

## Smart Specialisation and Technology Transfer as Innovation Drivers for Regional Growth

Thursday 3<sup>rd</sup> and Friday 4<sup>th</sup> May 2018

National Palace of Culture, Sofia

### Conference Report<sup>1</sup>

The European Commission's Joint Research Centre,<sup>2</sup> with the Bulgaria Presidency of the Council of the EU, hosted this conference to discuss and commit to place-based innovation as a priority for Europe, with a focus on South-East Europe including the Western Balkans, and an arena for constructive dialogue between institutions and businesses. After setting the scene and presenting the facets of the innovation landscape in Europe, policymakers, scientists, businesses, regional authorities and universities engaged in a debate on good practices and key success factors to inspire countries, regions and stakeholders willing to reap the potential of Smart Specialisation. On this basis and building on a variety of examples from the EU, participants had the opportunity to dig into the policy mix needed to connect actors from the quadruple helix (businesses, academia, government and civil society).

Full details of the conference, including the programme, presentations given, plus video recordings of each session, may be found at <https://ec.europa.eu/jrc/en/event/conference/smart-specialisation-technology-transfer-and-digital-economy>.

#### **1. Plenary Sessions**

Following the Opening and Welcomes, the Opening Statements: Innovation – A Response to Europe's Challenges, listened to the views from the high-level speakers which served also to set the scene for further sessions. These themes were further explored in the following Panel Discussion: The Innovation Landscape in the EU – Main Actors, Initiatives, Tools and Outcomes.

The session on Sharing Experiences I: Innovation in places – Making Smart Specialisation a Success Story highlighted the diverse experiences of the speakers. One aspect stressed was the importance of building partnerships in the region with particular focus on increasing participation in the global value chains. Existing and emerging potentials of Western Balkan economies were also identified. Productivity in the Western Balkans is mainly driven by physical investments, production capability and human capital. It was proposed that Smart Specialisation in the Western Balkans should be linked to Foreign Direct Investment, "big thinking" and structural reforms in order to be relevant.



<sup>1</sup> This Conference Report has been produced for information purposes only. The report does not necessarily reflect the opinions and views of the European Commission nor is it bound by the findings described. Similarly, the European Commission is in no way responsible for any use made of the information provided.

<sup>2</sup> <https://ec.europa.eu/jrc/>

The main points for Smart Specialisation to be a success story in the Western Balkans, as pointed out by the panellists, include good quality data, dedicated governance of the process and greater engagement of businesses. Some of the main problems stressed were that the business and academic environments are not changing adequately and that therefore changes to the educational system are needed, together with the access to open markets and risk financing. Modern educational systems could include greater participation of students in business environments through industry internships. Success factors also include the change of the mind-set within the academia-business dialogue that would require a "dictionary" to improve understanding between scientists and entrepreneurs. Building these essential skills is an important factor for connecting the dots of fragmented innovation systems and for matching the labour demand of societies.

The next session on Sharing Experiences II: Success actors in R&D and Innovation – How Businesses Co-operate with Academia, continued the discussion on this latter academia-business aspect by giving a business-oriented perspective to the implementation of Smart Specialisation strategies. Whilst having different (academic-business) perspectives, there was great potential for innovation synergies. This required understanding the innovation process and the need to more efficiently structure this process, including with the regional authorities. Education and necessary skills sets for innovation from both academia and business were also identified as necessary components.

The plenary session on strengthening research and innovation in Bulgaria discussed how to leverage public investment and spending in order to achieve maximum impact of research and development, how to find synergies and why to mobilise private funds. An overview was first given of the study, "*The research evaluation and performance-based funding system in Bulgaria*," which provides recommendations on how to address the ineffective dispersion of spending in Bulgaria, combined also with very low public investment in research. There was considered to be a clear need to reform the fragmented research system of the country, which currently has over 130 research and higher education institutions receiving insufficient funding. Significantly increased public funding would help but only if it is effectively spent. The study proposed a new research landscape ultimately comprising a maximum of some 10 to 12 research players, including 5 to 6 new 'research universities' and 5 to 6 new 'entrepreneurial universities'.

An outline was then given of the main findings and recommendations of an expert study on "*Reshaping the functional and operational capacity of Sofia Tech Park*," which is the first science and technology park in Bulgaria and co-funded by the European Regional Development Fund. Two complementary scenarios were described with different implications on the degree of governmental involvement and attraction of private investments. An overview of the reforms that the technology park is already undertaking as a consequence of the study served to complement these recommendations. Among the changes is the creation of a two-tier governance system and the intention to work closer with industry.

Finally, the unique structure of the Fund of Funds in Bulgaria was introduced with its ambitions to leverage private investment utilising financial instruments rather than grants. The Fund of Funds is fully owned by the State and is set up to support the implementation of programmes co-financed from the European Structural and Investment Funds (ESIF). A new Technology Transfer Fund is planned, which would invest €33M in diverse beneficiaries in the local innovation ecosystem. The added value is not only the mobilisation of private resources but also the possibility to recycle [part] of the resources and use them again to increase the impact. The investment focus of the technology transfer fund will be the industries identified by the national Smart Specialisation Strategy priorities of Bulgaria.

The opening plenary session on the second day comprised Statements on Opportunities and Challenges in the Region: The Innovation Roadmap, with representatives from all Western Balkan economies. The most relevant aspects were that Serbia's approach to the Entrepreneurial Discovery Process (EDP) is being carefully addressed with a lot of attention to details; a working group on Smart Specialisation is already established in Albania; Kosovo<sup>3</sup> has established a new Ministry for Innovation and Entrepreneurship and an accompanying Council; and the Serbian Innovation Fund will support streamlining investments based on Smart Specialisation priorities with the Chamber of Commerce and Ministry of Economy creating synergies to support these priorities. All Western Balkan representatives declared a readiness to continue or initiate (respectively) the development of their Smart Specialisation strategies.

The final plenary panel session considered Co-ordinating Process and Synergies – Building Multiple Initiatives Together. This provided an international / regional perspective on co-operation in South-East European, particularly for the Western Balkans. These discussions also served to illustrate how the EU can draw on different levels of governance and expertise when developing policy solutions.

In the Closing Remarks, the timeliness of the conference was highlighted. Not only in respect of the new MFF proposal, with a significant increase in the budget proposed for research and innovation, but also on initiatives for the Western Balkans like the recently adopted Strategy and upcoming Summit. The topic of the conference on how to transform research and innovation into growth, jobs and competitiveness for the EU brought together, in a holistic manner, key elements, namely the Smart Specialisation methodology, the use of Technology Transfer as a vehicle to cross the "valley of death" and the enabling capacity of Digital Transformation. Continuous dialogue between stakeholders is another essential aspect, as is co-operation at all levels of governance (local, regional, national, EU and internationally) plus education and human capital. Finally the availability of the support of JRC, including for the Western Balkans, with its expertise and knowledge to support initiatives was re-affirmed.

## **2. Parallel Sessions**

To complement the plenary sessions and provide the opportunity for a deeper-dive, thematic parallel sessions were organised on Smart Specialisation, Technology Transfer and Digital Economy plus a session by the Watify initiative.

### **2.1 Smart Specialisation**

The sessions on Smart Specialisation included speakers with diverse backgrounds – from analytical experts, to governmental officials, university professors and regional economists. The lessons learnt part included an overview of the Smart Specialisation process in Slovenia with an emphasis on "don'ts," such as don't set priorities and conclusions before stakeholder dialogue. The main points of the EDP process should be simple and concrete for true efficiency to be reached. Experiences from the Pomorskie region (Poland) pointed out that the selection criteria for partnerships in the process had to be carefully defined. It included aspects such as reflection on global trends and participation in global value chains. It was stressed that the main difficulties in Smart Specialisation monitoring were about which entities should be monitored, focusing on a few meaningful indicators and data availability. Experiences from JRC emphasised that trust and governance are the obligatory elements for a successful Smart Specialisation process. Also that political ambitions about specific priority domains do not necessarily mean that these priorities should be pursued without further objective analysis and stakeholder involvement.

---

<sup>3</sup> This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

The presence of the Smart Specialisation teams from the Western Balkans provided plenty of opportunities to deepen the dialogues with them on the next steps. The talks were held on both days, with particular focus on the Smart Specialisation teams of Montenegro and Serbia. Additional contacts were made with the representatives of Albania and FYROM on the Smart Specialisation process. Next steps include further commitment of these economies in particular for undertaking the Smart Specialisation process.

## **2.2 Technology Transfer**

At the technology transfer sessions, we learned, among others, that the existence of excellent research is at the basis of technology transfer. In the Western Balkans there are already pockets of research excellence. Technology transfer is still more craft than science, which requires different ingredients, including sufficient funding, trust and skills. Unfortunately, at a number of universities in the region, there is not yet a mindset for driving exploitation of research.

The parallel session on science parks explored different models for designing and managing Science and Technology Parks (STPs) in South East Europe and beyond, including strengthening their role in the processes related to Smart Specialisation – keeping strong relations with government, but also with other stakeholders in the ecosystem. Whilst there are several models for science parks, there is not a one-size-fits-all solution. A few years ago it was the practice to build science parks and incubators in areas where there was no strong research and technology ecosystem. We have now different tools to promote also smaller science parks lined to regional universities. The growing success of the sciences parks in Ljubljana and Belgrade, for example, which started with a degree of public support (funding) and now are self-sustaining with hundreds of companies located at their premises, gives optimism for developing ecosystems in smaller countries, including in the Western Balkans.

The importance of the dense concentration of researchers and companies making up an integrated ecosystem surrounding science parks was emphasised, as well as the building of partnerships, collaborations with national stakeholder and international organisations. It must be noted that in order to increase the wished impact, a balanced approach to the interests of the public and the private sectors is necessary. Successful science parks need to carefully listen to the needs of all stakeholders in the ecosystem, considering that this process is also an important element of the EDP and Smart Specialisation. The session concluded that new technologies and big data require adequate responses from the public sector and legislators in order to remain competitive in Europe.

The session on commercialising innovation explored the various challenges and initiatives to support commercialisation of research results. How to utilise research results is not always correctly defined. Building capacities is a challenge for small universities. Global connectivity is necessary, but technology transfer takes place at the local level in the first place. Similarly important is the development of an entrepreneurial mindset and the need to meet the demands of business. Knowledge created must be transferrable and not all knowledge or technology produced is such. The project *EU4TECH: Technology Transfer Capacity Building for the Western Balkans*,<sup>4</sup> funded by DG NEAR, managed by DG JRC and implemented on the ground by consultants, is aimed at improving the capacity for technology transfer in the Western Balkans, providing a 360 degrees support in five specific components. Targeted support is needed for the region in building up capacities plus pipelines in the ecosystem, including by funding early stage projects. There are pockets of excellence which need to be recognised and supported in a proper way. Factors for technology transfer are interdisciplinarity and internationalisation of the activities and collaboration among stakeholders. The performance in technology transfer does not necessarily measure return on investment, but rather a broader impact shall be taken into account. Here again Smart Specialisation

---

<sup>4</sup> <https://wbc-rti.info/object/project/16913>

is relevant in recognising how to position yourself in the innovation value chain. Research infrastructure must not be doubled or repeated but only build where competitive advantage is present, building upon Smart Specialisation. Also the importance on entrepreneurial education was stressed to ensure development of entrepreneurial culture and mindset in the region of South East Europe.

The session on Funding for Innovation stressed a number of aspects on how to create a stronger impact out of public funding. Building upon a legacy of good technical skills, Bulgaria has made a strong progress in building capacities for venture capital and risk investments. Deep tech and key enabling technologies in Europe have a strong potential and need to be supported by public funds, as opposed to purely digital businesses in the USA. Early technologies [that are not purely based on software] need higher levels of investments plus take longer to develop and commercialise. There is a need to understand the technology in which you are investing. Similarly important is to have the right set of (technical and business) skills, while the investment strategy needs to be adapted to the type of technology.

Angel investor networks are being developed in Europe, but nevertheless still far behind the US in terms of amounts and numbers. There are strong justifications for the public sector to support early stage and Proof of Concept projects. Enabling framework conditions are crucial to enable growth and success of companies. Important is to focus public support on identified gaps. Again, capacities in the demand side of investment are crucial but also capacities of investors. In venture capital the returns of investment are normally not equally distributed and the support must be more concentrated to get maximum impact. Success and growth are not always measured by GDP but by a broader range of indicators, such as transition to higher value added industries, utilising again Smart Specialisation. Key takeaway is that public support will continue to be needed whereas capacities, skills and education both for investees and for investors will remain to be crucial factors.

We learned also what are the various components necessary to set up an innovation fund and the need to concentrate on fewer projects with high potential to maximise returns. We also learned that the main barrier of innovation in the Western Balkans is not solely money, but the lack of bankable innovation projects, therefore skills creation is crucial.

### **2.3 Digital Economy**

Multiple actors (local authorities, business associations, researchers) expressed strong commitment to work together in making the European digital transformation a success. Particular emphasis was put on the disruptive role of Artificial Intelligence (AI).

Digitalisation -together with the rapid uptake of technologies- creates completely new challenges and opportunities for our societies. Within this context, many of the panellists highlighted the importance of: (i) improved education; (ii) adequate digital infrastructure; and (iii) easy access to data. In addition, fragmentation and coordination should be addressed on an EU level in order to make the most out of the transition to digital.

Despite the relevance of the ‘digital’ widely expressed during the conference, there is still a lack of concrete measures to consolidate regional and national strategies. This is an area where the Commission could work hand in hand with regional and national authorities to avoid fragmentation.

On a global scale, Europe cannot realistically lead all developments associated with the digital transformation. Emphasis should therefore be put on retaining its leading role in domains such as robotics.

## 2.4 Watify: Boosting Technological Transformation in Europe

The WATIFY Inspire parallel session took an interactive approach through story-telling and story-listening. It featured five success stories of technological transformation by Printivo, Evrotrust, Trimek, Bächer Bergmann and De Trog. Following a context-setting introduction, these innovative companies shared their experiences in setting up and/or transforming their business through the use of technologies by outlining the challenges, transformation process, resources, measuring of outcomes, lessons learned. These different elements were discussed in groups and then clustered into five distinct categories: *Challenges*, *Transformation Process*, *Resources*, *Measuring of Outcomes* and *Lessons Learned*.

Participants were able to identify four *Challenges* that could determine the ability to undergo technological transformation. The first identified was being able to match tradition with technology, and ensure their compatibility. The next challenges were needing to find the time and ability to mobilize, as well as being able to scale up while maintaining quality at the same time. Lastly, putting together and maintaining a qualified team was identified as a key factor.

The *Transformation Process* discussion centred on breakthroughs, technological development and innovation. The following were identified as contributing factors to the process of technological transformation: education and experience for development; a willingness to try new things possible with the adoption of technology leading to innovation and breakthroughs, including through mistakes; and having the “right” people and team around.

Necessary components for *Resources* were to have the essential people on board, mobilizing necessary resources, financing activities, permissions, and patents. In *Measuring Outcomes* (how, methods, Key Performance Indicators, mechanisms), it was agreed that it is necessary to measure the team, but also measure the minimal valuable product, as well as measure customer and investors’ trust (market validation). By applying these activities to diverse stakeholders, it was agreed that efficiency in processes can be achieved.

Finally, in the *Lessons Learned*, four valuable insights in being able to foster technological transformation were also shared by participants. The ideas ranged from focusing internally on company dynamics to looking at the big picture in terms of fostering innovation. Innovation comes from failures too and it is important to not take failure too seriously. Another facet was that the team is very relevant and most of all “a leader” for the transformation. Additionally, open mindedness was brought up as an imperative for business and a catalyst for transformation. Finally, workshop participants considered that [Europe] is not a Digital Single Market yet: there are national differences and there are not enough investors, which results in innovators going to the US.

WATIFY also had a **Technology Showcase** during the conference. The companies that took part and demonstrated their innovations were:

- **Printivo** a bio-printing company combining cutting-edge bioengineering technology and up-to-date scientific approach. They showcased their creative process by inviting participants to meet with Eve - desktop 3D bio-printer, which has been specialized for the creation of 3D human tissue grafts in any size and conformation - and Adam – their universal bio-ink.
- **VR Express** a virtual reality service provider, creating custom VR content ranging from 360 degree videos and VR animations to interactive experiences. They prepared two VR stations with innovative case studies: manufacturing and mechanical engineering, healthcare, finance, creative industries, construction, tourism, agro-food, and retail.

- **Redborder** an open source solution for traffic visibility, Big Data analytics, and dynamic Cybersecurity. They demonstrated how to implement the Collect-Analyse-Act motto for cyberattacks detection, the definition of Key Performance Indicators for an installation and the customisation of dashboards and reports to support your Security Operational Centre.

### **3. Accompanying Reports**

The event coincided with the publication of the **Supporting an Innovation Agenda for the Western Balkans – Tools and Methodologies**<sup>5</sup> report. This gives an overview of the innovation potential of the Western Balkan economies; presents good practices for the various stages of the Smart Specialisation process in the region; provides a thorough analysis of diverse indicators related to R&D&I capabilities; and offers various tools and instruments for augmenting and utilizing innovation capabilities.

Also promoted at the conference were the **Outcomes of the H2020 Policy Support Facility (PSF) Specific Support study on the research evaluation and performance-based funding system in Bulgaria**,<sup>6</sup> plus a report on **Reshaping the Functional and Operational Capacity of Sofia Tech Park**.<sup>7</sup>

Other publications referred to in the conference were the **Practical Handbook for Regional Authorities**<sup>8</sup> and the **Handbook of JRC Services for Member States**.<sup>9</sup>

### **4. Exhibition "*Putting science at the heart of European policymaking*"**

This exhibition was officially opened during the conference. Its purpose was for the wider public to discover why and how JRC puts science at the heart of European policymaking. The exhibition was curated thematically: fairness and the economy; energy union; nuclear security and safety; migration and demography; air, water and natural resources; and regional policy. The exhibition ran until 19<sup>th</sup> May 2018 and received 1000's of visitors.

\*  
\*       \*  
\*

---

<sup>5</sup> See <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/supporting-innovation-agenda-western-balkans-tools-and-methodologies>.

<sup>6</sup> See <https://rio.jrc.ec.europa.eu/en/file/12365/download?token=7pGkYJTS>.

<sup>7</sup> See [https://ec.europa.eu/jrc/sites/jrcsh/files/report\\_reshaping-functional-operational-capacity-stp.pdf](https://ec.europa.eu/jrc/sites/jrcsh/files/report_reshaping-functional-operational-capacity-stp.pdf).

<sup>8</sup> See <https://ec.europa.eu/jrc/en/publication/brochures-leaflets/practical-handbook-regional-authorities>.

<sup>9</sup> See <https://ec.europa.eu/jrc/en/publication/brochures-leaflets/jrc-services-handbook-national-regional-and-local-authorities-why-and-how-engage-european-commission-0>.