

For a sixteenth year in a row, the **National Innovation Forum** gathered more than 180 representatives of the policy, research and business communities to share their views on Bulgaria’s capacity for resilience through innovation during the past challenging year.

The event was held in an innovative 3D virtual setting, which was custom-designed and animated by MP Studio, the **award winner** for Innovation in the Creative Industries in 2017.

The Forum was supported by the **Enterprise Europe Network - Bulgaria**, the Executive Agency for SMEs at DG GROW of the European Commission, and Konrad Adenauer Foundation’s Sofia Office.

Dr. Ognian Shentov, Chairman of ARC Fund, made a brief review of 2020, noting that the crisis served as a catalyst for incorporating innovation in our daily lives. The two major global trends in this respect were the commitment of national governments to new technologies and innovations, and the rapid



*Dr. Ognian Shentov at the 16th National Innovation Forum,
18 December 2020*

penetration of new technologies in economic and social life. Bulgaria remains a modest investor in R&D, despite the growth of public funding in this area, with Bulgarian companies investing the most in innovative

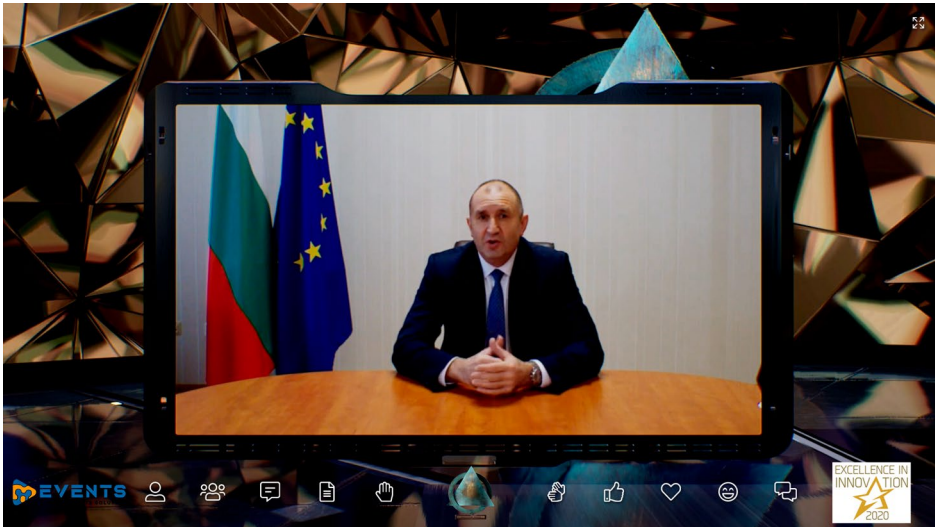
projects. Nevertheless, the source of added value is increasingly shifting towards digital solutions both in the manufacturing industry and the social domain, e.g. education and healthcare.



*Thorsten Geissler, Director of Konrad Adenauer Foundation's Sofia Office,
at the 16th National Innovation Forum*

Thorsten Geissler, Director of Konrad Adenauer Foundation's Sofia Office, underlined that the COVID-19 crisis has greatly affected the job market and a number of people are still at risk of unemployment. 2020 has demonstrated that the world is in dire need of economic resilience. Innovations,

therefore, are one of the major factors for long-term growth and improving quality of life through better work processes, working conditions and supply chains. The key lesson learnt from the crisis is that the human factor is essential.



*Rumen Radev, President of the Republic of Bulgaria,
at the 16th National Innovation Forum*

The President of Bulgaria **Rumen Radev** stated that innovations are a stepping stone towards Bulgaria's full-fledged integration, as they drive forward both the economy and the nation's progress as a whole. In 2020, creativity and the drive to innovate led to inroads into new business niches, moving the country forward in the EU in terms of tech-

nology export as well as know-how in developing digital infrastructure. Nevertheless, the trend for low public investment in R&D in the country was kept, as Bulgaria had allocated 0.5% of the GDP in such operations, way below the 3% of developed economies. Foreign investments remain the main driver of innovation in the country.

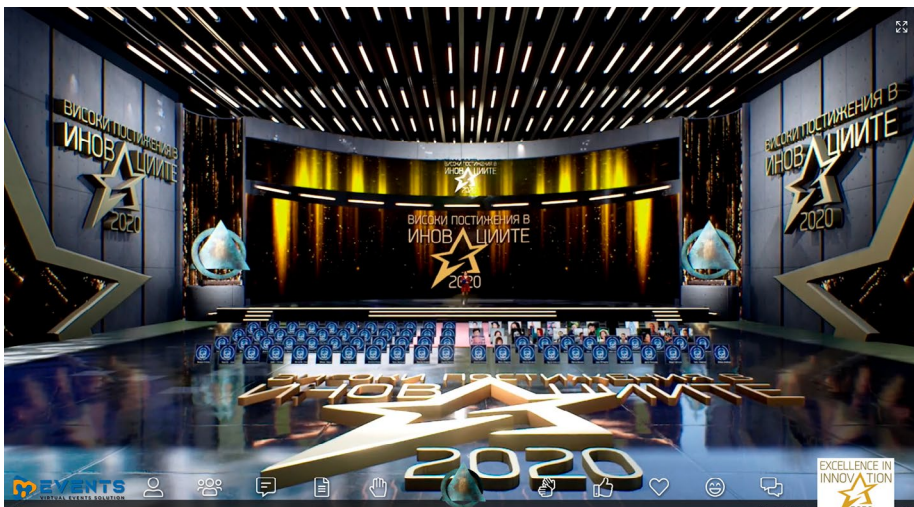


16th National Innovation Forum, Sofia, 18 December 2020

The 2020 Innovative Enterprise of the Year National Contest

Since 2004, **Innovative Enterprise of the Year** awards have been given to Bulgarian companies successfully integrating innovations or scientific achievements in their practice, thus streamlining their activities and improv-

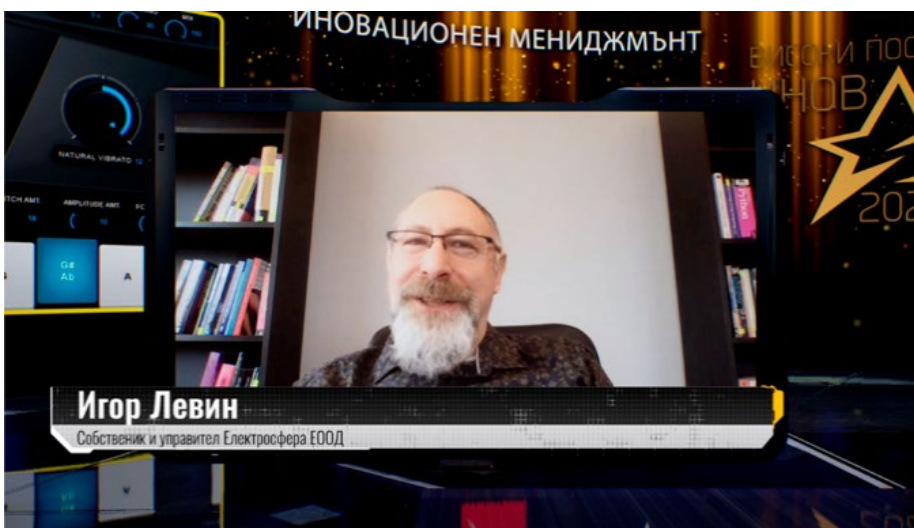
ing their long-term performance. Following a specific methodology, companies are assessed by area of impact of the innovation by an expert group and an external jury.



Digital award ceremony of the Innovative Enterprise of the Year 2020

Sixteen out of 60+ candidate companies from various sectors of the economy reached the final stage of the competition. President Radev granted awards in eight areas of innovation. The winners were selected by a 23-member jury composed of representa-

tives of public authorities, funding organizations, the business, academia and the media. All finalists were also granted the **Excellence in Innovation**® label of the Applied Research and Communications Fund.



Mr. Igor Levin, Elektrosfera Ltd.

With its outstanding innovation management practices in the overall company performance, including in digital innovation, **Elektrosfera Ltd** received the prize in the Innovation Management category. The company has developed a technology for analogue to digital signal transformation and vice versa, which allows for real time

processing and modelling of effects in the music industry. The device is the only one in the world with 64 channels combined in a single tool. With a minimalist interface, it has a multifunctional touchscreen which can be used without necessarily being connected to a computer.

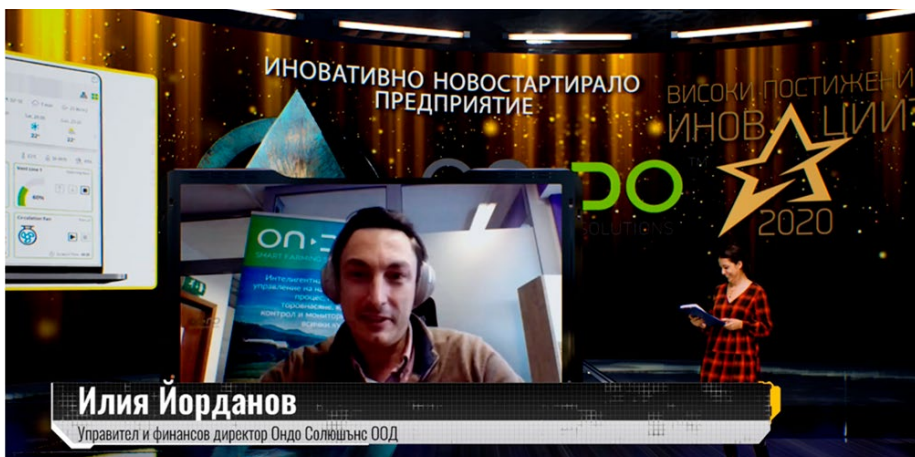


Mr. Hristo Unrumov, Stamh Ltd.

Two special awards were given to the winners in the Market Leadership and Innovative Start-Up categories.

Stamh Ltd, the award winner for Market Leadership, has developed an automated storage system, applicable in the food, furnishing, chemical, automobile and other industries. It places various equipment sets

(racks, pallets, cranes and conveyors) on the storage land and then “closes” them up with walls all around. The warehouse processes are served by the innovate software of Stamh Ltd without any human interaction. Each project is custom-designed to account for the specifics of each client and each particular site. The company has more than 4,500 clients in over 20 countries.



Ondo Solutions, the Innovative Start-Up of 2020, has developed a system for smart automated management of agriculture, allowing precision in irrigation, fertilization, climate control, and monitoring of the crops. The smart solution is equally applicable to small, medium-size and big farms. It con-

sists of hardware installed in the farm, and an integrated specialized software with remote control and easy-to-work-with interface. The company has its systems installed and operational with clients in Bulgaria and North Macedonia and has recently opened an office in South Africa.

Broadening the scene for the Innovative Enterprise of the Year contest participants

National and specialized media made a wide promotion campaign of the 16th edition of the **Innovative Enterprise of the Year contest**. Media partnerships with the Bulgarian National Radio, the Economy magazine, Economic.bg portal, Computer World Bul-

garia, Kaldata.bg, Nauka.bg magazine, Uselite.bg, and the IndustryInfo.bg portal led to more than 70 media publications about the challenges and achievements of leading Bulgarian entrepreneurs and innovators.

Excellence in Innovation Award Ceremony



The **Innovative Enterprise of the Year 2019** contest finalists were awarded the Excellence in Innovation label at a dedicated ceremony hosted by the President of Bulgaria on 30 January 2020. The companies' cutting-edge innovations were assessed by an independent jury based on a set of indicators such as high quality and forefront novelty of the innovation, impact on national and world markets, environment and society, efficiency of the business model.

The ceremony was attended by diplomats from countries that are European and world leaders in the field of innovations such as Germany, Austria, South Korea, Japan, the UK, Israel, and Poland, as well as entrepreneurs, government officials, representatives of business support organizations, and the academic community. The Excellence in Innovation label is designed to enhance the international visibility of contest finalists and catalyze their entry into new markets through the recognition of the high-standard of their innovations.



Rumén Radev, President of Bulgaria (middle), with the awardees and participants in the Excellence in Innovation ceremony.