

# Danube Transnational Programme

Project co-funded by European Union Funds (ERDF, IPA)



## Interreg



EUROPEAN UNION

### Danube Transnational Programme

### Smart Factory Hub

**SMART FACTORY HUB - IMPROVING RD AND BUSINESS  
POLICY CONDITIONS FOR TRANSNATIONAL COOPERATION  
IN THE MANUFACTURING INDUSTRY**

## **E-PUBLICATIONS ON REGIONAL DIAGNOSIS REPORTS**

## Executive summary

Within the **SMART FACTORY HUB Project** 10 countries (Austria, Bulgaria, Croatia, Czech Republic, Germany, Hungary, Romania, Serbia, Slovakia and Slovenia) have been selected to show, how they operationalized their **smart specialization strategy and enhance innovation in the context of smart manufacturing**.



Figure 1: The Danube region and 10 survey countries

Benchmark activity will identify synergies within 3 identified smart factory topic areas (i) **Applying novel technologies**, (ii) **Applying effective production processes** and (iii) **Applying effective human resource management systems**.

The benchmark report aims to give common benchmarking overview of National/Regional Strategy for Smart Specialisation (RIS<sup>3</sup>), priorities, indicators, implementation schemes, instruments and initiatives in order to highlight cross-regional differences, diversities, advantages, shortages, possibilities and other factors relevant for future Smart factory model definition.

# To make innovation as a priority for all regions

'Europe 2020' requires policy makers to consider how the different aspects of smart, sustainable and inclusive growth are interrelated. Integrated smart specialisation strategies respond to complex development challenges by adapting the policy to the regional context.

This benchmark report is based on a statistical benchmark and regional mapping reports. The national smart specialization strategy and instruments from each single country give insights to funding schemes, sector trends, project and smart manufacturing solutions providers and production oriented SMEs. On the other hand, the benchmark report includes a bottom-up view on Smart manufacturing through a questionnaire, prepared in the 10 chosen countries and answered by more than 270 SMEs, showing highly interesting state-of-art in this very important sector.

## Strategy Background

All national Strategies are in line with the European Strategy and implemented based on support measures, except Serbia where the national strategy is still being prepared. In the following map the implemented national strategy of each country and policy initiatives are identified

From the survey, the main key message, related to the implementation of the national strategy, was that in the Danube region, the SMEs awareness about the Smart Specialization Strategies and their involvement in preparation is not sufficient, while there are big differences in their awareness and involvement on a country by country level. On the one hand, this may have negative effect on the overall competitiveness of the defined Danube region that based on SMEs and on the other hand it may lead to the increase of the gap between more developed and less developed countries (from the Smart manufacturing viewpoint) in the Danube region.

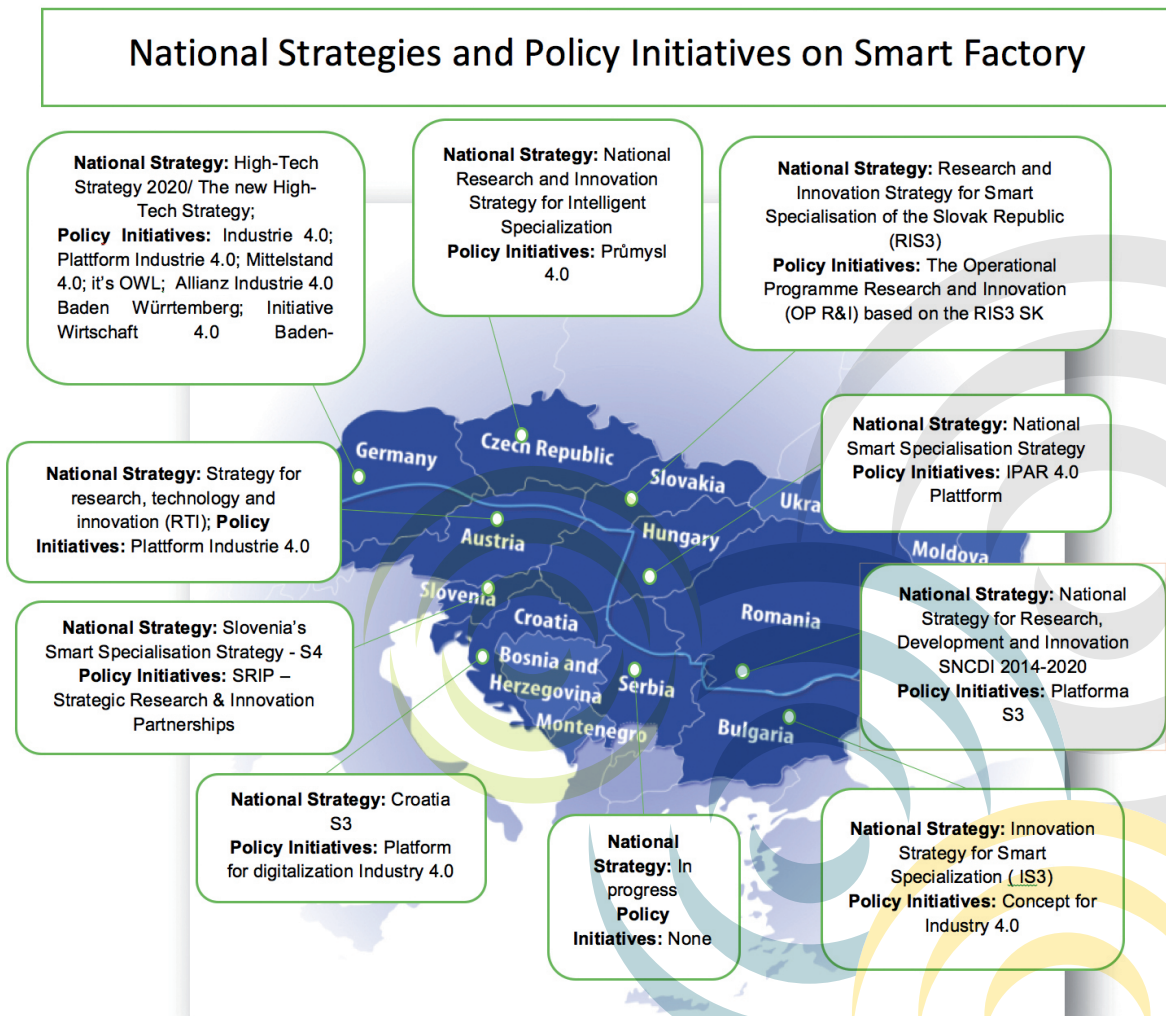
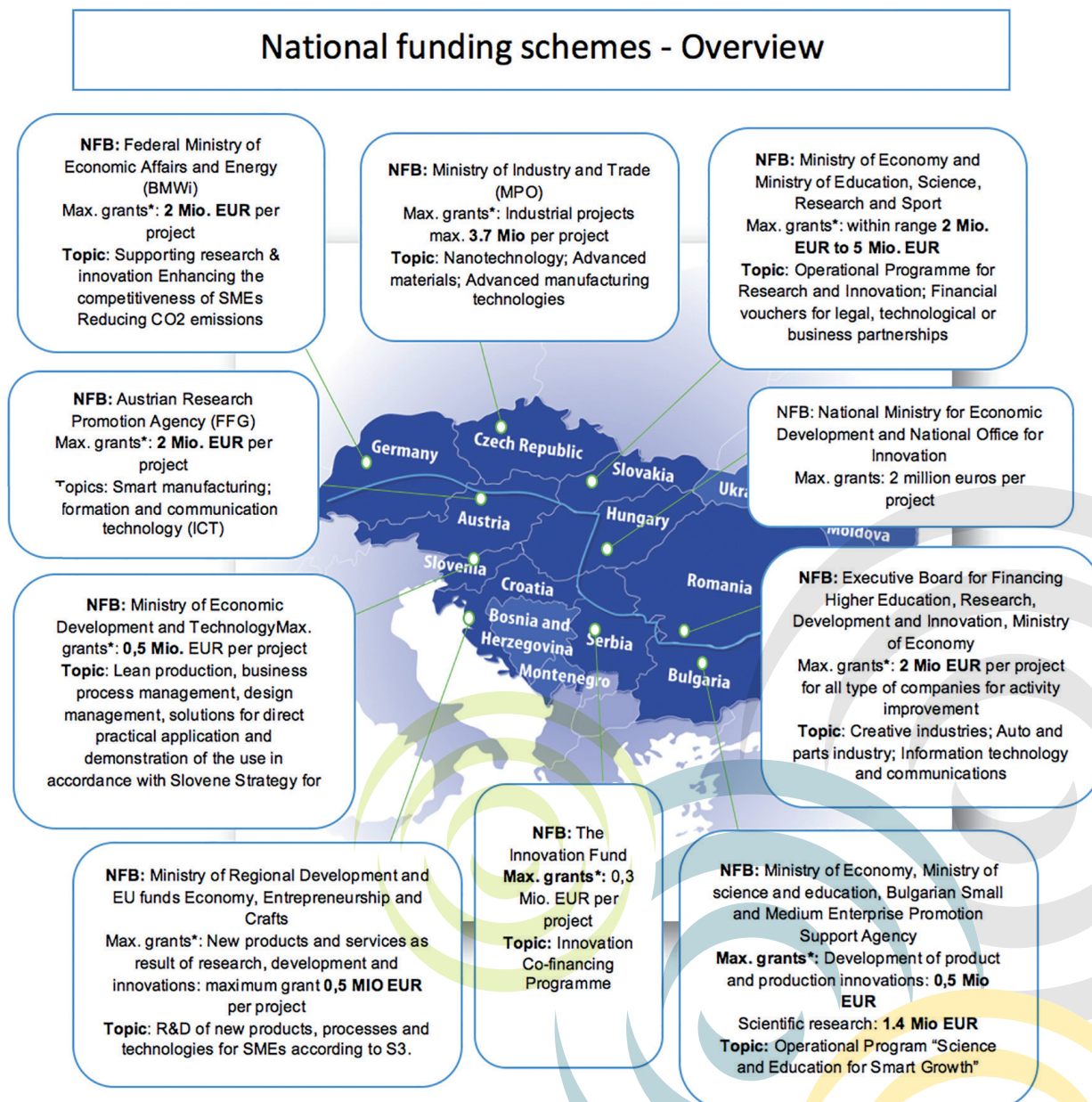


Figure 2: Overview of national strategies and policy initiatives on smart factory

# Challenges

The survey concludes that SMEs in the Danube region are facing challenges in implementation of Smart manufacturing solutions and systems. **These most common challenges are linked to the need for investments and lack of information/knowledge**, which means that the supporting environment shall focus on developing funding support measures and assuring/transferring information, knowledge best practices, concrete solutions, etc.

Each country is endeavouring to support SMEs with special designed funding schemes. The maximum grants given per project is one important indicator for development of sustainable and smart partnership. The highest max. grant can be observed in Slovakia (up to 5 Mio. EUR) and Czech Republic (up to 3,7 Mio. EUR). Germany, Austria and Romania support with max. two Mio. EUR cooperative research projects, followed by Bulgaria with 1,4 Mio EUR for scientific projects. Croatia and Slovenia provide up to 0,5 Mio EUR funding per project.



\*Max. grants: Max grants for cooperative research projects related to smart factory (Call Year 2017)

NFB: National Funding Body

Further details see annex table: Key indicators of national funding schemes related to (max grants, Infrastructure funding, national funding schemes for companies, Topics ...)

Figure 3: Key indicators of national funding schemes related to max grants and topics related to smart factory

# Implementing Technologies

SMEs in the Danube region have been mostly implementing **Smart manufacturing novel technologies or HR management**, while around **40% of the SMEs are currently not implementing any smart manufacturing solutions/methods related to production processes**. SMEs do have plans to become more active in the future, with **data analytics, Next-gen manufacturing systems and smart supply network being the top three areas of interest**.

**Lean manufacturing and 6 Sigma** are considered the most favourite production process optimisation systems, while employee motivation systems and knowledge sharing/transfer are the most frequently selected HR management system to be implemented in the future.

The Smart manufacturing as a topic could be perceived much better among SMEs in the Danube region, therefore this area needs to be **promoted and supported by information campaigns, knowledge transfer, technology transfer and other supporting actions**. Common regional approach would be added value in order to minimize the gap between more and less developed production oriented SMEs from different countries. The Smart Specialization Strategies need to be operationalized efficiently and effectively, in order to increase investments and implementation of the Smart manufacturing technologies and systems.

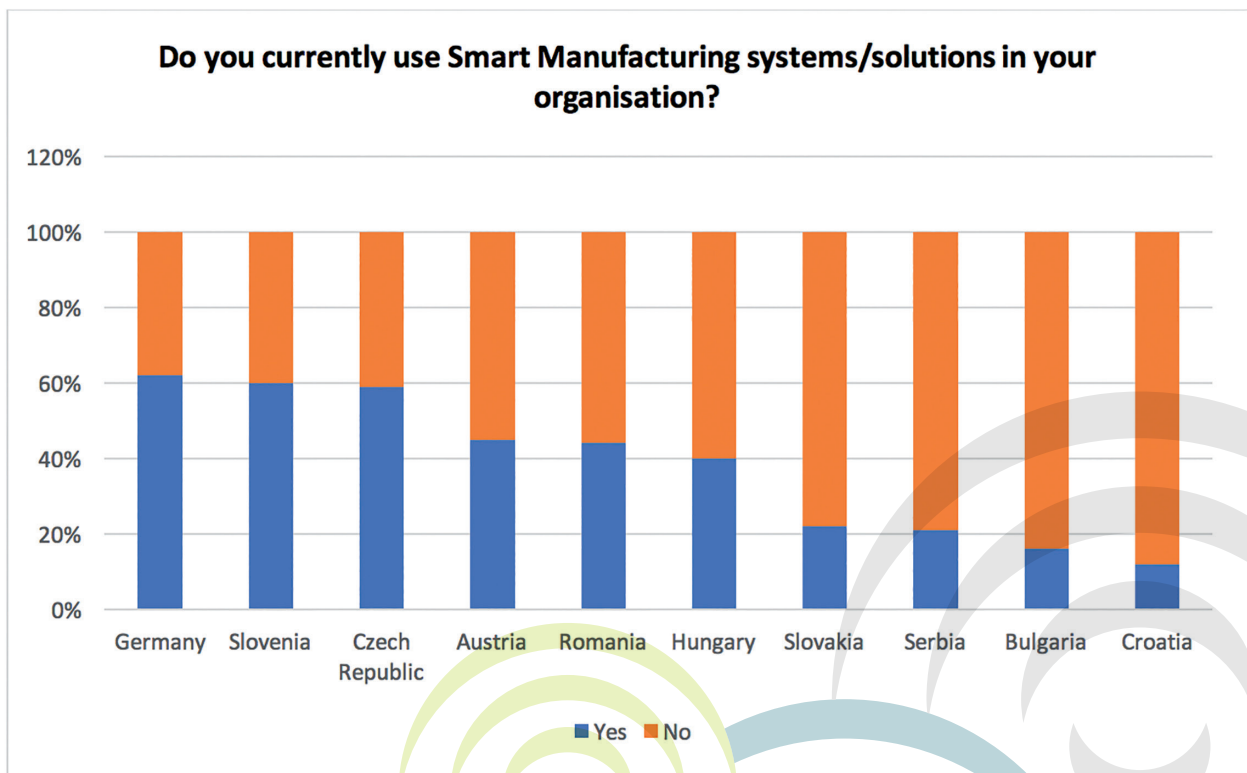


Figure 4: Smart manufacturing systems/solutions implemented or not

## KEY MESSAGE:

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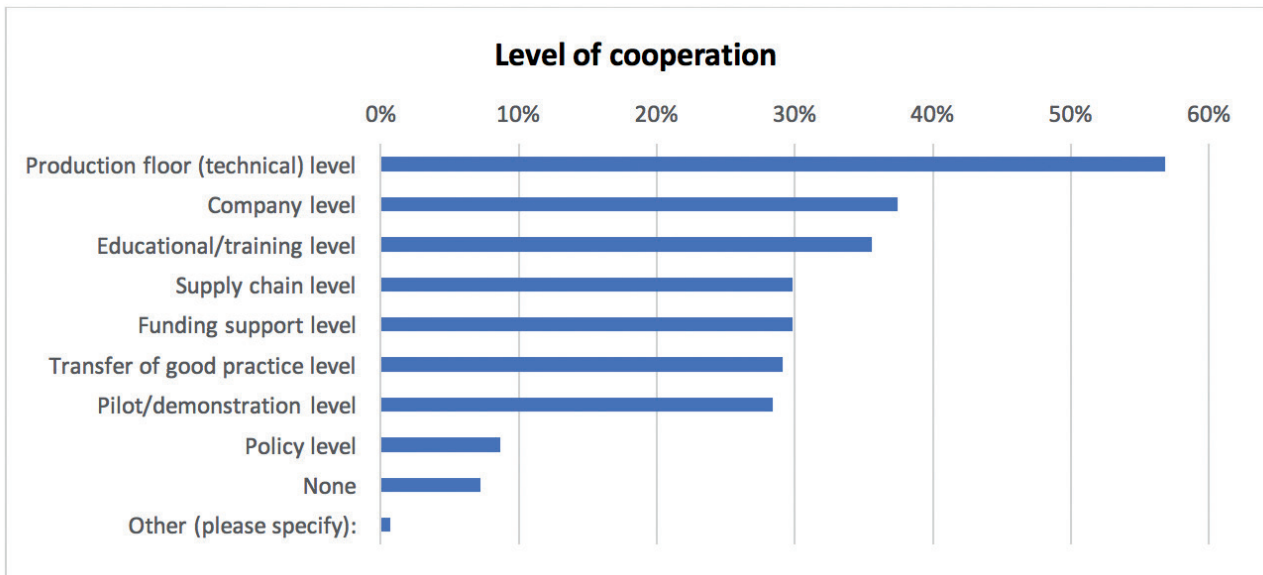


Figure 5: Level of Cooperation

### KEY MESSAGE:

**Almost 80% of SMEs are willing to cooperate in the future, predominantly acting as “receivers” of new technologies and systems. They are mostly interested in the production level (technical view) or company level, education/training level.**

## Conclusions

This benchmark report is based on a statistical benchmark, regional critical factor SME diagnosis reports, and regional mapping reports to the smart specialisation strategy form each single country.

It showed that the defined **Danube region is not a homogeneous region** and it pointed out the difference in the economic state of each country as well. The region consists of economical strong countries and some of them lagging behind in innovation and education. However, in the region, the manufacturing sector plays an important role in Czech Republic, Germany, Hungary, Austria, Slovenia and Slovakia, while in Romania and Bulgaria is this sector under represented.

It is evident that **all countries have a national strategy for smart specialization which are in line with the European Union, except in Serbia**. The strategies were operationalized with support measures, whereas support environment plays a crucial role to translate the strategy for SMEs. However, SMEs have mainly not been involved in development of the Smart Specialization strategy in the Danube region, while also the Strategy is not well recognised by the SMEs.

Furthermore, SMEs are facing variety of challenges when it comes to the implementation of Smart manufacturing technologies, but the most important two are related to investments and lack of information/knowledge. It is likely that there is a correlation between lack of information and cost/investment related to implementation. In eight from ten countries, SMEs stated lack of information as the main obstacle, followed by cost/investment related to implementation, or vice versa.

This show, that more qualified workers need to apply Smart Manufacturing technologies. On the other hand, attendants have marked that they cannot afford devices related to Smart Technologies, so the lack of budget plays an important role in the non-usage of these technologies.

The report summarizes, that the **most influential areas for increasing SME's competitiveness in the future are** (i) **product quality**, (ii) **manufacturing costs**, (iii) speed of production and (iv) coordination with customers.

The project SMART FACTORY HUB tries to address these needs by improving competences and skills among the participation organisation and transferring knowledge in order to design and set-up cooperation and learning hub for technology alliances, as well as policy hub for policy recommendations.



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If you are interested in the detailed documents,  
find them on our homepage:

<http://www.interreg-danube.eu/approved-projects/smart-factory-hub>  
under the project outputs.

