R & D & I in Slovakia - Digital Slovakia and creative industry
Systémová podpora V&I - Digitálne Slovensko a kreatívny priemysel

DEPUTY PRIME MINISTER'S OFFICE
FOR INVESTMENTS
AND INFORMATIZATION
OF THE SLOVAK REPUBLIC

Európska únia

Objectives of the Strategy for Smart Specialisation

RIS3 is a strategy that, through innovation, science and technological development, creates the prerequisites for sustainable growth of the Slovak Republic's competitiveness.

- Enhance the integration and anchoring of key industries that increase local added value through the cooperation of local supply chains and promoting their cross-networking
- Increase the contribution of research to economic growth through global excellence and local relevance
- Create a dynamic, open and inclusive innovative society as one of the prerequisites for improving the quality of life
- Improve the quality of human resources for innovative Slovakia

Research and Innovation Strategy for Smart Specialisation of the Slovak Republic (RIS 3)

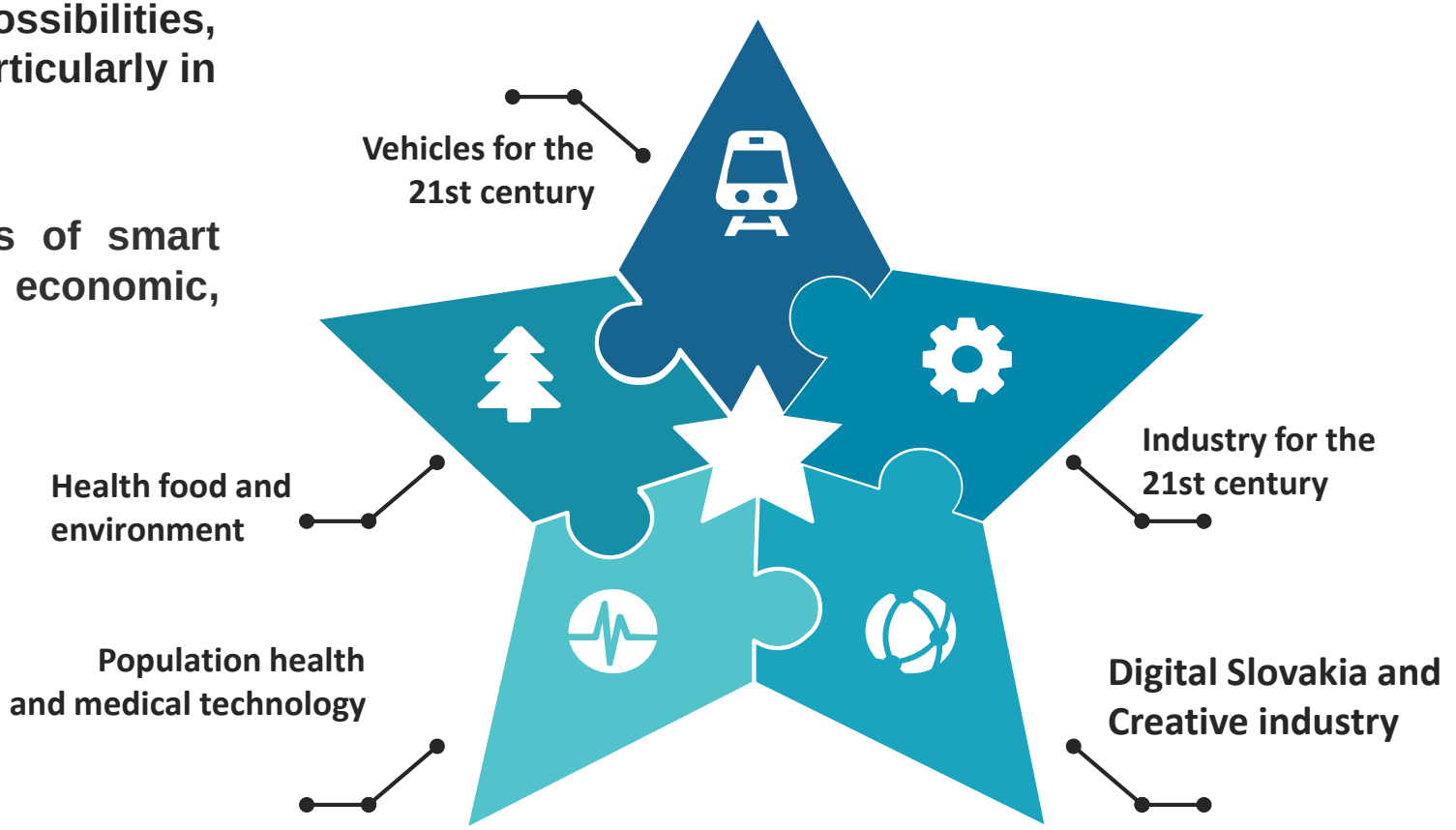
as a process concentrated on creating conditions for utilizing the domestic growth potential in order to gain competitive advantages by setting priorities and areas of support

- **RIS 3 is the main strategic document of R&D&I in connection with economy and society in Slovakia**
- **Ex-ante conditionality of European Structural and Investment Funds**
- **ESIF´s Operational Program Research and Innovation with 2,27 bn. EUR (EU source) + 1,44 bn. EUR (national sources) important tool to fulfill RIS 3 + other relevant OP´s + public resources of the state budget 567 bn. EUR till the year 2020 prediction 697 bn. EUR**
- **OP R&D aimed at support of research, development and innovation; strengthening competitiveness of SMEs (and other OP´s for another synergic and complementare goals)**

Implementation Plan of RIS 3

Main principle of RIS 3: „entrepreneurial discovery process“ defines in more detail the priority areas (taking into account the reality, possibilities, needs and potential of the economy, particularly in the field of research and innovation).

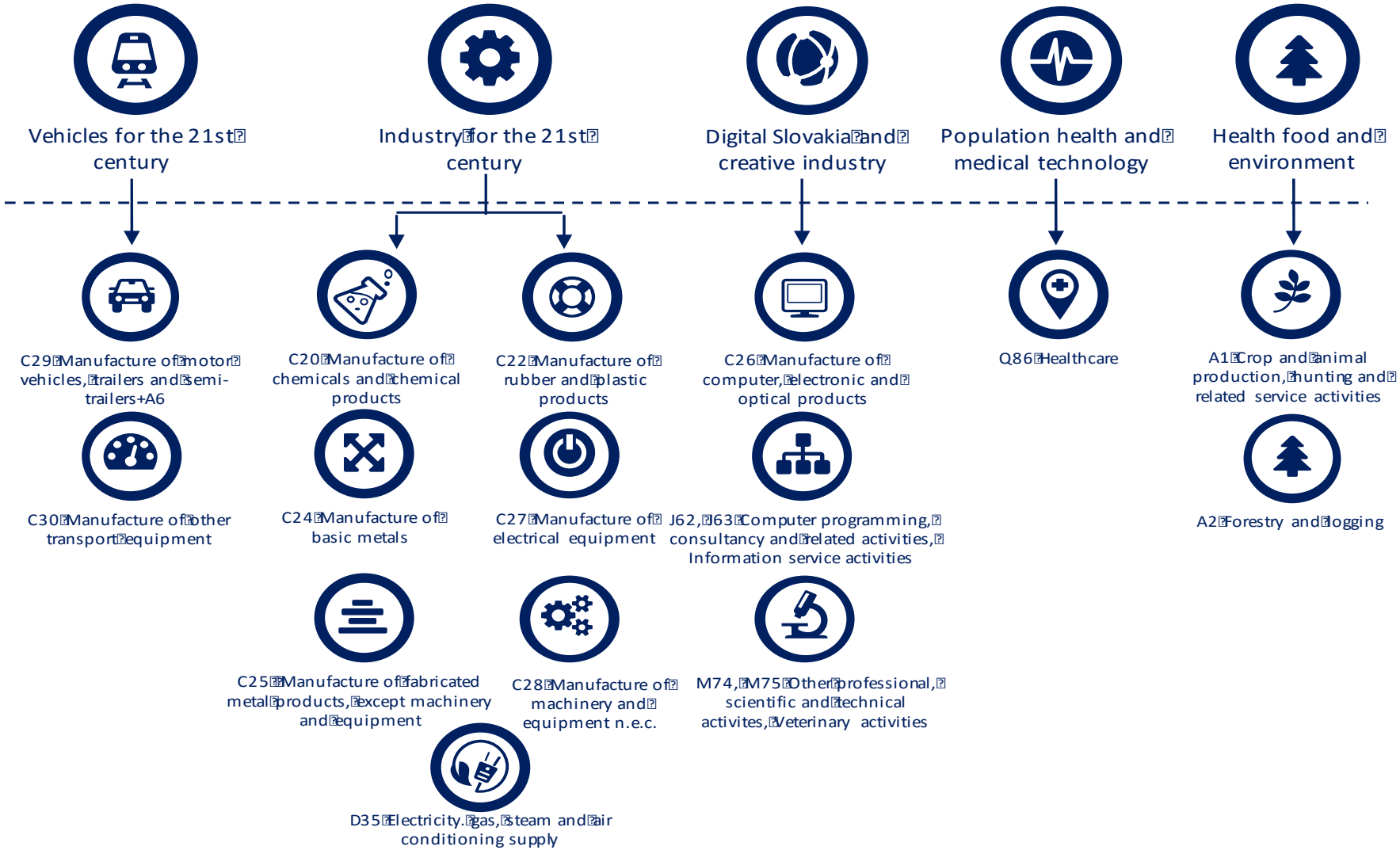
In frames of prioritisation, 5 domains of smart specialisation approved (according to economic, research and knowledge parameters):



RIS3 SK - EDP

Overview of the smart specialisation domains

and main relevant SK NACE industries



Process of preparation for EDP in domains

Establishment of the working group – domain platform:

- At the OVPMII in cooperation with domain stakeholders 3. (Digital Slovakia and Creative industry) - The main result of the work of domain platforms is the determination of technological priorities at the level of specific product groups with the potential for economic recovery and proposals for optimization of the infrastructure of public R & D organizations.
- A wider professional community will be involved in maximizing the objectification of proposals for prospective development areas.
- Working groups – Domain platforms are governed by the Unified Methodology established by the OVPMII and the Standing Commission of the Government Council for Technology and Innovation (SKS3) for data collection and data evaluation, in collaboration with experts who know the domain creation process, functional bonds. The EDP process is prioritized through a questionnaire survey conducted by members of the domain and working group members towards organizations, institutions, business entities they cover.

The structure of the questionaire

The questionnaire was divided into three parts:

- the first part identifies the basic information about the respondent and his company - the size of the company, the share of domestic and foreign capital, the perception of the impact of megatrends on their business, the definition of the market they are taking and their position;
- the second part focuses on the perception of support for science, research and innovation in Slovakia, the possibilities and needs of using the research infrastructure and the optimal forms of support for R & D;
- the last, third part, is focused on specifying areas where respondents should be supportive of science, research and innovation from the point of view of the main areas of specialization and the main development trends.

3rd part – key trends – orientation in particular to industry 4.0

Digital business

autonomous intelligent industrial production, cloud solutions focusing on multi-criteria production management methods,

innovative 3D printing management methods to ensure high print capacity and stability,

new approaches to the digitization of industrial enterprises and modeling,

virtual robotic complex compilation methodologies, simulation and emulation of industrial production and logistic systems, interconnection of real and virtual industrial production, virtual twin concept development,

intelligent control of production units based on simulation technologies, management of advanced robotic structures,

secure data transfer within internal and external production logistics, concepts of expanded reality for elements of the production system,

analyzing big data for the need to increase production efficiency

3rd part – key trends – orientation in particular to industry 4.0

ICT for robotic system management

ICT for new models of manufacturing and new management approaches,

managing mobile robot systems using artificial intelligence using wireless protocols and interfaces and integrating them within a digital business,

development in the field of cooperation and integration of various robotic systems, advanced communication protocols,

cloud solutions minimizing ramp-up time intervals Intelligent cooperative systems and human-robot management systems - robots and humanoid robotic workers and robots,

new interface types, cloud solutions for analytical and predictive mechanisms, drones management and their use in industry for inspection, fast logistics

3rd part – key trends – orientation in particular to industry 4.0

Innovative industry/digital technologies for the robot management systems

high adaptive manufacturing control systems, adaptation tools for program preparation for various applications,

new communication systems, machine vision and other methods for detecting and analyzing objects,

security control systems, application of neural networks to evaluate procedures and parameters,

remote control of technological processes, automated quality control and diagnostics systems and their integration in the digital business,

automation of diagnostics of image processing processes and deep neural networks, automation and robotization of laser, laser hybrid and electron beam processes and technological complexes in vacuum and in the atmosphere

Results of megatrends in platforms 1.+2.

	Very strong impact	Slight impact	we do not see the impact of this trend yet
demographic change (population decline, brain drain abroad, lack of qualified labor within the EU)	54 (48,21%)	43 38,39%)	15 (13,39%)
digitization (lack of qualified graduates to master digital skills)	35 (31,25%)	50 (44,64%)	27 (24,11%)
robotization and automation (drop in demand for labor)	24 (21,43%)	32 (28,57%)	56 (50,00%)
global warming (access to water, changes in crop production in agriculture, energy aspects)	12 (10,71%)	26 (23,21%)	74 (66,07%)