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FEEDBACK PAPER

Final report on good practice

**on the implementation of regional strategies for smart specializations (RIS3)
in selected countries of the Baltic Sea Region with recommendations
for the Managing Authority of the Regional Operational Program
of the Kujawsko-Pomorskie Voivodeship for the years 2014-2020**

Toruń, 2018

*Document prepared by Kujawsko-Pomorskie Innovation Agency
in relation with contract No. UM.RM.052.1.131.2018 concluded on 12th July 2018*



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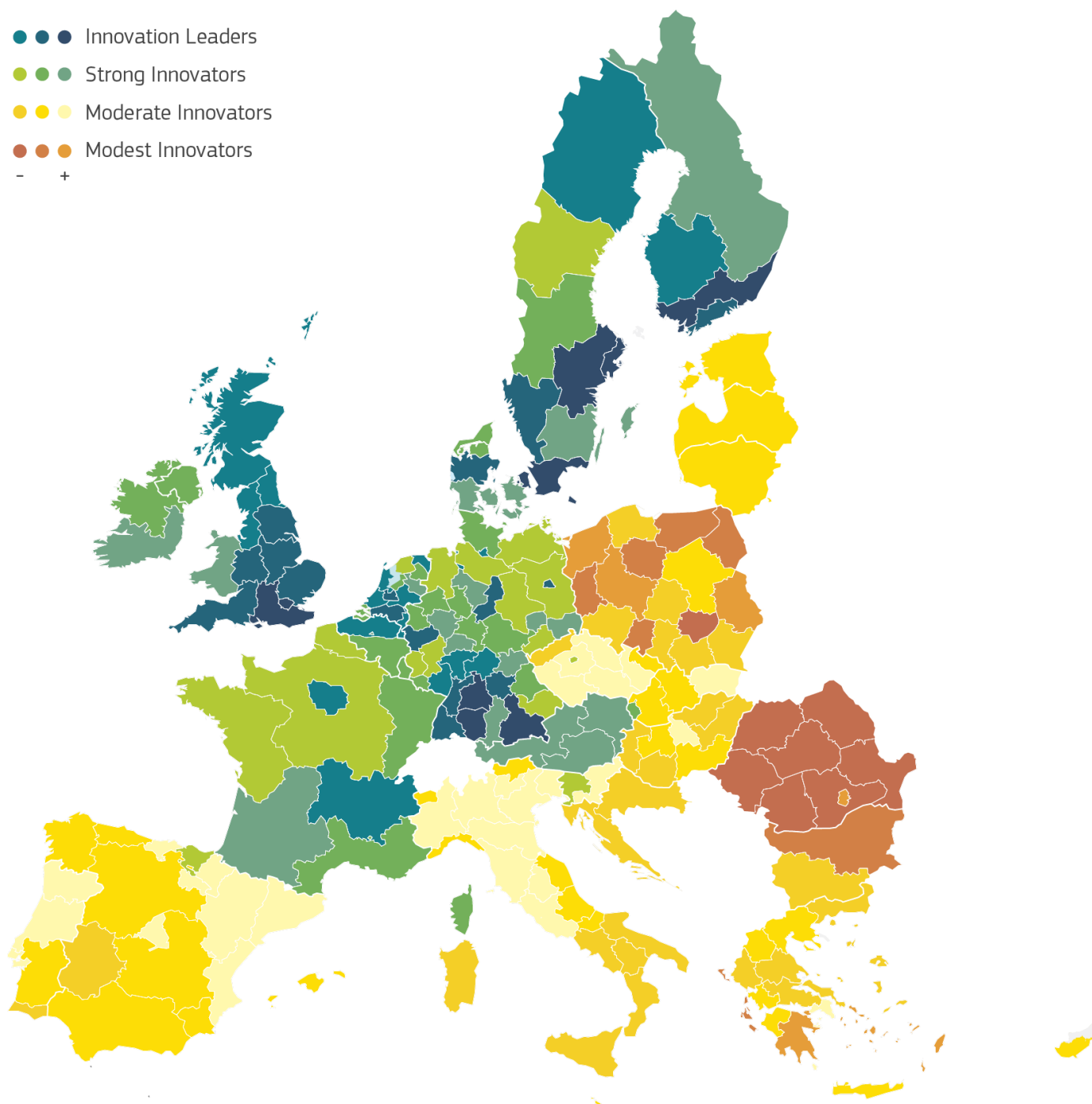
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2017 REGIONAL INNOVATION SCOREBOARD



Pic. 1. State of innovation development in European countries for 2017
Source: http://ec.europa.eu/growth/industry/innovation/facts-figures/regional_en

Chapter I.

Introduction - the scope and function of the document

The following Report concerns good practices in the implementation of regional strategies for smart specializations (RIS3) in selected countries of the Baltic Sea Region, including recommendations for the Managing Authority of the Regional Operational Program of the Kujawsko- Pomorskie Voivodeship for the years 2014-2020 in the field of effective implementation of RIS3 in ROP projects. The report has been prepared based on information obtained as part of the implementation of the EmplInno project (Interreg Baltic Sea Region), provided by the Employer and as part of the Contractor's own research, covering good practices in the implementation of RIS3 in the Baltic Sea Region.

The EmplInno project aims to improve the effectiveness of implementing regional innovation strategies in the Baltic Sea Region, including the implementation of the assumptions resulting from the strategy for smart specializations (RIS3). The EmplInno project is used to increase the importance of smart specialization strategies for innovation and development in medium-sized cities and regions. Project activities were initiated directly in regional governments, business environment institutions (BEIs), and innovation agencies and development, science and technology parks and universities where RIS3 specialists received support, whose task will be to mobilize enterprises, especially SMEs, to generate innovative projects (financed later from structural funds) and to develop network cooperation. The regional authorities, responsible for the programming sphere, receive as a result of the program implementation the necessary assistance and information on the need to improve regional policy instruments and financing mechanisms for innovative activities. As part of the project, the Kujawsko-Pomorskie Voivodeship performed, among others, a series of trainings for entrepreneurs and innovation brokers in the area of implementing smart specializations of the region, it also organized study visits and meetings aimed at bringing together some entities such as BEIs, business representatives, government and local government administration, representatives of the education and science sphere, as well as representatives of civil society (NGO - non government organization), referring to the specialization: Best safe food - processing, fertilizers and packaging as well as medicine, medical services and health tourism. Such a wide representation has developed, using good practices of foreign partners, a system of monitoring of smart specializations (including the methodology of selecting new monitoring indicators) and organized information meetings.

The EmplInno project is co-financed from the European Regional Development Fund. Priority 1: "Potential for innovation", detailed objective: 1.2: "Smart specialization": Increased development opportunities based on the greater potential of entities from the innovation sector in the application of the smart specialization in transnational specialization "within the Interreg Region of the Baltic Sea.



Pic. 2.

Source: <http://emplinno.eu/documents>

The project is implemented in the period: May 2016 - April 2019 in cooperation with 16 Partners from the Baltic Sea region (Interreg Region of the Baltic Sea) (See Figure X) and additionally with 29 Associate Partners.

In addition, the institutions involved in the EmplInno project represent: 250 active companies participating in R & D transfer workshops, delegations, information events and activities for the empowerment of SMEs and 13 different regional (and national) smart specialization strategies developed by project partners.

The report was developed based on multimedia presentations made by EmplInno Partners, which became the main source of knowledge on the way smart specializations operate in particular regions. Additionally, knowledge was supplemented with information posted by EmplInno Partners on websites or in regional strategic documents. Information obtained this way often required from the EmplInno Partners clarifications or explanations to understand the organizational culture, the specificity of the region or to know the operating procedures.

In connection with this, a list of 5 questions was sent to each of the partners electronically, which complemented the previously acquired materials. The fact is that only a few out of 16 (15 partners after the resignation of the Kiel Business Development Agency in 2017) decided to answer the questions posed.

The scope and function of the report

The report covers the full spectrum of the implementation process as well as the identification of RIS3 in the Kujawsko-Pomorskie region, results of process evaluation, defines problems and threats to the failure to implement the adopted visions, strategies and objectives for the region of Kujawsko-Pomorskie Voivodeship. The report is to constitute - through a list of good practices used by Partners - a starting point to consider the better use of the potential of the Smart Specialization Strategy of the Region. This, in turn, will allow to create a list of recommendations for the Managing Authority of the Regional Operational Program of the Kujawsko-Pomorskie Voivodeship for the years 2014-2020.

The structure of the following Report consists of these chapters:

Chapter I. Introduction - the scope and function of the document.

Chapter II. The RIS3 implementation process in the Kujawsko-Pomorskie Region.

Chapter III. Defining problems in the field of innovation development in the Kujawsko-Pomorskie Region.

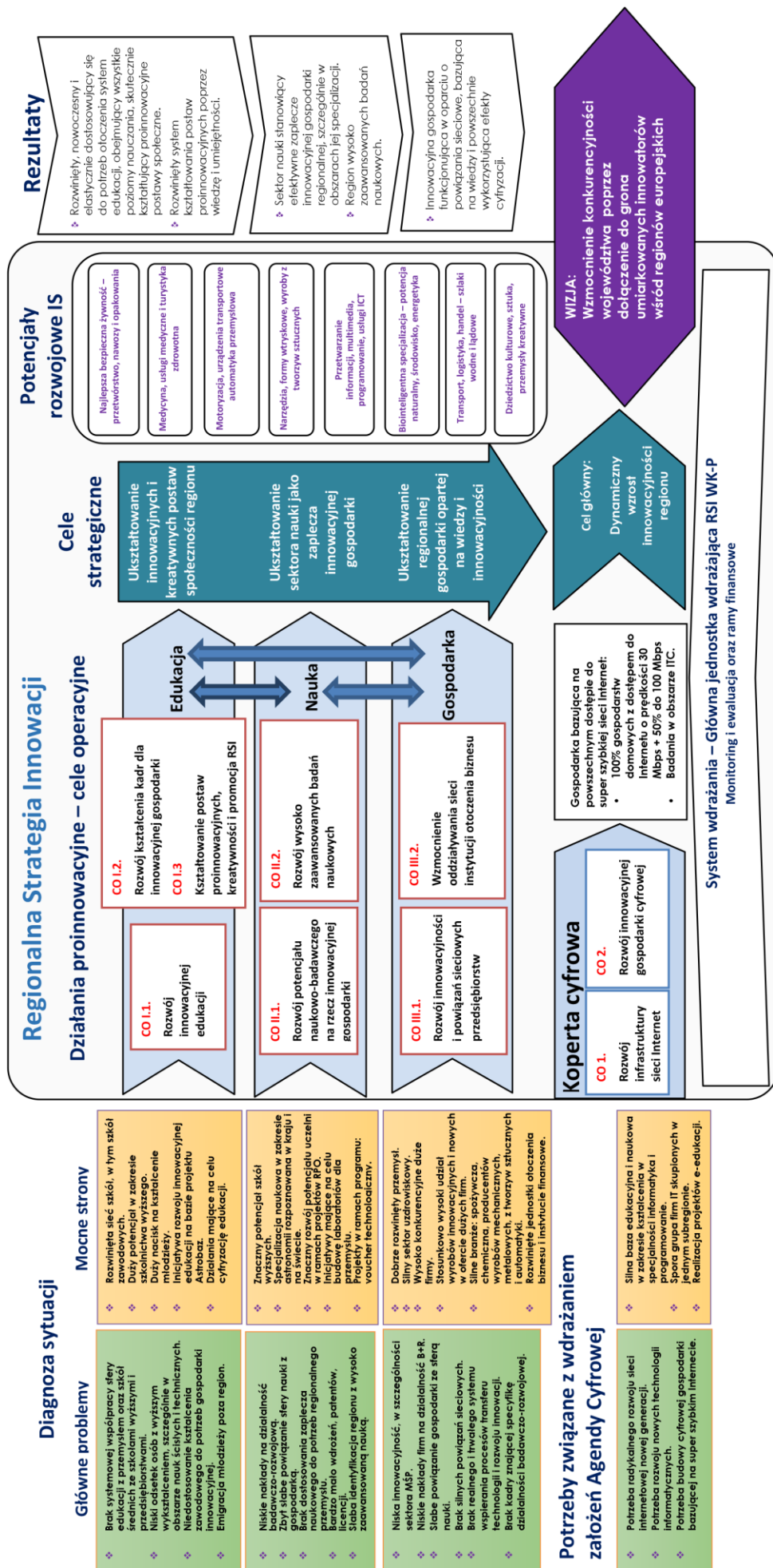
Chapter IV. Good practices from EmplInno partner regions in the scope of RIS3 implementation.

Chapter V. Recommendations for the MA based on good domestic and foreign practices, improving the implementation of RIS3, including: program, axis, activity, main stakeholders, sources of financing, how to monitor the proposed changes.

The task of the report is to compare the ways of operation and mechanisms that function for individual EmplInno Partners in the scope of RIS3 implementation. The starting point for the description of good practices in the countries of the Baltic Sea Region were the studies and multimedia presentations showing us the Partner's experience in this area.

The comparison of many regions with different circumstances has allowed the identification of good practices, and in the best possible way they affect the region and contribute to its development, and enhance the systems of innovation support there. Thanks to these activities, through the list of recommendations for the MA it will be possible to implement the best solutions by the Managing Authority of the Regional Operational Program of the Kujawsko-Pomorskie Voivodeship for the years 2014-2020.

The report has been prepared in two language versions: Polish and English, both in paper and electronic version.



Pic. 3.Source: Annex to Resolution No. 2/14/15 of the Management Board of the Kujawsko-Pomorskie Voivodeship of January 14, 2015 regarding the adoption of the development program named "Regional Innovation Strategy of the Kujawsko-Pomorskie Voivodeship for 2014-2020", p. 44

Translation of the picture on page number 43

Chapter II.

The RIS3 implementation process in the Kujawsko-Pomorskie Voivodeship

The Regional Innovation Strategy of the Kujawsko-Pomorskie Voivodeship for 2014-2020 (hereinafter: RIS WK-P) was published in the form of an annex to Resolution No. 2/14/15 of the Board of the Kujawsko-Pomorskie Voivodeship of January 14, 2015 regarding the adoption of the development program called "Regional Innovation Strategy for the Kujawsko-Pomorskie Voivodeship for 2014-2020" (RIS WK-P). While preparing the strategy, regional achievements were used to support innovation, as well as experience resulting from implementation of the previously applicable strategy, previously developed concepts and documents regarding the pro-innovative development of the province, as well as the experiences from the implementation of the Regional Operational Program of the Kujawsko-Pomorskie Voivodeship for the years 2007-2013. RIS WK-P takes into account the most important advance needs of the region, its specializations and potentials.

Kujawsko-Pomorskie Voivodeship is a region in which 8 development potentials have been distinguished:

1. The best safe food - processing, fertilizers and packaging,
2. Medicine, medical services and health tourism,
3. Automotive, transport equipment and industrial automation,
4. Tools, injection molds, plastic products,
5. Information processing, multimedia, programming, ICT services,
6. Biointelligent specialization - natural potential, environment, energy,
7. Transport, logistics, trade - water and land routes,
8. Cultural heritage, art, creative industries.

The basis for the selection of development potentials was the diagnosis of the situation and strategic analysis of the voivodeship, based on the data obtained. As a result of the strategic analysis of potentials, areas with a particularly significant impact on the region's economic development and having a strong scientific base conducting highly advanced research, which could form the basis for the development of enterprises' innovativeness, were selected.

The idea of smart specialization (hereinafter: IS) is to select the areas of economy and science most important from the point of view of the region's potential and to focus intervention on them, aimed at radical development of the voivodeship through an increase in innovation of the economy based on the absorption of highly advanced research results. The key condition for the selection of smart specialization is the combination of existing, strong economic potential in a given area with advanced research carried out at the European and global level. These studies must aim at developing unique solutions implemented in enterprises, enabling them to develop innovation at a global level. Thus, smart specialization means identifying unique features and assets of a country or region, emphasizing a competitive advantage, and concentrating regional partners and resources around a vision of the future oriented towards achieving and shaping excellence. It means

STRENGTHS


EDUCATION
 THE SCHOOL OF THE SCHOOLS DEVELOPED, INCLUDING PROFESSIONAL SCHOOLS
 BIG POTENTIAL IN THE FIELD OF HIGHER EDUCATION
 BIG PRESS ON YOUTH EDUCATION
 INNOVATIVE DEVELOPMENT OF INNOVATIVE EDUCATION BASED ON THE ASTRO-BASE PROJECT


SCIENCE
 THE SIGNIFICANT SCIENTIFIC POTENTIAL OF HIGHER SCHOOLS
 SIGNIFICANT DEVELOPMENT OF THE UNIVERSITY POTENTIAL UNDER THE UNION PROJECTS
 INITIATIVES FOR THE CONSTRUCTION OF LABORATORIES FOR THE INDUSTRY
 PROJECTS WITHIN THE PROGRAM: TECHNOLOGICAL VOUCHER


ECONOMY
 GOOD DEVELOPED INDUSTRY
 A STRONG BUILDING SECTOR
 HIGH COMPETITIVE LARGE COMPANIES
 RELIABLE SHARE OF INNOVATIVE AND NEW PRODUCTS IN OFFERED USERS
 STRONG INDUSTRIES: FOOD, CHEMICAL, MANUFACTURING: MECHANICAL, METAL, PLASTIC AND AUTOMATION
 DEVELOPED ENTITIES OF BUSINESS ENVIRONMENTS AND FINANCIAL INSTITUTIONS


"DIGITAL ENVELOPE"
 STRONG EDUCATIONAL AND SCIENTIFIC BASIS ON EXTENTLY EDUCATION:
 IT AND PROGRAMMING
 DISPUTE GROUP OF IT COMPANIES COVERED IN ONE SUBREGION
 IMPLEMENTATION OF E-EDUCATION PROJECTS

strengthening regional innovation systems, maximizing knowledge flows and disseminating the benefits of innovation across the entire regional economy.

The several-stage process of selecting smart specializations of the Kujawsko-Pomorskie Voivodeship also included expert consultations and extensive public consultations. Expert consultations included a series of 11 meetings - in addition to technical meetings, 8 of them concerned 8 developmental potentials separately. The scope of work of expert teams with the activity of over 80 people from the sphere of business, science and administration. All members of expert teams during the workshops were free to speak, express opinions, submit ideas and objections.

The Board of the Kujawsko-Pomorskie Voivodeship on June 29, 2016 adopted the document entitled "Intelligent specializations of the Kujawsko-Pomorskie Voivodeship - characteristics of areas of smart specializations for projects implemented under the Regional Operational Program of the Kujawsko-Pomorskie Voivodeship for 2014-2020" (RPO WK-P), containing comments from stakeholders submitted as a result of public consultations.

As a result of the process of selecting smart specializations of the Kujawsko-Pomorskie Province, an offer of three types of smart specializations was presented. The proposed approach to specifying the scope of smart specialization areas of the region is based on a model that combines approaches known from the design of business models in the private sector, with the logic of intervention in planning public interventions. Defining the scope of areas of specialization is inseparably connected with the approach to defining the selection and evaluation criteria of projects submitted for competitions under the ROP WK-P, especially as part of activities supporting research, technological development and innovation.

The model is based on the central element of the business model known as the value proposition. The value proposition describes the value the company offers to its clients. The value is transferred by the company's services or products that meet the needs of customers. The latter are expressed through market demand, which ultimately verifies the market value of the business model.

In the context of RIS WK-P, the value proposition is understood more broadly. It covers the range of innovative services and products that actors in the area of smart specialization in the region can offer in response to local and global challenges and to existing or emerging demand. As with the company, the value of regional smart specialization will verify the demand for specific innovative solutions implemented in practice.

It should be remembered that the understanding of the value offered by specific services or products implemented under the smart specialization should not be limited only to their market value. It should be part of a wider mission of the public sector and respond to important development challenges, such as security and public order, healthcare, environmental protection, cultural heritage, etc.

In connection with the above, the proposed model emphasizes the expected effects of actions co-financed by the public sector under the smart specialization. The effects include specific results and results of actions undertaken (eg innovative services and products) and their wider effects (eg new high quality jobs, higher turnover and increased competitiveness of the region's companies, etc.). The description of the wider effects of the proposed activities is intended to allow measurable verification of the achievement of value propositions.

INTELLIGENT SPECIALIZATIONS

BASED ON VALUES



HEALTHY AND SAFE FOOD
TRANSPORT AND MOBILITY
CULTURAL HERITAGE AND CREATIVE INDUSTRIES
HEALTH AND TOURISM. HEALTH
APPLICABLE MATERIALS AND TOOLS

BASED ON TECHNOLOGIES - HORIZONTAL



INFORMATION AND COMMUNICATION TECHNOLOGIES ICT
ECO - INNOVATION
INDUSTRIAL AUTOMATION

OTHER



LAYED WITHIN ENTREPRENEURING DISCOVERY

The following specializations have been selected in the Kujawsko-Pomorskie Voivodeship:

SMART SPECIALIZATIONS BASED ON VALUES, i.e.:

- 1. Healthy and safe food** - focuses on innovative production, food processing as well as innovative packaging, certification methods / quality control and modern and specific consumer education,
- 2. Health and health tourism** - focuses on innovative and personalized diagnostics and a wide range of care and prevention, also through advanced and modern tourism (rehabilitation, sanatoriums, recreation, etc.),
- 3. Advanced materials and tools** - specialization primarily focuses on innovative materials and materials that are used for innovative production of objects (machines, tools, packaging, etc.),
- 4. Transport and mobility** - in the case of this specialization, its maturity has been specified as the potential to be used in the processes of displacement, efficient communication and use of resources that the region has (waterways, land routes, production potential of transport equipment),

- 5. Cultural heritage and creative industries** - the basis for the formation of this specialization is the huge resource of the region which is a "living laboratory", which in itself is a great potential for the development of innovative and innovative conservation methods, techniques and technologies, resource presentation, protection. In addition, it was noted that the region is also a smoothly developing area of design (industrial, utility, cultural) as well as creative industries (including games).

SMART SPECIALIZATIONS BASED ON TECHNOLOGIES (HORIZONTAL INTELLIGENT SPECIALIZATIONS)

Solutions in the area of the following smart specializations find their application in each of the value-based smart specializations. They play very important roles in complementing and functional implementation of IS based on value assumptions. The formation of horizontal ISs is of key importance in the process of interaction of the final state (output, desired) of a given IS and its value, on the current state (input, initial). Horizontal IS is designed to sustain, supplement and support the IS's main value. Thanks to the fact that the value-based IS can "support" one, two or all together with IS horizontal, we can obtain the effect of intelligent coupling / joining of all IS.

- 1. Information and communication technologies (ICT)**
- 2. Eco-innovation**
- 3. Industrial automation**

OTHER, LAY OUT WITHIN ENTREPRENEURING DISCOVERY

A separate category are the areas of the so-called "Others" selected as part of entrepreneurial discovery. Entrepreneurial discovery is a sustainable and active involvement of entrepreneurs in the creation of regional innovation policy. The basis for creating smart specializations is the entrepreneurial discovery process, understood as integrating various stakeholders to identify priorities in the field of research, development and innovation. It is important that the activities undertaken in this area are characterized by high quality, scientific and economic utility.

The essence of the entrepreneurial discovery process includes supporting bottom-up activities and initiatives that will lead to smart development and the optimal use of resources, in particular those that will effectively involve the private sector in running and funding research and innovation.

The process of identification of smart specializations involves economic and scientific partners as well as civil society in order to enable the discovery of those areas in which the country has a chance to stand out on the international market. It is important that the activities undertaken in this area are characterized by high quality, scientific and economic utility. Decisions on smart specializations are not taken from above, but are the result of in-depth analyzes of endogenous economic advantages and cooperation with socio-economic partners. Actions taken to identify smart specializations will allow for **effective financing of investments in these areas that will bring real economic effects.**

There is no doubt that smart specialization fulfills a strategic and central function in the new Cohesion Policy - it is the smart specialization that is the key mechanism by which Cohesion Policy is to contribute to the implementation of the Europe 2020 goals in terms of new jobs and growth.

Chapter III.

Defining problems in the area of innovation development in the Kujawsko-Pomorskie Voivodeship

The aim of the Kujawsko-Pomorskie Voivodeship is to join the most-developed regions in terms of innovation in Poland. By 2020, the region is to become the fifth region in terms of innovation in the country.

In the Regional Innovation Strategy of the Kujawsko-Pomorskie Voivodeship (RIS WK-P) for the years 2014-2020, four areas have been distinguished in which innovation becomes a catalyst for investment. In the Kujawsko-Pomorskie Voivodeship there is no shortage of creative people and innovative ideas that can realistically contribute to their achievement. The condition for their implementation is proper and systematic care

for the development of innovation. The RIS WK-P document indicates strategic goals to be achieved through specific actions in the field of increasing innovation. This is intended to be achieved through various types of interventions in several areas. The first level concerns the development of scientific research as the primary source of innovation.

According to the most common definition, taken from the so-called Oslo Manual - innovative activity is the whole of scientific, technical, organizational and financial activities and commercial ones that actually lead or are intended to lead to the implementation of innovation. Some of these activities are innovative in nature, while others are not new, but are necessary to implement innovations. It should be emphasized that the innovative activity also includes research and development (R & D), which is not necessarily directly related to the creation of a specific innovation¹.

¹ Organization for Economic Cooperation and Development, Statistical Office of the European Communities, Oslo Manual. Rules for collecting and interpreting innovation data, Paris 2005, available at: <http://home.agh.edu.pl/~kkulak/lib/exe/fetch.php?media=user:konrad:vary:oslo-manual.pdf>, [access: November 6, 2018]



Fig. 4. Regional Innovation Potential²

In the Regional Innovation Strategy of the Kuyavian - Pomeranian Voivodeship for the years 2014-2020, a number of problems were taken into account, concentrated in three thematic areas, crucial for strategic planning of the province's development in the field of innovation plus the area of development of universal accessibility and usability of ICT:

- school education and higher education,
- science, including research and development activities,
- economy, including and administration institutions,
- „digital envelope”.



EDUCATION

LACK OF SYSTEM COOPERATION WITH THE INDUSTRY AND SECONDARY EDUCATION SPHERES WITH HIGHER EDUCATION AND ENTERPRISES

LOW INTEREST OF PERSONS WITH HIGHER EDUCATION, ESPECIALLY IN THE AREA OF STRONG AND TECHNICAL SCIENCES

EMULATION OF YOUNG PEOPLE OUTSIDE THE REGION

One of the most important aspects in the area of education is the vocational education system. The biggest challenge for the Kujawsko-Pomorskie region is to adapt this system to the needs of an innovative economy.

The vocational education system in the Kujawsko-Pomorskie Voivodeship is not adapted to the needs of an economy based on innovation. The economic sphere is experiencing serious difficulties in acquiring well-qualified staff with a technical and engineering profile. This problem concerns mainly the well-developed processing industry in the region. As a result, **the shortage of employees with appropriate qualifications** is becoming the most serious barrier to the development of Kujawsko-Pomorskie enterprises. The Regional Innovation Strategy of the Kujawsko-Pomorskie Voivodeship for the years 2014-2020 directly indicates that in the sphere of education in the region there are difficulties in acquiring well-

² Based on a report prepared by Bank Millennium, the Millennium Index. Potential of regional innovation, p. 6, access map on the website: <http://hvacpr.pl/wiadomosci/gdzie-w-polsce-sa-liderzy-nownowacyjnosci-najbardziej-innowacyjne-wojewodztwa>, [accessed: 06/11/2018]

qualified staff with a technical and engineering profile. Unfortunately, a relatively **small number of students are educated in areas important for the development of innovation**, including engineering and technical sciences, IT, production and processing³. Based on GUS data - in 2015, it was only 20.2% of the number of students, while in 2016 - 20% (no data for 2017). Admittedly, humanities are very popular - according to employers, university graduates are relatively poorly prepared practically, although their theoretical knowledge is usually assessed positively.

It should be noted that regardless of the problems described above, universities in the region are characterized by a high didactic level and significant development potential, however, there is a **lack of systematic cooperation between the education and industry and secondary schools with universities and enterprises**. Thus, their high human resources, scientific and research potential is to a small extent supporting the innovation processes in the field of technological development.

Another important problem is **the emigration of talented youth outside the region**, which may cause both, as well as the effect of negative phenomena identified in the area of education (significant in the context of RIS WK-P).



In the sphere of science, **too little expenditure on research and development is of significant importance**. The ratio of outlays on R & D per capita in 2016 is PLN 139.1 (no data available - 2017), where on average in Poland it is PLN 466.9.

Another problem is the **low number of implementations, patents and licenses granted** in the Kujawsko-Pomorskie Province. In the region, according to the Central Statistical Office, only 105 patents were granted in 2016 (3370 in Poland). From year to year, the number of granted patents is increasing, while the Kujawsko-Pomorskie region falls on average compared to others - for example, there are 7 provinces in Poland, where even fewer patents have been granted.

The sphere of science remains **poorly connected with the economy of the region**. Although in some areas the innovative potential of the R & D sector can be assessed positively, the developing range of cooperation between the R & D sector and enterprises should be assessed critically. Entrepreneurs point to a number of important obstacles to establishing cooperation with the regional sphere of science and research, primarily emphasizing excessive bureaucracy and the lack of flexibility of operation that meets the needs of the market. Other negative phenomena, in particular those hindering the creation of platforms for cooperation and mutual understanding of needs, are only individual cases of internships by employees of research and development centers in enterprises and the concentration of activities of the majority of centers on the local market. Undoubtedly, however, human resources, scientific and technical universities in the region, create opportunities to expand enterprises' access to pro-innovation services and closer links between science and economy⁴.

³ Annex to Resolution No. 2/14/15 of the Management Board of the Kujawsko-Pomorskie Voivodeship of January 14, 2015 regarding the adoption of the development program entitled "Regional Innovation Strategy of the Kujawsko-Pomorskie Voivodeship for 2014-2020", p. 7.

⁴ Annex to Resolution No. 2/14/15..., p. 8-9.



ECONOMY

- LOW INNOVATION, IN PARTICULAR OF THE SME SECTOR
- LOW BUSINESS EXPENSES FOR BUSINESS ACTIVITIES
- HEALING RELATIONSHIP WITH THE SCIENCE
- LACK OF STRONG NETWORK CONNECTIONS
- LACK OF A REAL AND SUSTAINABLE SYSTEM FOR SUPPORTING TECHNOLOGY TRANSFER PROCESSES AND INNOVATION DEVELOPMENT
- LACK OF KADRY KNOWN THE SPECIFICATION OF RESEARCH AND DEVELOPMENT ACTIVITIES

In the sphere of economy, the problem is that enterprises build their competitive advantage at a low cost of work, which will result in reduced profitability and the lack of development opportunities. It should be noted that the Kujawsko-Pomorskie region is very diverse internally. This is evident in the economic activity of residents, the number of registered companies, access to infrastructure, including the Internet and the amount of unemployment. According to GUS data (as at the end of August 2018), **the registered unemployment rate in the Kujawsko-Pomorskie Voivodeship is 8.6%, where in Poland 5.8% was registered.**

Innovative industrial enterprises in the years 2011-2013 were in the group of small enterprises - 4.4%, medium - 31.4%, while among large enterprises - 53.3%.

According to GUS data, since 2013 in the Kuyavian-Pomeranian Voivodeship there has been an upward trend in enterprises which incurred expenditures on innovative activities. The funds allocated by enterprises for this purpose are differentiated according to the types of innovative activity and sources of financing. Expenditures on innovative activity in enterprises by types of innovative activity are all expenditures on product and process innovations (current and investment). For example, in 2016, 13.08% of enterprises that incurred expenditures on innovative activity, while the average in Poland was 14.69%.

One of the weakest points of the voivodeship's economy are **very small expenditures for conducting research and development works**, resulting in low innovativeness of enterprises. Therefore, one of the most important principles must be a radical increase in the involvement of companies in carrying out R & D works aimed at developing products and technologies so as to achieve in their area an advantage over competition, at least at the European level. R & D works should be carried out within the enterprise and in cooperation with regional scientific units and other companies.

The economy of the region is still poorly connected with the sphere of science and business environment units. Even innovative companies generally do not use the offer of business environment units, and highly value cooperation with universities. The worst situation is in the group of micro-enterprises and only slightly better in small and medium-sized enterprises. Obstacles to developing cooperation result from the mentality of entrepreneurs, especially small ones, who are more interested in the exploitation of the already occupied market segment than development through innovation, implemented on the basis of cooperation with scientific and research units and focused on exploring new market segments.

Another problem in the field of innovation in the region may be **the lack of strong network connections**. The activity of participants of the regional innovation system is conducted in isolation from the activities of other entities in this sphere. Strong and persistent network connections are not formed. Both enterprises and scientific, research and development as well as business support units in the field of innovation operate in an uncoordinated and isolated manner.

From the entrepreneurs' point of view, high schools are characterized by an overly complex and usually complicated organizational structure. Their structures lack one decision-making center responsible for cooperation with entrepreneurs and an intermediate link in the form of innovation brokers, which causes delays in the implementation of research and their bureaucratisation. Universities are usually interested in longer research programs, while entrepreneurs expect specific research and expertise that are immediately applicable in the production / service activities of the company. Examples of specific network connections, eg cluster initiatives, such as the Bydgoszcz Industrial Cluster, are relatively small, and the extent of their impact is too small to dynamically stimulate the development of these links in the region.⁵



The latest GUS data indicate that the Kujawsko-Pomorskie region has no problems resulting from the implementation of the digital envelope. It should be mentioned that its main task is to shape the economy based on universal access to the super fast Internet network. Both in terms of entrepreneurs who use computers, have access to the Internet or have broadband Internet access - the Kujawsko-Pomorskie region performs better than the average of all of Poland.

In regions where a high level of innovation is evident, a number of factors play a very important role. It is above all a very good state of the broadly understood economy, state policy in the field of business and innovation support, scientific facilities, but also such a valuable factor as the attitude of society towards the development and implementation of modern technologies. All this makes the region "programmed" to adopt innovative solutions, or to constantly improve already known processes. An example of a good preparation of ICT infrastructure is the creation of EXEA Data Center, whose computing power allows to handle all the needs of companies in the Kujawsko-Pomorskie region.

Measures promoting the use of structural funds to improve the region's innovation, carried out by local authorities encourage scientific and business entities to cooperate, implement modern technologies and thus to benefit from EU assistance, but procedural factors negatively affect the perception of these opportunities for entrepreneurs. Added to this is the mentality of a society that is not as open to innovation as the inhabitants of Western European regions, as well as the entrepreneurs' conviction that financing innovation development is not a key investment that would in future pay off their economic situation and, consequently, the economic situation the entire region.

⁵ Annex to Resolution No. 2/14/15 ..., op. cit., p. 10-11.

Chapter IV.

Good practices from Emplnno partner regions in the scope of RIS3 implementation

The tables below have been developed based on documents posted by Emplnno project participants on the project website. The information contained in the presentations was supplemented with the use of the strategy of individual regions.

Table 1.

Partners	Opinion/ Recommendations	Statistics
Rostock Business and Technology Development GmbH, Germany	1. Establishment of two competence centers in the field of research and development and innovative technologies 2. Growth of RDI (innovation index) in the private sector 3. Providing capital for R & D 4. Improvement of cooperation between public and private spheres within R & D 5. Supporting technology parks 6. Support in opening up institutions and enterprises for R & D 7. The emphasis on the specialization / profile of the M-V region as a technological center	Meklemburgia-Pomorze Przednie (niem. <i>Mecklenburg-Vorpommern</i>), Area: 23 174 km ² Population: 1 600 000 Expenditure on innovation: - in relation to GDP: 1,32 (%)
D2i Design to Innovate, Denmark South Denmark European Office	1. Supporting clusters, which should ultimately be supra-regional 2. Creating a growth model (basing on demand, financing, support, research and education) 3. Determining the priorities of undertaken efforts 4. The project during its development is subject to evaluation - it is necessary to draw conclusions both by changing the assessment procedures and the project itself	Region Syddanmark Area: 12 191,2 km ² Population:: 1 220 763 Expenditure on innovation: - in relation to GDP: (1,77%)
Kujawsko-Pomorskie Voivodeship Województwo Kujawsko-Pomorskie	1. Updating the diagnosis of the voivodeship 2. Complementary research, SWOT, consultations: expert, social: EC 3. Creation of a mechanism based on 5 implementation principles: a) concretisation of activities b) the precision of the concentration of interventions c) comprehensive and systematic intervention d) radical modernization e) consideration of creativity and cultural resources 4. Meetings of working groups on smart specializations	Kujawsko-Pomorskie Voivodeship Area: 17 972 km ² Population: 2 082 935 Expenditure on innovation: - in relation to GDP: (%)No detailed data

	- In-depth research of the potential of smart specializations Grant projects system - Creating specialized institutions - Development of a mechanism for granting loans and grants - Creation of the Regional Innovation Forum Monitoring the implementation of indicators	
Lubelskie Voivodeship Foundation for Lubelskie Development	- RIS based on SWOT analysis - The Marshal Office acts as a coordinator, affects all market players - The quadruple helix model has been adopted Regional territorial observatory supporting the introduction of changes Evaluation: input, output, yearly, in the middle of the project's life	Lubelskie Voivodeship Area: 25 122,46 km ² Ludność: 2 135 715 Expenditure on innovation: - in relation to GDP: 1,07(%)
Kaunas Science and Technology Park, Lithuania	- Determination of the mechanism: priority fields - priorities - road maps - priority implementation plans Evaluation system: evaluation results -> coordination group -> strategic RDI council Input, central and output evaluation	Kaunas Region- <i>Kauno apskritis</i> Area: 8 089 km ² Population: 612 532 Expenditure on innovation: - in relation to GDP: 1,04 (%)
Riga Planning Region, Latvia	Hybrid Strategy - creating future domestic opportunities and comparative advantage, and integrating pioneer technological research	Latvia Area: 64 573 km ² Population: 1 950 000 Expenditure on innovation: - in relation to GDP: 1,2 (%)
Tartu Science Park Foundation, Estonia Tartu City Government, Estonia	The smart specialization strategy started in the region in 2012. The process was implemented in three phases - Using good practices Brainport Development (Eindhoven) 2012 - Competitiveness analysis and sectoral analysis of southern Estonia 2013 - Developing smart specializations of the 2014 region A triangle of measures has been developed in the region to allow the regional results to be balanced with the results that Tallinn has achieved. At the base of the pyramid, sales skills and the ability to attract were assumed. At the top the ability to earn.	South Estonia Area :15 533 km ² Population: 319 780 Expenditure on innovation: - in relation to GDP: (%) No detailed data

The pyramid was supplemented by two factors: research potential (specialization in various branches of science) and the ability to adapt, A list is created of the main branches of the economy, which are developed in the region, they are:

- Information technology and information technologies
- Health protection and biotechnology
- Healthy and functional food

Smart specializations:

Objectives:

- Raising the competitiveness of the region
 - Focusing on those sectors of the economy that have high growth potential and provide added value
- The process lasted 5 months and included three phases:

1. Public sector cooperation plan, selection of leaders, preparation of a financial plan
2. Identify the main sectors and subject them to a deep analysis of EDP (Electronic Data Processing)
3. A vision of smart specializations, sanctioning strategies

Results:

(+ it succeeded, - it failed)

Phase 1:

- + creation of a public sector cooperation plan
- implementation of the financial plan

Phase 2

- + a good understanding of the needs of enterprises
- keeping companies within the public sector strategy is extremely difficult

Phase 3

- + smart specialization strategy has been accepted by the public sphere
- no strategy implementation plan

Strategic goals:

- **Creating talents and attracting smart jobs**
- **Creating clusters, developing competence and technology centers in key sectors**
- **Construction of bridges between enterprises and supporting institutions**

Good practices:

- Common strategic goals and activities
- Creating a business support system

	• Marketing support of the region • Developing clusters • University knowledge management • B2B meetings - Idea Tuesday's Meetings • audits • Seminars, work meetings • Directing foreign direct investments • Supporting youth entrepreneurship • Ubiquitous Internet <u>Financing:</u> Smart specialization measures at the national level (142 million euros) are divided between two ministries - the Ministry of Economic Affairs and Communications (https://www.mkm.ee/en) and the Ministry of Education and Research (https://www.hm.ee/en). Additional funds are available and allocated from various EU programs and regional budgets. At the regional level, an appropriate smart specialization strategy does not have a permanent funding mechanism. Currently, it is financed from various EU projects and from the contributions of the main regional authorities - the city of Tartu.	
South-Eastern Finland University of Applied Sciences, Small Business Center, Finland	1. Entrepreneurship at the local and international level is promoted 2. Search for opportunities in the region's specialties and focus on them 3. Increasing business know-how and testing new operational approaches. 4. Striving to set up local and national knowledge centers 5. Self-evaluation of project participants 6. Annual verification of the regional strategy 7. Evaluation at the mid-term of the project implementation	South Savo Region Area: 19 000 km ² Population: 150 000 Expenditure on innovation: - in relation to GDP: 0,72 (%)
Prizztech Ltd, Finland Regional Council of South Ostrobothnia, Finland	<u>Work on RIS:</u> a) Networking. Cooperation and contacts with industrial partners, mapping the needs and possibilities, and defining a shared vision b) Refining (literally improving, improving, refining) improvement according to the triple-helix -manner model c) Selection of the most promising ideas emerging as development projects and programs	Satakunta Region- Western Finland Area: 8 412km ² Population: 227 652 Expenditure on innovation: - in relation to GDP: 2,6 (%) – as in all of Finland (estimated Prizztech) No detailed data

	d) Results. <u>Other good practices:</u> 1. In order to evaluate, cooperation between depositaries of the strategy as well as its implementers is used. Organizes discussions examining the issue from many points of view. 2. Common regional development strategy	
Regional council of Östergötland,	1. Establishment of committees dealing with further extracts of competences of the region, such as health protection, transport, over this there are executive committees coordinating activities. 2. Vision - Mission-Strategy 3. The cooperation model took the form of a quadruple helix formed around the core. We should take as a core the Polish equivalent of the voivodeship, the marshal's office which coordinates the entire project, context / purpose / task management. Four divisions: business, government, education, civil society cooperate with each other, interweave activities coordinated by the region 4. The innovation system includes: a) coordinated innovation system (local authorities, public partners, smart specialization strategy, business associations) b) interdisciplinary research (university, smart specializations) c) live laboratories, demo environment (clusters, open innovation arenas) 5. Cooperation, support, implementation of one goal brings together: industry, universities, Innovation system, moderators, institutions, regional authorities	Region Östergötland – Northern Gotland Area: 10 562 km² Population: 440 000 Expenditure on innovation: - in relation to GDP: (%)No detailed data

	6. Evaluation and creation of road maps are systematic 7. Projects are created based on needs, problems, postulates submitted by all entities 8. Project: "Diagram of the company of the future" focused on the development of companies. The above actions resulted in an increase in the turnover of companies by 93% and a 45% increase in employment	
County Council of Gävleborg, Sweden	1. RIS3 based on SWOT analysis 2. Multi-annual strategies 3. Evaluation focused on feedback and drawing and implementation of conclusions	Region Gävleborg Area: 20 000 km ² Population: 840 000 Expenditure on innovation: - in relation to GDP: (%) No detailed data

Source: own study based on documents placed by EmplInno project participants on the project website. Available on the site: <http://emplinno.eu/documents>

The analysis of presentations created by the EmplINNO project participants shows that a certain catalog of similarities that characterize individual regions can be created. There is no region among the participants of the project that would be the leader in their country in terms of technological development, economic, realized GDP or one that would have far greater potential than the areas with which it borders or directly competes. Each of the participants represents the aspirant region, trying to bridge the gap between it and the most developed areas of the country in which it is located.

Each EmplINNO participant is aware of the importance of using RIS3 for the development of the region. In most cases, the work on intelligent specializations was based on long-term strategies - both those already completed and those that look ahead (Prizztech). The SWOT analysis (Kuyavian - Pomeranian Voivodeship, Lublin Province, Gavleborg) was widely used, as well as social and expert consultations (deep EDP analysis in Tartu, or using the experience of the European Commission in Kuyavian - Pomeranian Voivodeship). Visits to recognized BEBs (cooperation of Tartu-Brainport Eindhoven) were also made, which made it possible to use their experiences. These activities were used to outline the situation of the region. The conclusions formulated, allowed to distinguish particular values and opportunities for regions. The knowledge gained was later translated into road maps (Kaunas, Ostergotland), recommendations, priority plans (Tartu, Prizztech, Ostergotland, Kaunas).

The fact that smart specializations have been developed does not guarantee the region's success. It needs its best implementation. It is widely believed that the implementation of strategy assumptions can not rest solely on the state organism.

To achieve the goal, it is necessary to cooperate with state and local government authorities, the sphere of science, business, business environment institutions, regional statistical institutions. Among the participants of the project can be seen the trend of using a triple (Prizztech) or quadruple helix (Ostergotland, Lubelskie).

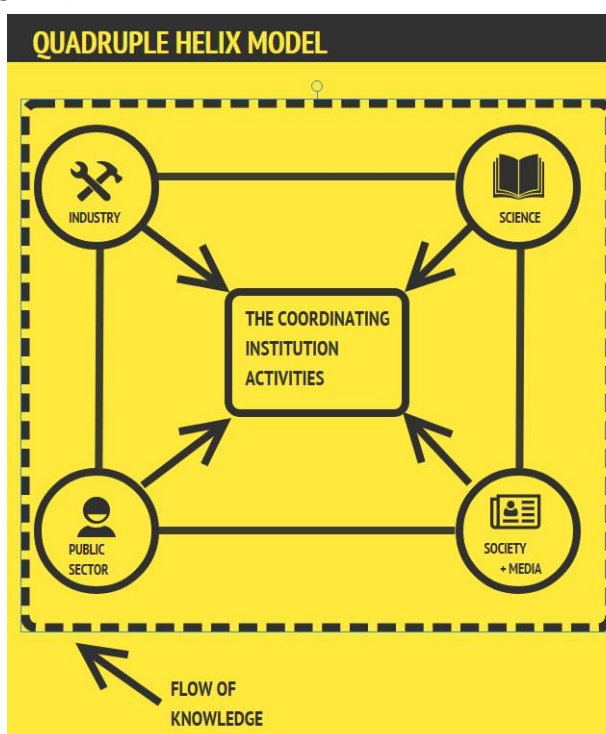
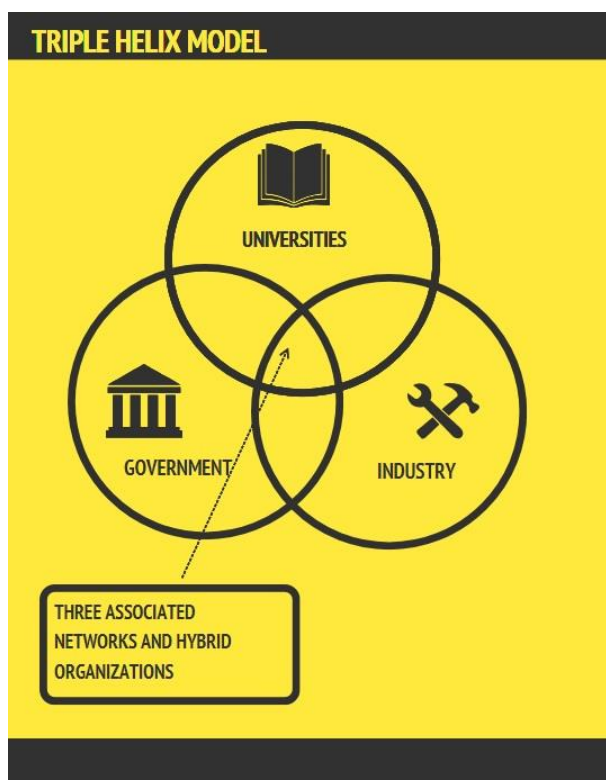
Cooperation between the world of science, the economy and the public sector is becoming increasingly important. This process is particularly visible in regional innovative projects. It is on the basis of the relations between these sectors that innovative projects are created and implemented that significantly change the conditions of development in the EU regions. The dimension of these relations is reflected in the Triple Helix model. At the same time, the development of a triple helix with an additional dimension of society allows us to look from a broader perspective on the dynamics of connections and the impact on the network.

Regions place great emphasis on the evaluation of the project. Input / output, mid-term (mid-term) evaluation is commonly used. Some of the participants from EmplInno also use the annual evaluation (Lubelskie, Kaunas), periodic (Ostergotland, Lubelskie, Kaunas) or self-evaluation (South-Eastern Finland University, Tartu) as well as audits (Tartu).

The exchange of experience within the project indicates that evaluation itself is not a sufficient tool for good supervision on the implementation of smart specializations. The next step is to make changes on an ongoing basis, both in the strategy employed and the actions undertaken or the mechanisms of conduct used, based on the results of this evaluation or provided from various sources of feedback (Gavleborg, D2i).

The institution of the business environment (Tartu Science Park, Rostock) is becoming a widely used practice. In BEI, there is a chance to exchange knowledge and views between all participants of the innovation market. Construction of clusters (South Denmark, Tartu Science Park, Prizztech, Ostergotland), creation of incubators, technology parks (Rostock Business Center, Kujawsko-Pomorskie), development of open arenas of exchange of ideas (Ostergotland, consulting services, organization of: seminars, conferences, working meetings and hackathons (design marathons, ie meetings of programmers, graphic designers who think it is working out a solution for a selected problem), support for youth entrepreneurship (Tartu Science Park) are the most commonly undertaken activities that are independent of the region's specificity or smart specializations that the region has created. It can be argued that the real development of enterprises in the region will not happen without facilitating the work of entrepreneurs, transfer of knowledge between science and business spheres, creating a positive business climate and active actions taken by the authorities and BEIs.

Among the participants of the project, we will find regions that have developed a kind of business support model / growth model / company scheme of the future. This measure applied even in Denmark



or Tartu was a significant support for entrepreneurs. The Ostergotland region becomes a crowned example here, where the sum of activities of the authorities, the sphere of education, BEIs and entrepreneurs resulted in a **45% increase in employment and a 93% increase in the turnover of companies**.

As part of our own research, we sent a questionnaire with five questions to the project participants. We expected that the answers to these questions will give us a broader and deeper picture of how RIS3 is implemented, and in particular the smart regional specialization program in individual regions, and generalized conclusions can be drawn. Meanwhile, only 4 project partners have replied. Below are the tables summarizing these answers:

A. How can business environment units make better use of regional smart specialization strategies (RIS3) and bring them closer to business?

Table 2.

Partners	Opinion
Lubelskie Voivodeship	In recent years, relatively good, quantitative development of business environment institutions has been noticed. The effect is: (1) a large number of such institutions evenly distributed in the region and having good technical facilities, (2) the emergence of the seeds of the institutional system of knowledge and technology transfer. The weakness of this system is the lack of a coherent cluster policy, ranging from support instruments to independent raising of funds, for example through a tailored offer of tailor-made services, no appropriately prepared and motivated staff, and as a result insufficient and poorly adapted to the needs of entrepreneurs, the offer of business environment institutions and the low activity and effectiveness of these institutions in the transfer of knowledge and in the commercialization of the results of R & D. Therefore, four integrated programs are expected to be launched: - a program offering organizational and training support for business environment institutions, aimed at professionalisation of staff (training, workshops, conferences, interregional and international exchange of experience and good practices, guides, etc.); - commercialization and technology transfer program. This program will be based on the experience gathered during the pilot program Regional growth centers; - a program promoting the participation in national and regional certification systems of business environment institutions' services, targeted at enterprises, which will focus on increasing the quality of services offered and increasing the transparency of operations; - the program of the regional benchmarking system for business environment institutions. The above activities are implemented, inter alia, through the Smart Watch Interreg Central Europe project. The aim of the project is to create a Network of Intelligent Markets Market Observatories, which will support activities related to the implementation of the knowledge management model in regional innovation ecosystems. The network's task will be to enable quick and easy access to specialist knowledge and a database of experts in selected, strategic areas for technology. This network is to act as a "contact point" for actors of the innovation ecosystem, facilitating communication and cooperation between them. It is also to ensure the exchange of knowledge and data regarding trends and trends in the development of new technologies. The project is to focus on areas such as: health, natural sciences, information and communication technologies, future services, sustainable production and industry technologies. The project will strengthen the activities of Institutions of Business Environment, which will be able to become an active member of the Network

	of Intelligent Markets Market Observatories. Participation in such a network will enable quick and easy access to industry expert opinions, data sets and information in strategic technological areas, strengthens the quality and access to pro-innovative services for end users. In addition, the selected institution, thanks to the programmed tools, will have easier access to information presenting new technological trends and will be able to observe their evolution.
South-Eastern Finland University of Applied Sciences, Small Business Center	Business entities, for example, are able to participate in EU-funded projects run by regional development organizations and use the potential to further exploit the germs of technical and social innovation.
Prizztech Ltd	Find a way to interpret "regional strategy talks" with business language and business goals. Find ways to implement RIS3 and collaborate with companies during this process.
Regional Council of South Ostrobothnia	In the Region of Southern Ostrobothnia, the smart specialization strategy is implemented by various business environment units, through the implementation of projects financed mainly from the EU structural funds. In general, this means that effective internal and external information about funding opportunities in selected strategic areas is key and improves the use of strategic resources. Such procedures providing immediate benefits are essential for the business sector (eg Hackathon) and in practice they provide an incentive for companies to participate in the RDI activities defined in the smart specialization strategies and implemented by educational institutions and business support organizations.

Source: own study based on questions addressed to the EmplInno project participants

B. How can regional authorities spend public money more effectively to support innovation and growth?

Table 3.

Partners	Opinion
Lubelskie Voivodeship	It is worth stressing that in order to effectively spend public money, close cooperation is needed between the unit managing the Regional Operational Program and the unit of regional intellectual background supporting the transformation of the voivodeship development model that is the above-mentioned Lublin Center for Innovation Research within the Department of Economy and Foreign Cooperation. Evaluation of current pro-innovation projects has shown that the standard approach to support innovation, based mainly on supply instruments, has not worked and did not bring noticeable increase in the level of innovation and competitiveness of the voivodeship's economy. By counteracting such a risk in the future, the RIS LV 2020: (1) assumes a more sustainable use of supply and demand innovation support instruments and greater involvement of private funds, and (2) opens up new activities by creating a new instrument for this purpose (pilot programs) for a systematic search - in the process of entrepreneurial discovery - new solutions (directions and types of activities and specific projects) that are increasingly adjusting the directions and forms of intervention to the changing needs and challenges related to the development of regional areas of smart specializations.

South-Eastern Finland University of Applied Sciences, Small Business Center	The focus should be on strengthening the regional innovation ecosystem and not on individual research and development projects.
Prizztech Ltd	We emphasize deep and regular cooperation and discussion with the private sector. Let us implement activities that increase the activity of "from research to business".
Regional Council of South Ostrobothnia	Regional authorities should have up-to-date knowledge about the needs and capabilities of regional innovation systems entities. In the South Savo region, the Quadruple helix worked well as a design tool for this purpose, and involved many different actors as well as young people. The main organizations involved in the regional development process were the Southern Savo Regional Council as the owner of the process, a consultant as a process coordinator, stakeholders in the education sector, representatives of local business and entrepreneurs, various associations representing citizens, municipal authorities and city representatives. The result is a common understanding of written scenarios (future forces affecting the region) with possible implementation plans (all four scenarios have their own proactive implementation plans, and the fifth scenario includes actions that the region must take regardless of what the scenario will be). Methodologies used during the process: scenario development workshops, discussion workshops, brainstorming, thematic discussion. The most important results are, for example, EU and national projects, competence centers and research.

Source: own study based on questions addressed to the EmplINNO project participants.

C. What are the most important barriers to the implementation of smart specialization strategies?

Table 4.

Partnerzy	Opinie
Lubelskie Voivodeship	The low level of entrepreneurship and innovation are the two most important barriers hampering the transformation of the economy of the Lubelskie Voivodeship and thus the development of smart specializations. Factors determining the above situation include, among others: weak demand for innovations, poor supply of innovations and inefficient system of research and innovation support as well as knowledge and technology transfer system. Therefore, it is planned to launch an integrated program of broad promotion of entrepreneurship and innovation, including creation of an innovative environment that will support the creation of new voivodeship development paths and building a culture of innovation, including triggering the potential of system entities using knowledge and experience from supra-regional cooperation.
South-Eastern Finland University of Applied Sciences, Small Business Center	- There is a need to raise awareness and RIS3 engagement among regional stakeholders, because awareness is a prerequisite for an effective implementation process. - Lack of business entities with a high level of research and development in the region. - Resources of regional entities that can be used in innovative and international projects. They include expenditure on research and development, human resources and know-how. This is related to the general level of education in the

	region and the operational environment; no university, large research institutes, technologically advanced business ecosystems etc.
Prizztech Ltd	Difficulties in finding your own (business) value from "strategic conversation"
Regional Council of South Ostrobothnia	Most of the companies in the region are microenterprises and small enterprises and it is not possible to offer incentives for them to participate in the work on the strategy. In the Ostrobothnia Region, smart specialization strategies are implemented under various projects financed mainly from EU programs. The ongoing challenge is how to continue the development process in a sustainable way after completing projects with the owner of the strategy and other interested parties.

Source: own study based on questions addressed to the EmplInno project participants.

D. What tools have enabled you to maximize profits in your region and how to overcome the difficulties arising from the use of RIS3?

Table 5.

Partnerzy	Opinie
Lubelskie Voivodeship	The Regional Innovation Strategy of the Lubelskie Voivodeship until 2020 is an important programming document that defines the most important areas for the development of the Lublin region in the context of innovation. Nevertheless, no feasibility study was prepared, and it is difficult to pinpoint and estimate the tools that would maximize profits and overcome the difficulties arising from the use of RIS3.
South-Eastern Finland University of Applied Sciences, Small Business Center	In South-Eastern Finland, the new practice was a group of stakeholders (university consortium, chamber of commerce, association of local entrepreneurs, university of applied sciences, regional development organizations, etc.), which was repeatedly called to discuss the current implementation of the strategy. Events related to EU funding and courses organized by the regional council can also be seen as a tool to improve awareness of the benefits of RIS3 services.
Prizztech Ltd	RIS3 requires more interaction and more forums that help us find a common language. The best tools are financing tools for practical solutions, pilots, experiments, etc.
Regional Council of South Ostrobothnia	In South Ostrobothnia, the University of Applied Sciences (Xamk) has a strong RDI unit that implements around 160 RDI projects financed by EU funds annually. E.g. Xamk Fiber and Environment Laboratories, Small Business Center and other RDI units work closely with SMEs and large companies and have contributed to their business development. Xamk also conducts tailor-made research for companies and engages students in development activities, eg by organizing hackathons, etc. The greatest difficulty is the fact that companies from the South Ostrobothnia region are micro-enterprises and small enterprises and there is not much opportunity to offer them incentives to participate in the RDI activities defined in the strategy of smart specialization in the region. That is why it is so important to use such procedures that bring immediate benefits to the business sector (eg Hackathon). In Southern Ostrobothnia, strategies are implemented under various projects financed mainly from EU structural funds. The current challenge is to continue the process of development by the owner of the strategy and other stakeholders in a sustainable way after the completion of projects. By constantly gathering information about the functionalities of the regional innovation and development

system and using it as a basis for making decisions, the owner of the strategy would help in sustainable regional development.

Source: own study based on questions addressed to the EmplINNO project participants.

E. How (by which indicators?) do you monitor the development of areas that they supported as smart regional specializations?

Tabela 6.

Partnerzy	Opinie
Województwo Lubelskie	Selected indicators of the extended RSI monitoring system Share of business entities operating in ROIS in the total number of enterprises The share of people working in sectors and fields recognized as RIS The number of patent applications broken down by RIS Share of enterprises introducing innovations in the total number of companies Share of enterprises implementing innovations divided into RIS Expenditures on R & D in the total region Expenditure on R & D in the region broken down by RIS Number of effectively functioning clusters in total Number of effectively functioning clusters divided into RIS Percentage of business environment institutions operating in RIS The average number of research projects related to ROIS per unit Percentage of enterprises satisfied with the level of quality and accessibility of services offered by innovation and entrepreneurship centers The average number of technologies implemented in enterprises The percentage of innovative enterprises using non-returnable funds Percentage of innovative enterprises using repayable funds The share of enterprises operating in the areas of smart specialization using the services of centers supporting entrepreneurship and innovation Percentage of entities from the areas of intelligent specializations assessing positively the efficiency of public administration The percentage of direct budgetary resources for research and development Share of net revenues from the sale of innovative products for the market to exports in net revenues from total sales Share of net revenues from the sale of innovative products for the market in net revenues from total sales in industrial enterprises Participation in the export of goods with a high degree of processing in total exports Participation in the export of goods with a high degree of processing divided into ROIS Number of enterprises conducting export activity in total Number of enterprises carrying out export activities broken down by RIS
South-Eastern Finland University of Applied Sciences, Small Business Center	Regional development statistics and key indicators, project activities. We are currently implementing a monitoring system for innovative activities in the region. The process includes around 45 different input / output innovation indicators, which are reviewed once a year.
Prizztech Ltd	We are currently working in the region to find the right indicators and monitoring tools. Our experience shows that it is very difficult.
Regional Council of South Ostrobothnia	In the regional strategy until 2030. indicators would be: - Financing development projects that research organizations in the region receive from international sources of financing.

- 
- Total amount of investment that companies transfer to research and development.
 - Average number of patents registered by organizations in the region.

Source: own study based on questions addressed to the EmplINNO project participants.

In the Kujawsko-Pomorskie voivodeship, the above mentioned five questions are answered by the Regional Innovation Strategy, within which 11 priority axes corresponding to the most important areas of the social life of the region are identified. The goals set forth in the work on the development of the Regional Innovation Strategy are described in the table below.

Area of intervention	strategic objectives	operational goals / actions	
Education	Objective I shaping innovative and creative attitudes of the region's community	Goal I.1. The development of innovative education Actions: 1. Initiation of innovative education from primary school to high school final exams. 2. Initiation of innovative vocational education	Goal I.2. development of staff education for an innovative economy Actions: 1. increasing the number of science and technical graduates 2. implementation of apprenticeship and internship program 3. training highly qualified R & D & I staff for innovative enterprises Goal I.3. shaping pro-innovation attitudes, creativity and promotion of RSI WK-P
Science	Objective II shaping the science sector as the backbone of an innovative economy	Goal II.1. development of research and development potential for an innovative economy Actions: 1. Establishment of scientific and research infrastructure providing services for the economy 2. Implementation of systemic cooperation between universities and scientific units with industry	Goal II.2. The development of highly advanced scientific research Actions: 1. Shaping the region's specialization in highly advanced scientific research
Economy	Objective III shaping the regional economy based on knowledge and innovation	Goal III.1. Development of innovativeness and network connections of enterprises Actions: 1. Building innovation of companies through R & D 2. Building innovation in the sector of micro and small companies 3. Creating network and international connections	Goal III.2. Strengthening the impact of the business network Actions: 1. Shaping pro-innovative consulting services and integration of business environment institutions 2. Development of industrial and technological parks 3. Extension of regional financial instruments 4. Shaping innovative public administration
"Digital envelope"	shaping the economy based on universal access to the super-fast Internet network	"Envelope" Goal Development of the Internet network infrastructure Actions: 1. Implementation of the next generation internet network	"Envelope" 2 Goal Development of an innovative digital economy Actions: 1. Research in the field of IT and highly advanced IT applications



61 %

Funds available under the ERDF
in dimension
EUR 1 368 083 592



24 %

Funds available under the ESF
in dimension
535 456 695 euros



15%

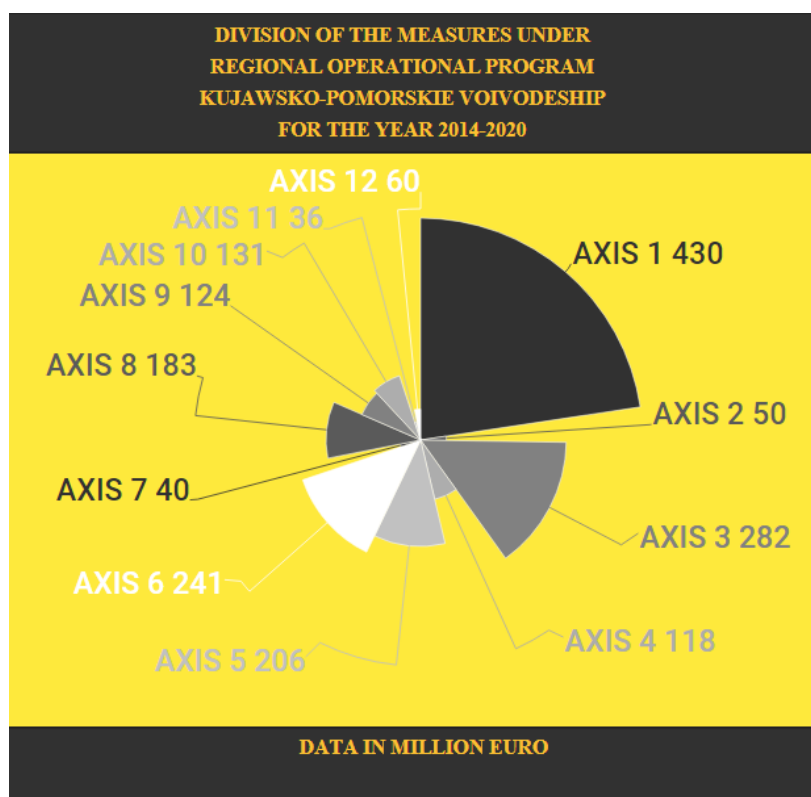
Own contribution to the ROP
in dimension
~ EUR 335,000,000

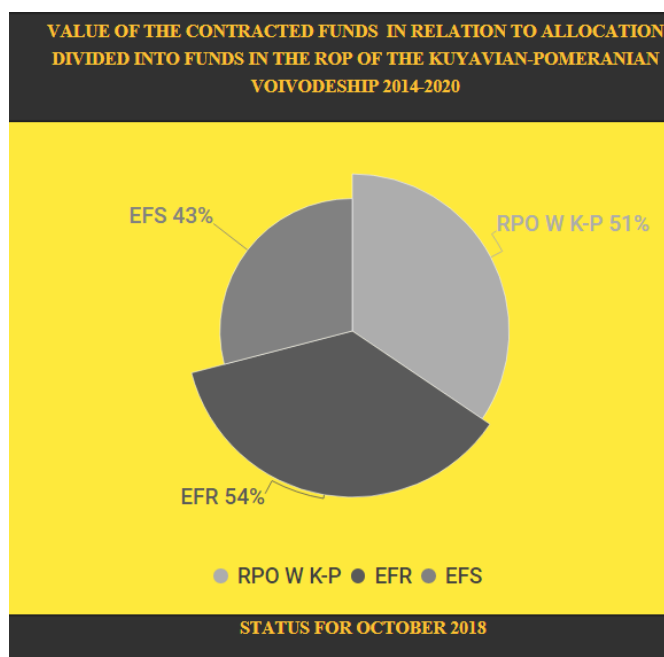
Under the ROP WK-P 2014-2020, the Kujawsko-Pomorskie region will receive 1.9 billion euros from Brussels. 72% of this amount will come from the European Regional Development Fund and will be spent on infrastructure investments. 28% are funds from the European Social Fund for social purposes. Including 335 million euros from the so-called of the national contribution to the program, this means that the implementation of the ROP WK-P 2014-2020 will amount to EUR 2.23 billion - about PLN 9.5 billion. The funds, as part of the entire program, were divided into 11 priority axes:

- Priority axis 1. Strengthening innovation and competitiveness of the region's economy - almost 430 million euros
- Priority axis 2. Digital region - over EUR 50 million
- Priority axis 3. Energy efficiency and low-carbon economy in the region - over 282 million euro
- Priority axis 4. Environment-friendly region - over EUR

118 million

- Priority axis 5. Internal cohesion and external accessibility of the region - almost 206 million euros
- Priority axis 6. Solidarity society and competitive staff - ERDF - over EUR 241 million
- Priority axis 7. Local development led by the community - nearly EUR 40 million
- Priority axis 8. Active on the labor market - over EUR 183 million
- Priority axis 9. Solidarity society - over EUR 124 million
- Priority axis 10. Innovative education - over EUR 131 million
- Priority axis 11. Local development led by the community - over 36 million euro
- Priority axis 12. Technical assistance - almost EUR 60 million





Priority axis 1. covers the implementation of thematic objective 1: Strengthening research, technological development and innovation and thematic objective 3: Strengthening the competitiveness of SMEs, the agricultural sector, the fisheries and aquaculture sector. Support under the first objective will be primarily aimed at stimulating the research and development activity of enterprises, including academic entrepreneurship. In order to create better conditions for commercialization of the results of research and development, it will also be necessary to provide infrastructure support for scientific units - this will enable the creation of a scientific base for the needs of smart specializations of the region. As part of the second of the objectives pursued under the axis, the financial resources will be used both for direct support of SMEs - especially through financial instruments and indirect support of SMEs by improving the quality of services provided by business environment institutions, as well as creating favorable conditions for the development of enterprises through creation / development of infrastructure for economic development. In addition, as part of the priority axis, enterprises will be able to obtain advisory and financial support for projects involving the introduction of new business models, in particular those related to the internationalization of their business.

Priority axis 1 includes within its scope 5 specific objectives, these are:

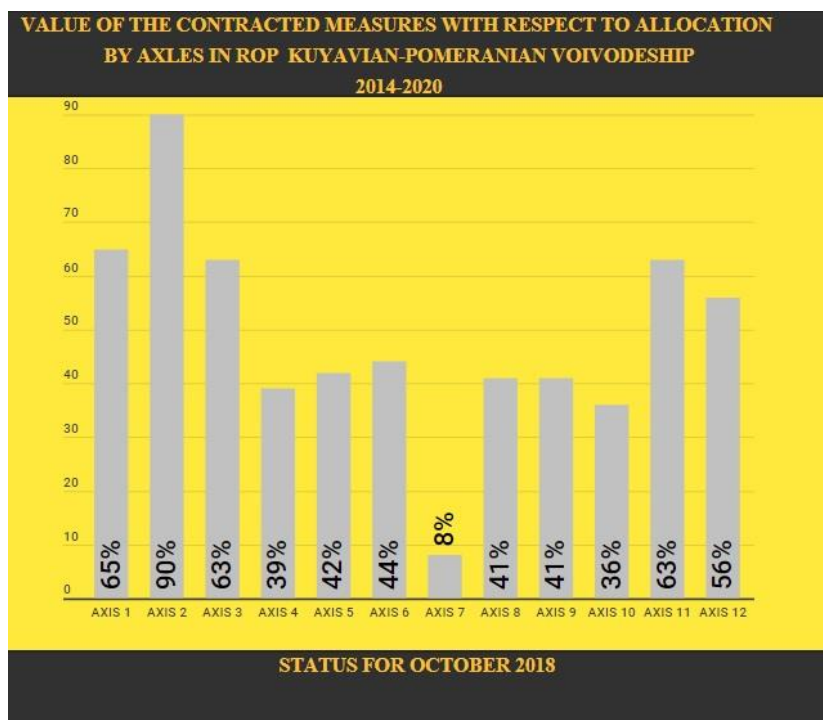
Specific objective 1: Increased marketization of research and development activities

Specific objective 2: Increased research and development activity of enterprises

Specific objective 3: Better conditions for SME development

Specific objective 4: Increased level of foreign trade in the SME sector

Specific objective 5: Increased use of innovations in enterprises in the SME sector



The following investment priorities have resulted from the objectives set out in the Regional Innovation Strategy:

Investment priority: Improvement of research and innovation infrastructure

- infrastructure projects related to research and development infrastructure included in the Polish Map of Research Infrastructure or in the Territorial Contract.

Investment priority: Promoting corporate investment in research and innovation

- support for the entire research and development (R & D) process in enterprises (commencement and development of R & D activities);
- financing the purchase and implementation of results of R & D works purchased from scientific units;
- support for activities that stimulate the creation of long-lasting links between the business sector and the science sector.

Investment priority: Promoting entrepreneurship

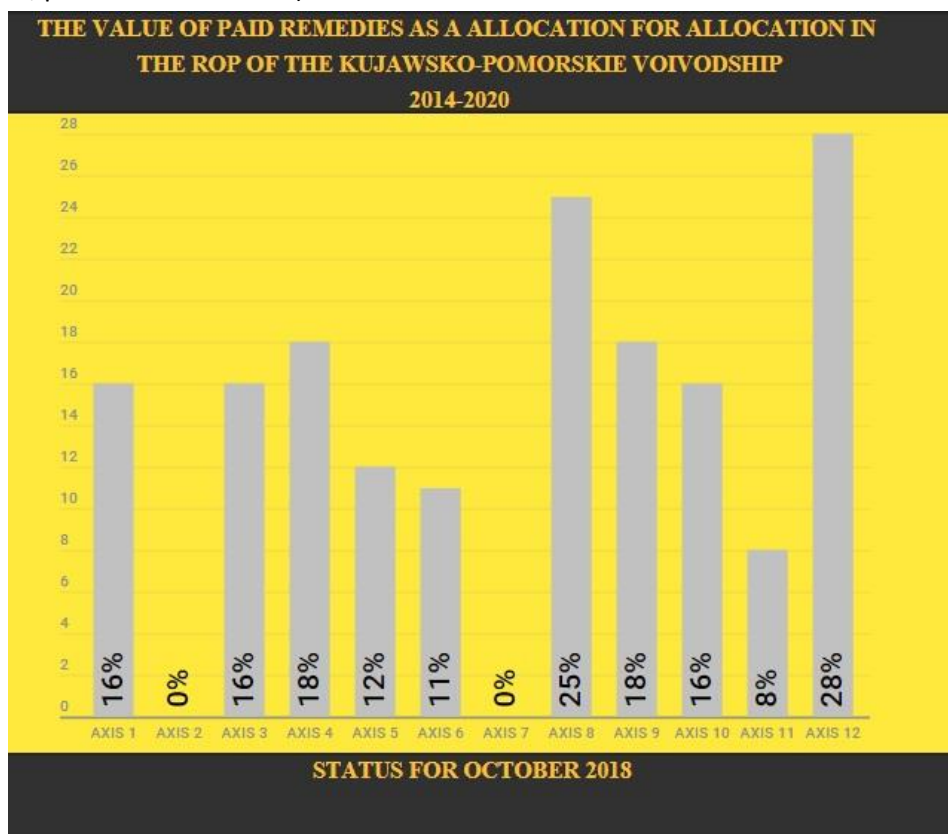
- support for enterprises at an early stage of development;
- supporting the creation of business infrastructure in the region (land setting, demonstration centers, etc.);
- professionalisation of services offered by business environment institutions and adjusting their offer to business needs.

Investment priority: New business models

- support for enterprises focused on international expansion (advisory support, adaptation to the needs of foreign markets, cooperation with foreign partners);
- dissemination of new business models related to the use of information and communication technologies for the development, diversification or improvement of the company's operational efficiency.

Investment priority: Investment support for enterprises in the field of product and service development

- support for product, process, marketing and organizational innovations in companies (purchase of equipment, production machines).

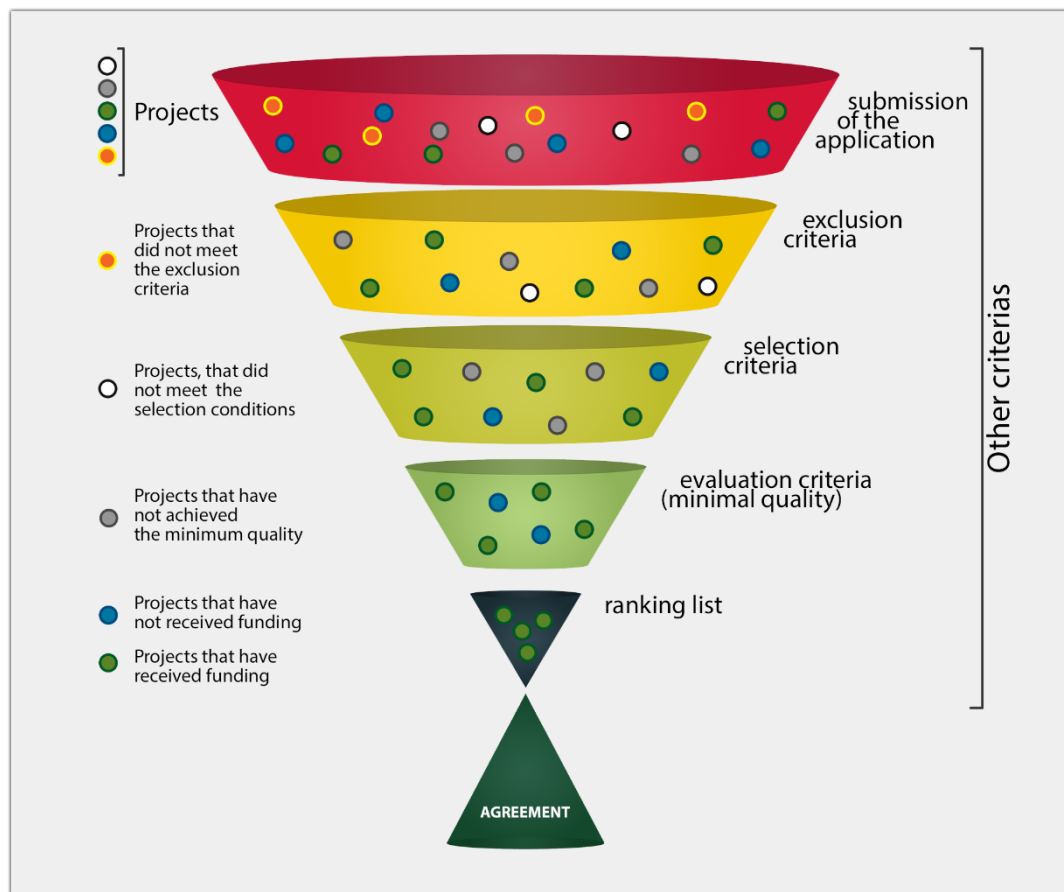


Tasks included in Priority Axis 1 are implemented through the **Kujawsko-Pomorska Agencja Innowacji Sp. z o.o. (KPAI)**, as well as through competition activities of the Marshal's Office of the **Kujawsko-Pomorskie Voivodeship** as the Managing Authority of the Regional Operational Program of the Kujawsko-Pomorskie Voivodeship.

As part of the implementation of Axis 1 of the ROP WK-P, 26 competitions were conducted and 201 contracts were signed out of 237 submitted applications. Up to now 65% of the available funds allocation has been used. Approved applications for payment as at 28/09/2018 is 22.07% of the available allocation, while the amount applied for to the EC is 17.17% of allocation available for axis 1.

As examples of competitions announced or implemented under Axis 1, you can indicate, among others:

- Support for the internationalization of enterprises [competition no. RPKP.01.05.02-IZ.00-04-085 / 17]
- Support for research and development processes [competition no. RPKP.01.02.01-IZ.00-04-195 / 18]
- SME support through business environment institutions [competition no. RPKP.01.04.02-IZ.00-04-123 / 17]
- Support for research and development processes in academic enterprises [competition No. RPKP.01.03.01-IZ.00-04-038 / 16]
- Subsidies for innovative SMEs [competition No. RPKP.01.06.02-IZ.00-04-028 / 16]



Among the projects implemented by KPAI, please indicate:

1. **Fund for Research and Implementation** - implemented within Priority axis 1 Strengthening innovation and competitiveness of the region's economy, Measures 1.2 Promoting enterprises' investments in research and innovation, Sub-measures: 1.2.1 Support for research and development processes, Scheme: grant projects, Regional Operational Program of the Region Kujawsko-Pomorskie for the years 2014-2020. It is a grant project with an allocation of PLN 38.5 million including two support modules:

- module 1 - support for conducting research and development works by enterprises, with an allocation of PLN 36 million
- module 2 - support for obtaining industrial property protection (the so-called patent voucher) with an allocation of PLN 2.5 million

2. **Research and Implementation Fund - Research voucher** - it should be noted that it is implemented under Priority axis 1 Strengthening innovation and competitiveness of the region's economy, Measure 1.2 Promoting corporate investment in research and innovation, Sub-measures: 1.2.1 Support for research and development processes. The project envisages grant projects awarded as part of the implementation of the Regional Operational Program of the Kujawsko-Pomorskie Voivodeship for the years 2014-2020. It assumes support for enterprises from the Kujawsko-Pomorskie Voivodeship by granting them a subsidy for the purchase of research and development works purchased from external entities that are scientific units on the terms of full competition. The voucher covers the allocation of PLN 16 million.

3. The return instrument which is the **Kujawsko-Pomorski Fund for Research and Implementation-Loans** established by a consortium of companies "Kujawsko-Pomorski Fundusz Pożyczkowy, Kujawsko-

Pomorska Agencja Innowacji". The loan fund includes PLN 18 million available to entrepreneurs for research and first productions.

The KPAI experience related to the implementation of the Research and Implementation Fund - Research Voucher proves that entrepreneurs from the region need and expect to create grant programs within the ROP, which directly translate into the development and innovative nature of their business operations based on smart specializations. Subsequent competition calls indicate that an appropriate subdivision of funds is necessary. Currently, **projects implemented under the RPO must be linked to smart specializations**. Subsequent recruitments proved that some entrepreneurs have a problem in locating their project in one of the IS, hence the key is to place other groups within them - these are to include the unidentified development potential of the region. Thus, the key action is to make available, within the available allocation, funds for projects that do not fit into specializations based on values or technologies - that is, those which, as part of **entrepreneurial discovery**, have the potential to become an important branch of the regional economy.

It should be noted that depending on the size of the allocation, the type of competition, the expected results and results, and the obligatory membership in the IS, a specific project selection scheme is used. As part of the project implemented by KPAI - Research and Implementation Fund - Research Voucher, the option is based on the assumption that X% of funds is allocated to five specializations based on values, while Y% for horizontal specializations, and Z% for "other" in entrepreneurial discovery. When submitting the application, the applicant selects the leading IS area and (optionally) indicates the horizontal specialization (depending on the competition). The use of "horizontal specializations" may be obligatory at the selection stage or be included in the assessment. Projects from the "other (entrepreneurial discovery)" category would be assessed in relation to their potential application in existing specializations and the potential to select a new IS area. It is proposed to increase their scope for evaluation, especially as regards their market potential and mobilization of private capital. Variants should be used with a proportion or weights (percentages) adequate to the type of competition or the size of the allocation or co-financing. KPAI recommends that the value of X be higher than or equal to 60%.

The tasks described in the ROP in K-P are also implemented in cooperation with the following Business Environment Institutions appointed by the Self-government of the Kujawsko-Pomorskie Voivodeship:

TARR – Toruńska Agencja Rozwoju Regionalnego - Toruń Regional Development Agency

BARR – Bydgoska Agencja Rozwoju Regionalnego - Bydgoszcz Regional Development Agency

KPFP – Kujawsko-Pomorski Fundusz Pożyczkowy - Kujawsko-Pomorskie Loan Fund

KPFR – Kujawsko-Pomorski Fundusz Rozwoju- Kujawsko-Pomorskie Development Fund

KPFPK - Kujawsko-Pomorski Fundusz Poręczeń Kredytowych - Kujawsko-Pomorskie Loan Guarantee Fund

Chapter V.

Recommendations for the MA based on good domestic and foreign practices, improving the implementation of RIS3, including: program, axis, activity, main stakeholders, sources of financing, how to monitor the proposed changes

From the document "Regional Innovation Strategy of the Kujawsko-Pomorskie Voivodeship for the years 2014-2020" approved in October 2014, the following strategic and operational goals are

expected to ensure dynamic growth of the region's innovation, so that by 2020 the Kujawsko-Pomorskie Voivodeship will take the fifth place on the national scale:

- 1. Introduction of innovative education from primary school to high school** – this action is aimed at the systemic and comprehensive development of science and at the level of primary, lower secondary, general and general education as well as vocational education.
- 2. Introduction of innovative vocational education** – it is an activity focused on the needs of modernization and development of vocational education, which should respond to the requirements of modern regional economy, prepare graduates to work in companies in the region, as well as maintain strong links with sectors of the economy occurring in the region.
- 3. Increasing the number of science and technical graduates** – the main objective of this task is to increase the number of students in science and technology, as well as to increase the number of PhD students in science, nature, medical and agricultural sciences, which involves improving the quality of education, providing knowledge and skills expected by regional enterprises.
- 4. Implementation of apprenticeship and internship programs** – the task of this activity is to support the organization of internships and apprenticeships, which are aimed at preparing students, PhD students and graduates to undertake professional work in the voivodeship.
- 5. Education of highly qualified R & D & I staff for innovative companies** – the task of this activity is to support the development of highly qualified personnel for enterprises that know the specifics of conducting R & D & I work by supporting a close, systematic linking of doctoral theses with regional industry, as well as providing a knowledge base for employees of R & D departments in the region.
- 6. Establishment of scientific and research infrastructure providing services for the economy** – the task of this activity is to build or expand the scientific and research potential in order to enable the provision of highly advanced R & D services for the economy.
- 7. Implementation of systemic cooperation between universities and scientific units with industry** – the aim of this action is to develop cooperation between universities and research units with industry by supporting the creation of organizational units that are responsible for the overall preparation and implementation of a strategy for the development of university or scientific unit cooperation with regional industry, especially in the area of smart specializations.
- 8. Shaping the region's specialization in highly advanced scientific research** – the task of this action is to raise the level of research carried out by supporting the extension of the laboratory base and research projects that aim to develop highly advanced scientific research related to the shaping of regional scientific specialties that support the development of innovation in the regional economy.
- 9. Building innovation of companies through R & D** – the purpose of this action is to build a competitive advantage of enterprises based on innovation.
- 10. Building of innovation in the sector of micro and small companies** – the goal of this activity is to build a competitive advantage based on innovation in the micro and small enterprises sector by offering support to purchase advisory services, as well as support in the creation of new companies (spin-off, spin-out and start-up) based on innovations and/or knowledge developed in universities and scientific units.

11. Creating network and international connections – the goal of this activity is to create and develop network connections between enterprises in order to strengthen cooperation that will increase the potential of companies by achieving synergy effect, which in turn will allow enterprises of the region to compete on a global scale, develop export of new, innovative products, undertake investments outside borders of the country and improve human resources.

12. Shaping pro-innovative consulting services and integration of business environment institutions – the purpose of this measure is to support the development of the regional economy, in particular micro, small and medium-sized enterprises, through the development of pro-innovative consulting services offered by business environment institutions.

13. Development of industrial and technological parks – the purpose of this measure is to support the development of infrastructure, serving the development of enterprises in the form of industrial parks and technology parks.

14. Expansion of regional financial instruments – the purpose of this measure is to support the development of enterprises' innovativeness through the development of the regional sphere of financial engineering instruments as providers of financing necessary to implement pro-innovative ventures.

15. Shaping innovative public administration – the purpose of this measure is to support the development of innovative public administration through the introduction and improvement of e-government services, and the introduction of a modern procurement system, consistent with the new innovative approach to public procurement, aimed at stimulating innovation by creating demand for innovative products, services and technologies.

16. Implementation of the next generation Internet network – the purpose of this activity is to identify the currently operating infrastructure of the Internet network, plan the development and development of the next generation Internet network with a transmission speed of 30 Mbps and 100 Mbps throughout the province.

17. Research in the field of IT and highly advanced IT applications - the goal of this measure is to develop an innovative digital economy by supporting research into the development of new data processing technologies, stimulating demand for new solutions and systems, and supporting the implementation of new solutions in the regional economy.

The above objectives have been described in detail in the RIS WK-P document. In terms of increasing innovation in the Kujawsko-Pomorskie Voivodeship, it is planned to achieve this through various types of interventions in several areas. The first level concerns the development of scientific research as the primary source of innovation. The second level is the development and dissemination of information technology (ICT) as a currently widely applicable tool for all types of services, administration, trade and production control. The third area is the building of business environment institutions facilitating the transfer of modern technological, product and organizational solutions for building a system of cooperation between the sphere of science, the sphere of entrepreneurship and the sphere of administration. On the above planes, which are to be developed, the so-called system is applied. Intelligent specializations, or specific regional specializations, which are a flagship of the Kujawsko-Pomorskie Voivodeship. The Strategy defines the directions of actions (12 points) and projects identified so far (17 points). There is a lack of information on what has been done in this regard and what is the fate of these projects, which were identified at the time of the RIS WK-P document.

The implementation of smart specializations of the Kujawsko-Pomorskie Voivodeship, which are defined as follows, is for the purposes of RIS WK-P:

1. Smart specializations based on values:

- a) Healthy and safe food,
- b) Health and health tourism,
- c) Advanced materials and tools,
- d) Transport and mobility,
- e) Cultural heritage and creative industries.

2. Smart specializations based on technologies (horizontal smart specializations)

- a) ICT services,
- b) Eco-innovation,
- c) Industrial automation,

3. Others - entrepreneurial discovery.

The basic element concerning strategic documents is their monitoring. According to the methodology, the issues related to monitoring the strategic document are included in its content, thus ensuring a comprehensive development in one document. Like most phenomena and processes occurring in society and the economy, also innovation is subject to various types of assessments, made through the prism of specialistic indicators and rankings. From the point of view of this study, the assessment of the innovative potential of the Kujawsko-Pomorskie Voivodeship is extremely important. In accordance with the adopted assumptions, the implementation of the "Regional Innovation Strategy of the Kujawsko-Pomorskie Voivodeship for 2014-2020" is intended to bring about a number of positive changes in the socio-economic sphere of the voivodeship. Ultimately, this is to be reflected in the indicators of economic and social development, which should ultimately be located in the top five regions in Poland. Until the adoption of RIS WK-P, these assessments were made in relation to the innovative potential of the provinces.

In RIS WK-P it was determined that the task of the monitoring system, which was based on the institutional organization (Pic. 3), will be control in the field of education, science and economy, which will allow to analyze the strengths of the Kujawsko-Pomorskie region and areas that require increased support and attention for increasing the competitiveness of the Kujawsko-Pomorskie region on a national and European scale. Monitoring activities are based on the measurement of indicators that allow to react on possible irregularities and make necessary corrections. RIS WK-P assumes monitoring, consisting in measuring indicators that will be performed in relation to projects - in the current mode, in turn in relation to the Strategy's activities and in the case of a strategic objective and operational objectives - cyclically (every year, every two, every three years) patch).

The proposed RIS WK-P monitoring system in the area of smart specializations should now be assessed as being in line with the National Intelligent Specialization monitoring assumptions, which is based on the following criteria:

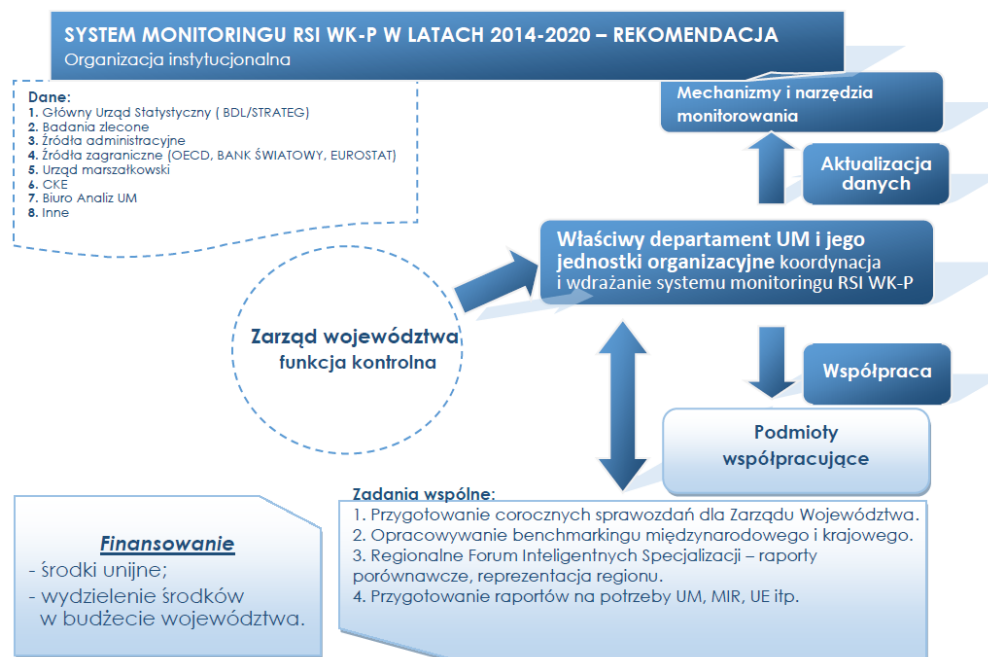
- results of competitions for key clusters, being territorial clusters of economic activity of particular importance for the country/region,
- changes in the export and investment structure of enterprises,
- implementation of research results, their dissemination and commercialization,
- raising the research potential in enterprises,
- emerging niche markets,
- results of scientific and research works,
- effects of Operational Programme Innovation Economy and Operational Programme Innovation Development projects implementation,
- results of the economic observatory (selected representatives of the business),
- changes in the employment structure in the areas of specialization.

Analysis of the implementation of the "Regional Innovation Strategy of the Kujawsko-Pomorskie Voivodeship for 2014-2020", including its monitoring process, requires analysis also of other strategic and program documents with which "RISWK-P" is related. These documents are "Development Strategy for the Kujawsko-Pomorskie Voivodeship until 2020 - Modernization Plan 2020+", "Regional Operational Program of the Kujawsko-Pomorskie Voivodeship for 2014-2020", including "Detailed Description of Priority Axes of the Regional Operational Program of the Kujawsko-Pomorskie Voivodeship on years 2014-2020 ". The indicators resulting from the goals of these strategic and program documents may influence the development of innovation in the Kujawsko-Pomorskie Province. The analysis of the implementation of "RISWK-P", including issues related to its monitoring, should be conducted in the theoretical and practical context, because this approach allows for a comprehensive examination and will provide real results.

"Regional Innovation Strategy of the Kujawsko-Pomorskie Voivodeship for 2014-2020" has been implemented for over 3 years. This means that currently we are at the halfway point of its implementation. This moment prompts us to summarize what has been done, where the delays occurred and what else needs to be done. Attempts have been made to formulate conclusions and recommendations for achieving the assumed goals and indicators. The performed RIS WK-P research indicated the development of the RIS WK-P monitoring practice consistent with the theoretical assumptions.

Such practical actions should be:

1. establishment of a new entity or entrusting permanently to a given entity the sentences related to the overall issues related to RIS WK-P, which will successively operate in the field of monitoring the implementation of RIS WK-P,
2. providing the abovementioned entity with the possibility of employing staff/appointing a team of people who will have appropriate competences in organizational and substantive areas for strategic documents and their monitoring,
3. planning and transferring financial resources for management to the entity that has been mentioned above, including remuneration for a team of people and financial resources for activities related to conducting RIS WK-P monitoring (preparation and performance of research or commissioning and analysis, development and publication of results). The monitoring showed that there are many activities to be carried out, including studies on many indicators that require large financial outlays,



Pic. 5.

Source: Annex to Resolution No. 2/14/15 of the Management Board of the Kujawsko-Pomorskie Voivodeship of January 14, 2015 regarding the adoption of the development program named "Regional Innovation Strategy of the Kujawsko-Pomorskie Voivodeship for 2014-2020", p. 106.

Translation of the picture on page number 47

4. very thorough verification of indicators included in RIS WK-P. The results of competitions announced as part of the ROP WK-P testify to the development of region's innovation. However, there is no guarantee that this is sufficient to achieve the main indicator - the occupation by the Kujawsko-Pomorskie Voivodeship of the 5th place in the scale of the country in terms of innovation. That is why it is important to set indicators that will provide a lot of meaningful information in the field of innovation. In this area it is worth reviewing the main indicators and background indicators, changing the status of specific indicators from the background to the main and main ones to the background, or removing specific indicators and introducing new indicators measuring innovation,

5. apart from this, it is necessary to systematically monitor changes taking place in the country and voivodeship, including legal and organizational changes that bring with them many consequences in terms of indicators (their names, monitoring reason, or the necessity of adding or giving up a given indicator) and their analysis,

6. to the extent necessary for proper monitoring of RIS WK-P indicators, among others information on who should aggregate specific data, what tools can be used in this area, in what form data should be collected and processed. It is also necessary to set deadlines in which aggregation of data should take place and to which such data should be processed and delivered to the relevant entity, and appropriate methods and tools for collecting such data should be developed. This information would certainly allow all relevant institutions and organizational units to plan the necessary activities. Therefore, information measures are necessary addressed to competent institutions and organizational units in order to inform them about the need to collect and provide data in the areas required for RIS WK-P indicators.

The above actions will contribute to the proper verification of RIS WK-P and especially its monitoring, which provides information on the size of individual indicators, and, above all, the levels of achieving the objectives set in RIS WK-P, among others how the process of achieving by the Kujawsko-Pomorskie Voivodship 5th place in the scale of the country in the field of innovation progresses.

Good practices:

The analysis of the experience of the EmpINNO program Partners and the documents created by the regional authorities allowed for the development of a catalog of good practices recommended to the Managing Authority RPO WK-P for implementation in order to process the process implement smart specializations.

1. Create competence centers in the field of R&D. They must respond to the challenges of the entire region. Their strong impact on the entire region or the even distribution of institutions in the region is necessary.
2. The preparation of the strategy should be based on the experience of previous years. Subsequent strategies should overlap, designing goals so that they are valid in the long term, so that they can evolve and not have to undergo a revolution
3. The pursuit of RDI and R&D development must be supported by the preparation of adequate capital.
4. Co-ordinate cooperation between public and private spheres in the field of R & D, e.g. through triple or quadruple helix (Ostergotland model). It is necessary to create or rebuild existing institutions so that they can initiate, coordinate and support the activities of market participants.

5. Acting according to the scheme VISION-MISSION-STRATEGY will allow only important activities to be undertaken.
6. It is necessary to support existing and create new BEIs by:
 - creating clusters, incubators, live laboratories, arenas of open innovation. These institutions should have a wide range of activities, freedom of action, large decision-making autonomy, can not act in a rigid framework of regulations reserved for ordinary government or self-government administration units, should trigger creative ferment, can not act on the principle that each action must bring to the institution direct profit,
 - support for training and coaching skills,
 - creating opportunities for the development of entrepreneurship,
 - initiatives confronting business with science and administration,
 - work on strengthening relationships and increasing understanding of the needs of market participants
 - B2B meetings,
 - ubiquitous Internet,
 - Construction of technology development centers,
 - Developing business know-how, Creating a "future company's scheme".
7. Emphasizing the specialization / profile of the region.
8. Creation of a growth/development mechanism/model mode of operation for start-ups.
9. There is a need to organize meetings, seminars and workshops combining representatives of administration, business, science, expert circles and NGOs in order to better cooperate with these entities,
10. Prioritization of efforts, cost-effect calculation for undertaken activities.
11. Evaluation and evaluation of projects and activities:
 - should take place at the project entry (ex ante), at the end (ex post), in the middle of the project,
 - annual,
 - should result in a correction of actions and strategies,
 - self-evaluation of project participants,
 - evaluation is focused on feedback, drawing and implementation of conclusions.
12. The regional territorial observatory should provide statistical data from the region that will allow a reliable analysis of the use of RIS.
13. Applying a hybrid strategy - creating future domestic opportunities and comparative advantage, and integrating pioneer technological research.
14. It is necessary to support not only the region's capabilities, which are firmly rooted in tradition or widely available, but above all those with a high growth potential.
15. In order to assess the assumed goals, profit / loss balances, +/- applied, should be used to avoid low-value activities.
16. The budgets of competitions should include enabling projects to support those that directly fit into the existing Smart Specializations and those related to other categories - projects that can become new, unidentified niches as part of entrepreneurial discovery
17. Resignation from the quantitative criterion in implemented projects for a substantive qualitative assessment carried out by highly qualified experts,
18. Experts appointed to evaluate projects must have a wide and specialized knowledge in the area of already existing Smart Specializations and development potentials of the region.

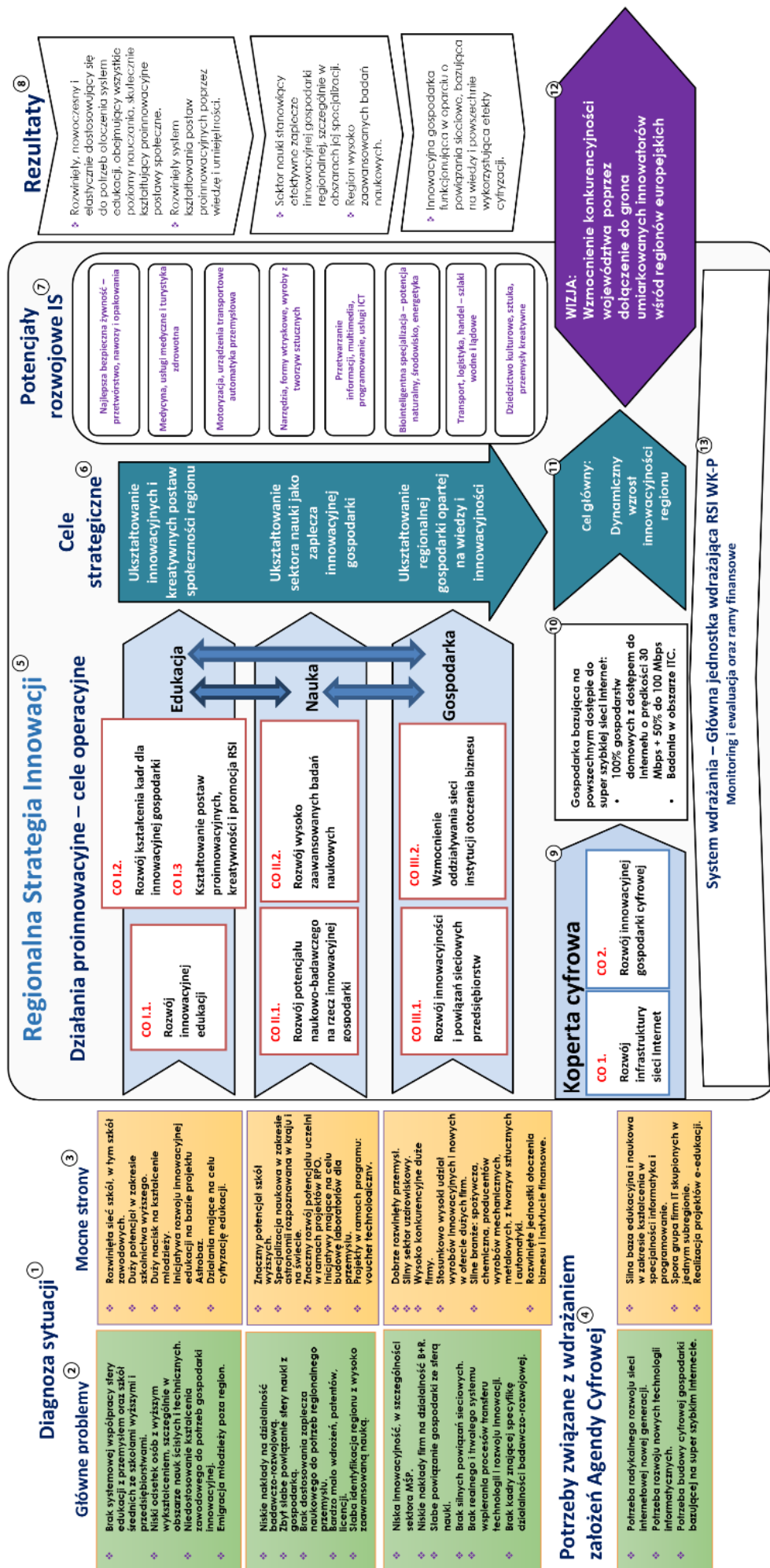
The analysis of the above-mentioned applications of the EmplInno project Partners shows that they use similar tools for the development and implementation of innovations in their regions. The type and selection of tools depends on the specificity of the region and financial and organizational possibilities. However, there are no solutions unknown or not previously used in the Kujawsko-Pomorskie Voivodeship among these recommendations. We can only indicate that we were the only ones who proposed introducing the so-called other smart regional specializations as a result of entrepreneurial discovery. This

tool allows you to expand the list of smart regional specializations with new specializations resulting from the development of new technologies.

The key issue is therefore consistent implementation of the objectives set out in RIS3 WK-P and the emphasis on monitoring the obtained results.

Sources/attachments:

1. EmplInno_Getting Regional Smart Specialisation Strategies closer to business
2. EmplInno_5th Meeting Kolding_RIS3_Region of Southern Denmark
3. EmplInno_6th Meeting Lublin_RIS3_Lubelskie
4. EmplInno_7th Meeting Tartu_WP4_RIS_South Estonia
5. EmplInno_8th meeting Kaunas_WP2_Feedback Paper_PP13
6. EmplInno_8th meeting Kaunas_WP4_RIS3 Lithuania
7. EmplInno_WP4_RIS3 Region Östergötland complete
8. EmplInno_WP4_RIS3_presentation_Gavleborg
9. EmplInno_WP4_RIS3_South_Savo_Regional Council_presentation_14062016
10. The RIS3 of Mecklenburg-Vorpommern
11. The RIS3 of the Republic of Latvia
12. The RIS3 of South Ostrobothnia
13. The RIS3 of Kujawsko-Pomorskie Voivodeship
14. Region of Southern Denmark - Strategy 2012-2020-web (1)
15. Hemmingsen_Commercialdevelopmentstrategy_dec12
16. Strategia_rozwoju_województwa_kujawsko-pomorskiego_do_roku_2020_-_plan_modernizacji_2020+
17. Regionalna Strategia Innowacji Województwa Kujawsko-Pomorskiego na lata 2014-2020
18. Raport z realizacji Strategii Rozwoju Województwa kujawsko- Pomorskiego do roku 2020- PLAN modernizacji 2020+ w 2017 r.
19. Regionalny Program Operacyjny Województwa Kujawsko-Pomorskiego na lata 2014-2020 (CCI 2014PL16M2OP002)
20. Raport stanu Regionalnej Strategii Innowacji WojewództwaKujawsko-Pomorskiego na lata 2014-2020za rok 2017
21. Inteligentne specjalizacje województwa kujawsko-pomorskiego – charakterystyki obszarów inteligentnych specjalizacji dla projektów realizowanych w ramach Regionalnego Programu Operacyjnego Województwa Kujawsko-Pomorskiego na lata 2014-2020
22. Guide to Research and Innovation Strategies for Smart Specialisations (RIS 3)
23. Broszura: Kujawsko - Pomorskie inteligentne specjalizacje
24. Broszura: Innowacyjny region kujawy i pomorze
25. Obszary-inteligentnych-specjalizacji-dla-projektow-w-ramach-rpo-wk-p
26. Badanie przedsiębiorstw oraz instytucji otoczenia biznesu
27. Polska wielu prędkości. Bank Millennium przyjrzał się innowacyjności województw. - Bank Millennium



1. Diagnosis of the situation

2. Main problems

- lack of systematic cooperation between the sphere of education and industry as well as secondary schools with universities and enterprises
- low percentage of people with higher education, especially in the area of exact and technical sciences.
- The maladjustment of vocational education to the needs of the Innovative economy
- Emigration of young people outside the region.
- Low expenditures on research and development.
- Too weak connection between the sphere of science and economy.
- Lack of adaptation of the scientific background to the needs of the regional industry.
- Very few implementations, patents, licenses.
- Poor region identification with highly advanced science.
- Low Innovation, especially in the SME sector.
- Low expenditure of companies on R & D.
- Poor connection of the economy with the sphere of science.
- No strong network connections.
- Lack of a real and durable system supporting technology transfer processes and innovation development.
- Lack of staff familiar with the specificity of operations and research and development.

3. Strengths

- A developed network of schools, including vocational schools.
- Big potential in the field of higher education.
- Great emphasis on educating young people.
- Initiative for the development of innovative education based on the Astrobaz project.
- Activities aimed at digitizing education.
- A significant potential of universities
- Scientific specialization in the field of recognition astronomy in the country and in the world.
- Significant development of the university's potential as part of ROP projects.
- Initiatives to build laboratories for industry.
- Projects under the technology voucher program.
- Well-developed industry.
- A strong spa sector.
- Highly competitive large companies.
- A relatively high share of innovative and new products in the offer of large companies.
- Strong industries: food, chemical, manufacturers of mechanical products, metal products, plastics and automation.
- Developed business environment units and financial institutions.

4. Needs related to the implementation of the Digital Agenda

- The need for a radical development of the new generation of Internet network.
- The need to develop new IT technologies.

- Strong educational and scientific base in the field of education in the specialty of computer science and programming.

• The need to build a digital economy based on super fast internet.	• A large group of IT companies concentrated in one subregion. • Implementation of e-education projects.
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5. Regional Innovation Strategy

pro-innovative activities - operational goals

CO.I.1 The development of innovative education	CO.I.2 Development of staff education for an innovative economy CO.I.3 Shaping pro-innovation attitudes, creativity and promotion of RIS	Education
CO II.1 Development of research and development potential for an innovative economy	CO II.2 The development of highly advanced scientific research	Science
CO III.1 Development of innovativeness and network connections of enterprises	CO III.2 strengthening the impact of the network of business environment institutions	Economy

6. Strategic objectives

- shaping innovative and creative attitudes of the region's community
- shaping the science sector as the backbone of an innovative economy
- shaping the regional economy based on knowledge and innovation

7. IS development potentials

- the best safe food - processing, fertilizers and packaging
- medicine, medical services and health tourism
- motorization, transport equipment, industrial automation
- tools, injection molds, plastic products
- Information processing, multimedia, programming, ICT services
- Biointelligent specialization, natural potential, environment, energy
- Transport, logistics, trade - water and land routes
- Cultural heritage, art, creative industries

8. Results

- Developed, modern and flexible education system that adapts to the needs of the environment, covering all levels of education, effectively shaping pro-innovative social attitudes.
- The developed system of shaping pro-innovation attitudes through knowledge and skills.

- The science sector is an effective base for an innovative regional economy, especially in the areas of its specialization.
- A region of highly advanced scientific research.
- Innovative economy functioning in the context of networking, based on knowledge and widely using the effects of digitization.

9. **“Digital Envelope”**

CO 1. development of internet network infrastructure

CO 2. development of an innovative digital economy

10. **Economy based on universal access to the super fast Internet network:**

- 100% of households with access to the network with a speed of 30 mbps + 50% to 100 Mbps
- research in the field of ICT

11. **Main goal:**

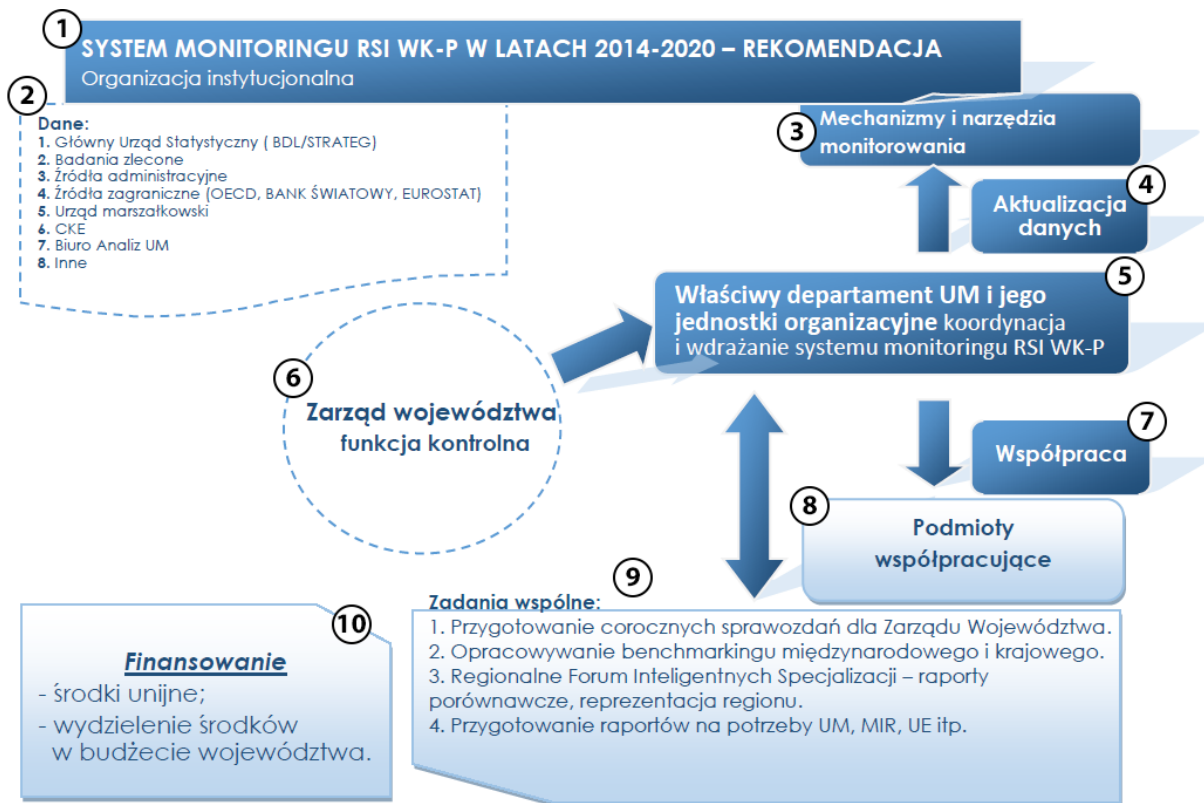
dynamic growth of region's innovativeness

12. **Vision:**

strengthening the competitiveness of the province by joining a group of moderate innovators among European regions

13. **Implementation system - main unit implementing RIS WK-P**

Monitoring and evaluation as well as financial framework



1. Monitoring system of RIS WK-P in years 2014-2020 – recommendation

Institutional organization

2. Data:

1. GUS (Central Statistical Office)
2. Commissioned research
3. Administrative sources
4. Foreign sources (OECD, WORLD BANK, EUROSTAT)
5. Marshal Office
6. CKE
7. Analysis Office
8. Others

3. Monitoring mechanisms and tools

4. Data update

5. Proper department of Marshal Office and its organizational units coordination and implementation of the monitoring system RIS WK-P

6. Voivodeship board control function

7. Vooperation

8. Cooperating entities

9. Common tasks

1. Preparation of annual reports for the Voivodeship Board.
2. Development of international and national benchmarking.
3. Regional Forum of Smart Specializations - comparative reports, representation of the region.
4. Preparing reports for the needs of the Marshall Office, MIR, EU etc.

10. Financing

- EU funds
- separation of funds in the voivodeship budget