



RIS3OK

RIS3 Strategy of the Olomouc Region

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2022 update

Considered and approved by the Regional Innovation Council of the Olomouc Region.
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1 | **Abbreviations**

BUT	Brno University of Technology
CAS	Czech Academy of Sciences
CCI	Cultural and Creative Industries
CCIIP	Czech-Israeli Innovations and Partnership Centre
CEITEC	Central European Institute of Technology
CLLD	Community-led Local Development
COC	Czech Optical Cluster
CR	Czech Republic
CRH	Centre of the Region Haná
CSO	Czech Statistical Office
CTU	Czech Technical University in Prague
DSORT	Development Strategy of the Olomouc Region Territory
EDP	Entrepreneurial Discovery Process
ESIF	European Structural and Investment Funds
ESVA	Economically and socially vulnerable areas
EU	European Union
FEEC	Faculty of Electrical Engineering and Communication
GDP	Gross Domestic Product
HiLASE	High average power pulsed LASERs
ICT	Information and communication technologies
IMTM	Institute of Molecular and Translational Medicine
ITI	Integrated Territorial Investments
LAG	Local Action Group
LPOR	Long-term Plan for Education and Development of the Educational System in the Olomouc Region
MBCO	Moravian Business College Olomouc
MCCR	Ministry of Culture of the Czech Republic
MEP	Municipality with extended powers
MEYS	Ministry of Education, Youth and Sports
MG IIRAP	Methodological Guidance for the Use of Integrated Instruments and Regional Action Plans
MIT	Ministry of Industry and Trade
MRD	Ministry of Regional Development
NACE (CZ NACE)	Classification of economic activities
NCA	National Cluster Association
NRIS3	National RIS3 Strategy
NTMC	Czech National eHealth Centre
OA	Olomouc agglomeration
OP EIC	Operational Programme Enterprise and Innovation for Competitiveness
OP RDE	Operational Programme Research, Development and Education
OP TAC	Operational Programme Technologies and Applications for Competitiveness
OR	Olomouc Region
OUSHI	Olomouc University Social Health Institute

PPP	Public–Private Partnership
R&D	Research and Development
R&D+I	Research, Development and Innovation
RALAG	Regional Association of Local Action Groups
RAP	Regional Action Plan
RCCOR	Regional Chamber of Commerce of the Olomouc Region
RCPTM	Regional Centre of Advanced Technologies and Materials
RICOR	Regional Innovation Council of the Olomouc Region
RIP	Regional Innovation Platform
RIS3	Research and Innovation Strategy for Smart Specialisation
SCLLD	Strategy of the Community-led Local Development
SME	Small and medium-sized enterprises
SWOT	Strengths, Weaknesses, Opportunities, Threats
TACR	Technology Agency of the Czech Republic
TOPTEC	Research Centre for Special Optics and Optoelectronic Systems
UNO	United Nations Organisation
UP	Palacký University Olomouc
UP STP	Science and Technology Park of Palacký University Olomouc
VŠB–TUO	VSB – Technical University of Ostrava
VŠLG	College of Logistics



2 | **Introduction**

The RIS3 Strategy of the Olomouc Region (hereinafter also the “Regional RIS3 Strategy”) as a smart specialisation strategy is the key document for the sustainable development and strengthening the competitiveness of the Olomouc Region in the area of research, development and innovations (R&D+I). It provides guidance for all relevant actors in the territory as regards the direction the Olomouc Region should take and where it should direct its resources. The vision is nothing less than an attractive region for enterprising and creative citizens, but also clean and safe environment for sustainable living, research and enterprise, as well as an active and expansive innovation ecosystem open to new social and technological challenges and trends.

It is always essential for all strategic plans to have a functioning administration able to efficiently coordinate the implementation of the Regional RIS3 Strategy, on the one hand, and the willingness of the actors in the innovation environment to participate in the implementation, share their ideas and project plans, and be open to collaboration, on the other hand. Without these basic conditions, it is impossible to efficiently fulfil the visions and objectives set forth in this document.

The current version of the strategy is the third update of the original document from 2014. However, compared to the previous generations, significant changes have been made, especially in the key change areas and the strategic and specific objectives assigned to them. The present document is not only the result of two years of mapping, data collection, but moreover the active and ongoing entrepreneurial discovery process (EDP). It is based on the needs of the key actors in the innovation environment within the territory of the Olomouc Region and ties in with other related strategies on both the regional and national levels.

The current version of the Regional RIS3 Strategy is the culmination of intense efforts to implement significant changes to the innovation environment in the Olomouc Region, the logical facilitator of which is the restructured Olomouc Region Innovation Centre (ORIC). However, this is by no means the end state. Quite the contrary: this document will be regularly evaluated in order to verify its relevance and to make sure the the innovation environment stakeholders indentify with its content.

The RIS3 Strategy of the Olomouc Region is divided into four principal blocks: the analytical part; the vertical priorities (domains of specialisation); the horizontal priorities (key change areas, visions and objectives) arranged in the proposal part; and the implementation part. Progress towards the set objectives and priorities will be monitored through annual action plans, considered and approved by the Regional Innovation Council of the Olomouc Region.



3.1. Socio-economic Indicators

3.1.1. Position of the region

The Olomouc Region covers the central part of Moravia and extends to its northern part. From the administrative point of view, it forms the Central Moravia Cohesion Region (NUTS 2) together with the Zlín Region. The Olomouc Region is divided into five districts (Jeseník, Olomouc, Prostějov, Přerov, Šumperk), with 13 municipalities with extended powers and 20 municipalities with authorised municipal authorities; see *Figure 1*. The Olomouc Region shares a border with the Republic of Poland to the north, the Moravian-Silesian Region to the east, the Zlín Region and the South Moravian Region to the south, and the Pardubice Region to the west.

Geographically, the north of the region is mountainous, formed by the Jeseníky Mountains, with their highest peak Praděd (1 491 m a.s.l.), while the southern part is covered by the flatlands of Haná. The Morava (March) River flows through the region; its surface level near Kojetín in the Přerov District is the lowest point in the region (190 m a.s.l.), see *Figure 1*.

As of 1 January 2022, the total area of the region was 5,271.54 km² (i.e., 6.7% of the total area of the CR). The share of arable land has been decreasing steadily (38.6%), while the percentage of non-agricultural land is on the increase (47.5%).

The inhabitants of the Olomouc Region live in 402 municipalities, 31 of which have the status of town or city, in which 56.3% of its citizens. The regional capital is the Statutory City of Olomouc, with 99,496 citizens as of 1 January 2022. Most inhabitants of the region take their water supply from public water systems (93.8%) and live in houses connected to public sewage systems (86.1%). The specific emission values of the main air pollutants are below the average values for the CR, and the environment can therefore be viewed as less damaged. The mountainous and sub-mountainous areas have excellent air quality and are considerable freshwater sources.

As of 1 January 2022, the Olomouc Region had 622,930 inhabitants, a decrease of 7,592 inhabitants since the last update of the RIS3 Strategy. The population density per 1 km² (119.6) ranks the region close to the average population density of the CR as a whole (135.7 inhabitants per km²). There are, of course, differences within the region; the lowest population densities are in the Jeseník District (52.4 inhabitants per km²) and the Šumperk District (91.4 inhabitants per km²).

The network of educational establishments is comprised of 388 nursery schools, 298 primary schools, 19 grammar schools, 73 vocational education specialisations at secondary schools, 8 post-secondary vocational schools and 1 conservatory. The centre of education is the second-oldest Czech university – Palacký University Olomouc. Its 21 thousand students attend its Faculties of Science, Education, Medicine and Dentistry, Arts, Law, Theology, Physical Culture, and Health Sciences.

In terms of economy, the Olomouc Region is an industrial region with developed services. The

economy of districts in the Haná area is more stable and sufficiently varied; unfortunately, the Jeseník District and the northern part of the Šumperk District are economically weaker due to their position, transport accessibility as well as disturbance of social and economic life after World War II (expulsion of the German population). In 2022, the Olomouc Region's share of the GDP in the Czech Republic only reached 4.7%, which is only 78.8% of the national average per capita. The average monthly wage of employees in establishments based in the region is CZK 34,537, according to preliminary data (converted numbers, 2022).

An important indicator in the context of development is that ten of the thirteen municipalities with extended powers in the Olomouc Region are ranked in the category of economically and socially vulnerable areas. This means there are worse living conditions in them, and fewer opportunities for development. They can therefore be classified as peripheral areas, which can take various shapes. These are areas at great distances from the regional centres, or areas that have lost a great number of job opportunities due to restructuring and which experience long-term outward migration, primarily of educated people – being just another cause these areas are falling behind. The main problems include weak economic performance, e.g., due to low productivity of the companies, and limited possibilities of further growth. Many territories are affected in the long-term by the aggrieved social structure of the inhabitants (as relation to age, education, social status), and many areas experience social exclusion. Low availability of quality public services, including transport accessibility, is also a problem. Specific locations of this type are, for instance, former military training areas. The economically and socially vulnerable areas are, at the same time, regional centres with their background, struggling with the same problems as other smaller municipalities (insufficient public infrastructure, poor availability of social services and healthcare, etc.). In the case of the ESVAs, however, there is a higher concentration of these negative aspects, and special activities are therefore designed for them.

The southern and central parts of the region are the areas with the most fertile land. The average yields of the main crops – barley, wheat, and sugar beet for industrial purposes – reach the highest amounts in the entire CR.

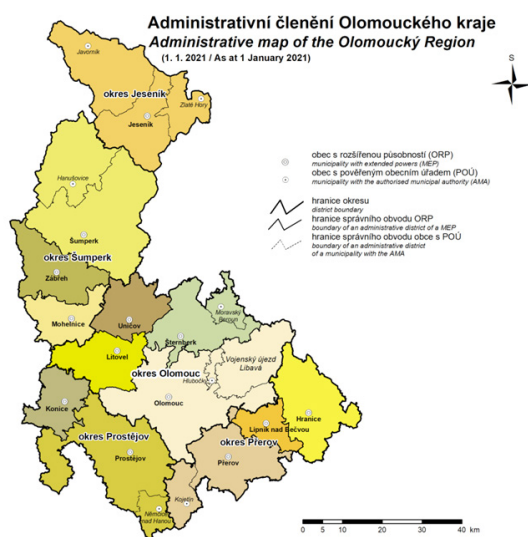
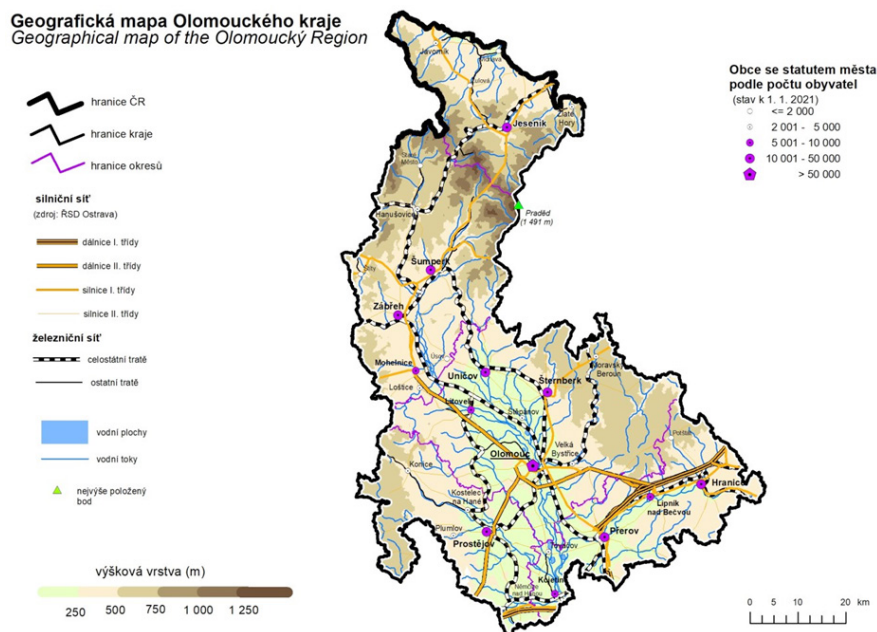


Figure 1 – Division of the Olomouc Region
 (source: CSO)



+ Figure 2 – Geographic map of the Olomouc Region
(source: RMD, CSO)

3.1.2. GDP

The GDP value in the Olomouc Region was CZK 264,901 million in 2020, which represents a year-on-year increase of 4.7% of the GDP value within the CR. The Olomouc Region thus moved from number 10 to number 9 among the regions. The per capita GDP was CZK 419,302 in 2020. Our region steadily shows a lower productivity level than other regions, but slight improvement can be seen from 2013 as the per capita GDP in the Olomouc Region then was CZK 299,515 (77.21% of the national value), resulting in the penultimate rank among the regions. Both total GDP and per capita GDP have been growing since 2013, but at a slower rate than the GDP value within the whole CR. The region shows very low values in the long term in the area of revenue per employee.

3.1.3. Unemployment

Unemployment had been decreasing year-on-year since 2015; see *Figure 3*. However, since 2019, a slow increase in unemployment has been reported, from 2.4% in 2019 to 3.1% in 2020 to the unemployment rate of 3.35% in 2021; see *Figure 3*.

As of 31 December 2021, the Czech Labour Office had 14,382 job seekers registered in the region, while having 9,129 employment vacancies. There was an increase in unemployment in year-on-year terms, with 1.6 available job seekers per one vacancy.

The proportion of unemployed people in the Olomouc Region roughly corresponded to the national average of 2.9%. It was the 5th lowest in the Czech Republic by the end of last December. Higher unemployment in the last quarter of 2021 was reported in the Moravian-Silesian Region, Ústí nad Labem Region, South Moravian Region, Central Bohemian Region, and the Capital City of Prague.

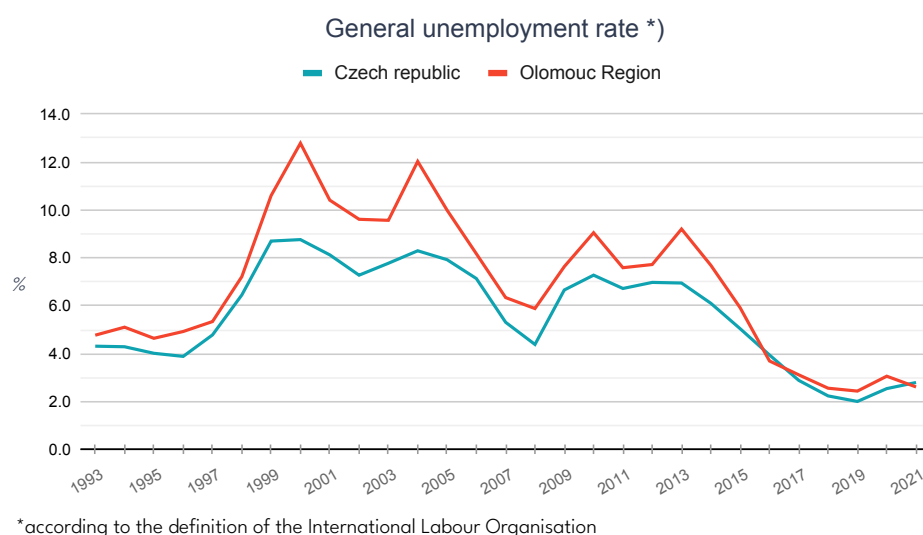
In the inter-district comparison of unemployment rates in the Olomouc Region, the Prostějov District ranked 1st (2.84%), the Olomouc District 2nd (3.8%), the Šumperk District 3rd (4.3%), the Přerov District 4th (4.92%) and the Jeseník District 5th (6.36%); see *Table 1*.

Region, districts	Unemployment rate ¹⁾ (%)	Job seekers registered with the labour Office						Employment vacancies registered by the Labour Office
		total	of which					
			women	school graduates and minors	citizens with disabilities	available job seekers ²⁾	partially employed	
Olomouc region	4,11	17 270	8 459	907	2479	16 407	738	7 123
Jeseník	6,36	1 626	766	72	174	1 522	30	346
Olomouc	3,80	5 904	2 761	331	846	5 648	268	2 783
Prostějov	2,84	2 089	1 147	119	351	1 946	65	1 525
Přerov	4,92	4 222	2 169	232	568	4 046	257	1 210
Šumperk	4,30	3 420	1 616	153	540	3 245	118	1 259

¹⁾ percentage of available job seekers registered by the Labour Office aged 15–64 of all the inhabitants of the same age

²⁾ aged 15–64

+ Table 1 – Unemployment in the individual districts (Ministry of Labour and Social Affairs)



+ Figure 3 – General unemployment rate
Source: Czech Labour Office, Office for the Olomouc Region; CSO; Ministry of Labour and Social Affairs

3.1.4. Labour market

The continuing economic growth in the Czech Republic was also evidenced by the increase in the number of persons employed. In the 4th quarter of 2021, the average registered number of employees in the Czech Republic reached 5,213.4 thousand persons [4,403.9 thousand persons when converted to permanent labour force (without individual entrepreneurs)]. The increase is therefore 7.77% since the last update of the RIS3 Strategy. The growth in the number of persons employed was also reflected in the Olomouc Region with 257.0 thousand persons employed, i.e. 14.22% more than in the last update of this document.

The favourable labour market conditions allowed further growth of wages in all regions. Since the last update of this document, the average gross monthly wage in the CR increased by 9.55% from CZK 36,634 to CZK 40,135 in the 4th quarter of 2021. The increase of the average wage in the Olomouc Region was higher than the national average. The average monthly wage in the region was CZK 34,537. In comparison, this represented an increase of CZK 3,753, i.e., 12.19%. Despite the higher percentage increase, the average wage in the region was more than CZK 3 thousand below the national average.

Source: CSO

3.2. Science and Research

Growth in the university-educated population is seen as a positive trend. In 2021, the Olomouc Region ranked fourth in the CR with 16.5% of its population university-educated (Prague 35.9%, South Moravian Region 21.8%, Central Bohemian Region 17.9%). There were 81,795 university-educated employees aged 26–64 in the Olomouc Region in 2021, ranking fifth among the regions. The structure of employees aged 25–64 in 2021 was: uneducated 0.69%, primary education 12.83%, secondary without school-leaving examination incl. trained 33.43%, secondary with school-leaving examination 30.77%, university-level 15.68%. The issue is employment of these university-educated employees, as a considerable number of them are employed in non-commercial entities such as Palacký University Olomouc, University Hospital Olomouc, the Olomouc Region, and the Statutory City of Olomouc.

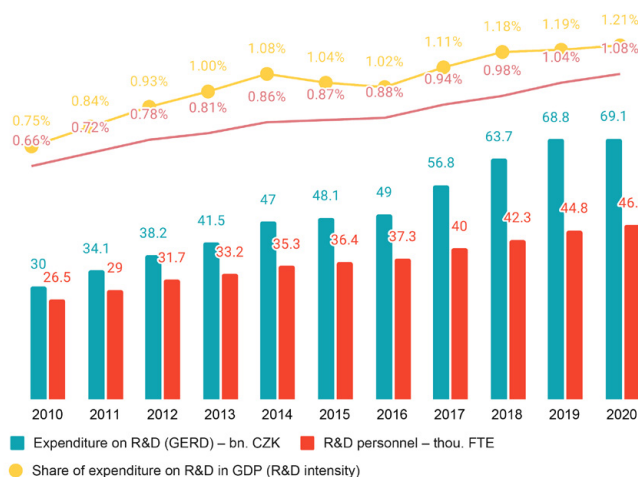
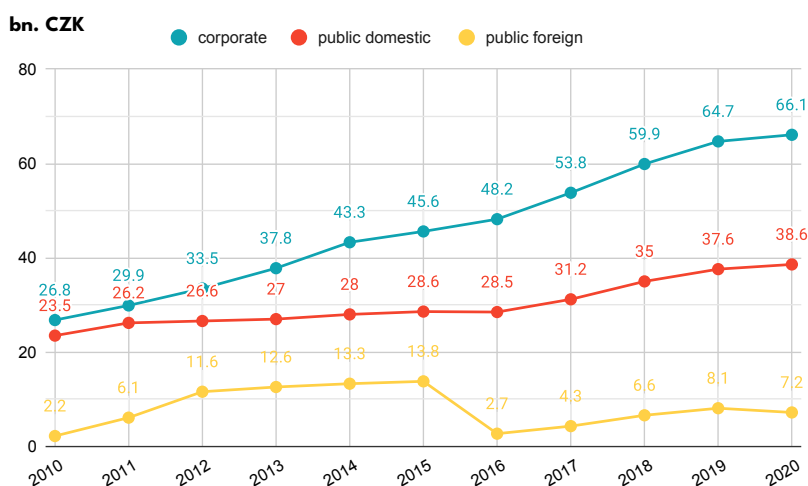
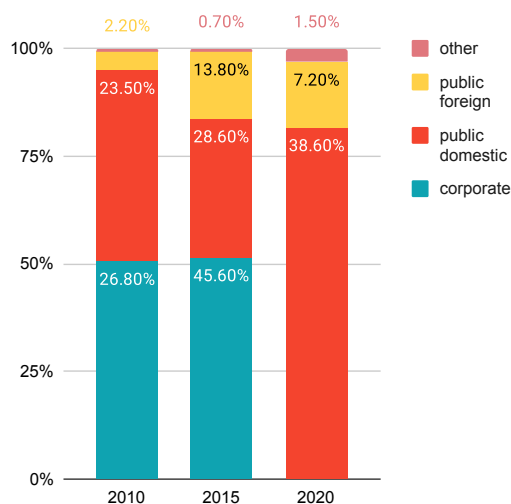
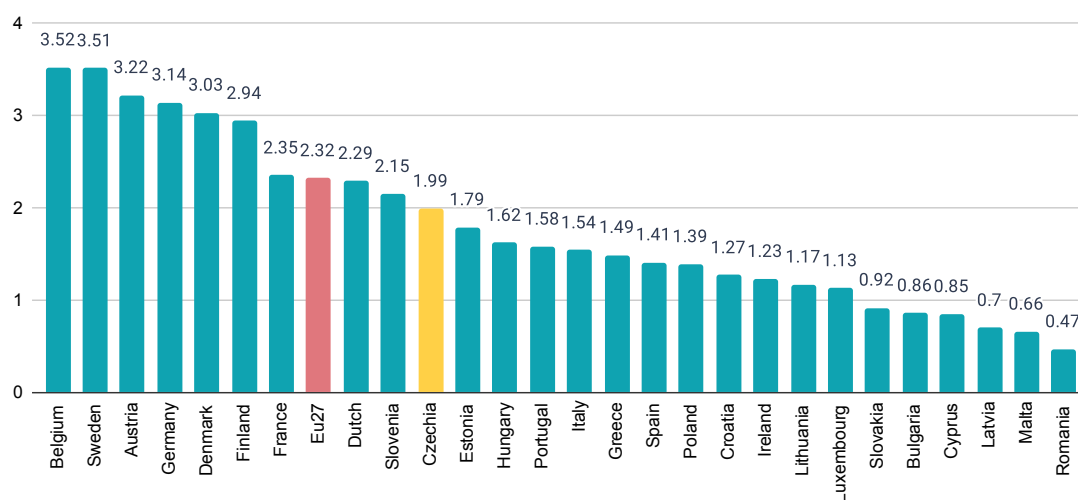


Chart 1 – Research and development in the Czech Republic – basic indicators
(Source: CSO; Annual survey on research and development VTR 5-01)



+ Chart 2 – Research and development expenditure in the Czech Republic according to the main sources of funding
(Source: CSO; Annual survey on research and development VTR 5-01)



+ Chart 3 – R&D expenditure compared to the EU countries in 2020
(source: Eurostat)

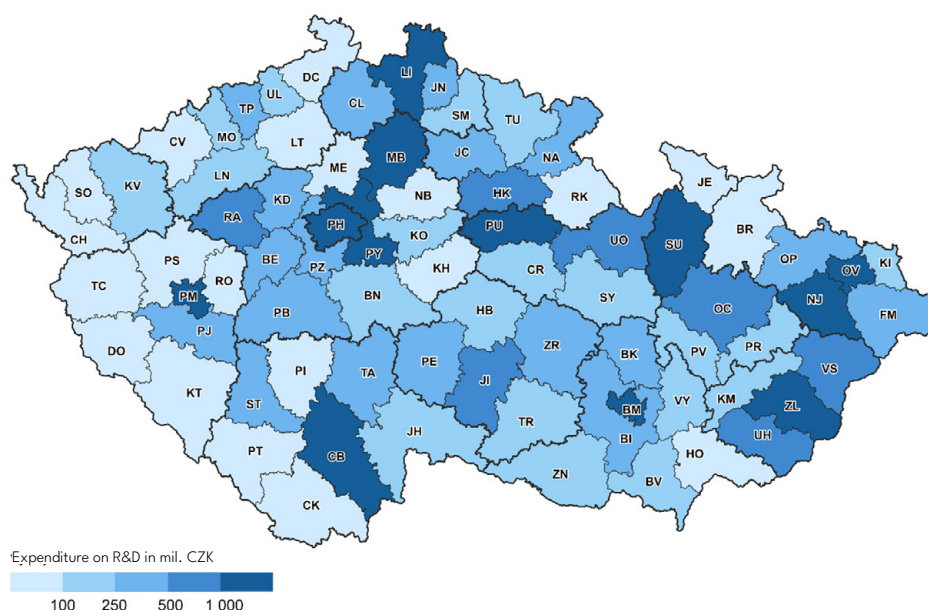


Figure 4 – Research and development expenditure in districts in 2020 (CZK mil.; % GDP)
(source: CSO; Annual survey on research and development VTR 5-01)

The number of employees in R&D is relatively high. In 2021, 5,472 employees worked in R&D in the Olomouc Region. In terms of research and development, the dominant position in the Olomouc Region is held by Palacký University Olomouc. University Hospital Olomouc is also an important entity in R&D.

With its 168 R&D workplaces, the Olomouc Region constitutes 5.58% of the entire CR, ranking sixth among the regions. The vast majority of R&D staff are employed by Palacký University Olomouc. The average monthly wage of science and technology specialists was CZK 47,540 in 2021.

For the average age of researchers in selected cities, see Researchers (HC)* in the higher education sector in the Czech Republic in 2020 by age (%) (source: CSO – Research and development in the Czech Republic in 2020 – main data for CR total).

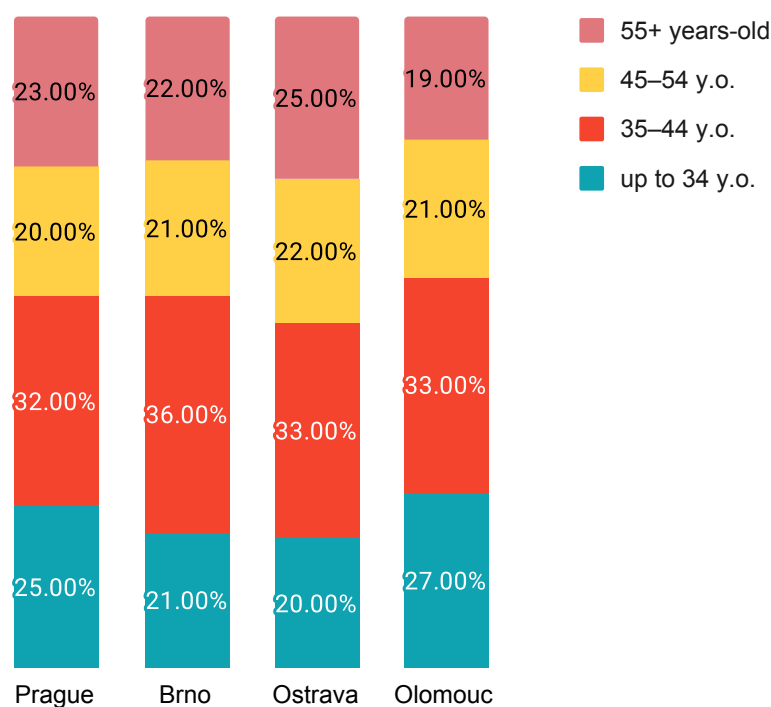


Chart 4 – Researchers (HC)* in the higher education sector in the Czech Republic in 2020 by age (%)
(source: CSO – Research and development in the Czech Republic in 2020 – main data for CR total)

The total research and development expenditure in the region amounted to CZK 4,291 million in 2021, of which the investment expenditure was CZK 334.5 million. The expenditure for R&D in the business enterprise sector amounted to CZK 2,285 million in 2021. In the long-term, the Olomouc Region has been achieving excellent figures in the higher education sector in R&D with investment of CZK 1,910 million. Only Prague and the South Moravian Region ranked higher, well ahead of the Olomouc Region.

According to the expenditure for R&D activities, the Olomouc Region dominates in basic research with expenditure of CZK 1,472 million (5.3% in the CR) in 2021, and the region has ranked 4th in several consecutive years. More information is available in the attached Research and Development Indicators – 2020.

Source: CSO

3.2.1. Patents

The number of valid patents awarded in the Olomouc Region was 145 in 2020 (see *Table 2*), which represents a slight decrease compared to previous years. Private enterprises were awarded 76 patents, natural persons 16 patents, and the public research institutes and universities 53 patents. Domestic entities in the Olomouc Region were awarded 159 patents in 2019. In the same year, 30 patents were awarded to private enterprises in the region. Overall, the Olomouc Region ranks 10th among the regions in the number of

patents.

Palacký University Olomouc had 23 patents awarded in 2021, thus ranking behind Czech Technical University in Prague, Brno Technical University, Technical University of Liberec, VŠB – Technical University of Ostrava, and University of Chemistry and Technology, Prague.

Region, districts	Patent applications submitted		Patents granted		Patents valid as of 31 December	
	total	by private enterprises	total	to private enterprises	total	owned by private enterprises
Olomouc region	20	10	22	10	146	76
Jeseník	1	-	-	-	1	-
Olomouc	12	4	16	6	83	25
Prostějov	4	3	2	2	18	12
Přerov	2	2	3	1	24	20
Šumperk	1	1	1	1	20	20

+ Table 2 – Patents in individual districts
Source: Industrial Property Office and CSO's own calculations

3.3. Organisational Statistics

A total of 2,976,264 economic operators were registered in the CR in 2021, of which 147,212 in the Olomouc Region (4.95% of the CR, 8th place among the regions). In 2021, 310 enterprises with more than 100 employees operated in the territory of the Olomouc Region. Of these 310 enterprises, 150 entities were classified as industrial enterprises. Receipts from sales of these enterprises amounted to CZK 131,539 million in 2020, of which CZK 87,195 million were direct exports. According to CZ-NACE, the largest number of these enterprises are registered in the manufacture of machines and equipment, followed by the manufacture of steel structures and metallic products, manufacture of food products, and manufacture of electrical equipment. The region dominates in receipts from the manufacture of electrical equipment, ranking second after Prague. This sector also employs the largest number of people.

In 2021, the average registered number of employees in the Olomouc Region was 231.9 thousand. The largest part of them were private entrepreneurs registered in accordance with the Trade Licensing Act (115,077) and business corporations (18,244). According to the selected principal activity, the following dominate in the region: wholesale and retail services – repairs and maintenance of motor vehicles (27,340 entities), followed by industrial entities (19,643 entities), construction (18,122 entities), professional, scientific and technical activities (16,769 entities), accommodation and food service activities (8,682 entities), and agriculture, forestry, and fishing (8,438 entities).

The number of newly created entities dropped slightly over the last period, but a positive

balance has been preserved. As regards enterprising individuals, 4,238 economic operators were created and 2,477 economic operators ceased their activities in 2020.

Source: CSO

3.3.1. Participation of entities of the Olomouc Region in selected subsidy programmes

Continuous monitoring of projects and programmes directly or indirectly related to the RIS3 themes takes place in the Olomouc Region. The following are subsidy projects most related to the RIS3 Strategy.

3.3.1.1. OP RDE

A total of 60 projects related to the RIS3 themes participated in the Operational Programme Research, Development and Education (OP RDE) in the Olomouc Region. As of May 2022, CZK 3.292 billion was allocated within these projects. The amount includes projects selected by us, and it is not an empty statistic – the subsidy projects were evaluated based on their description and then assigned to the corresponding domain.

The main applicant was Palacký University Olomouc, with projects amounting to CZK 2.925 billion, which represents 88.85% of all allocated OP RDE funds relating to the RIS3 themes implemented in the Olomouc Region.

Source: ORIC internal project database

3.3.1.2. OP EIC

Within the Operational Programme Enterprise and Innovation for Competitiveness (OP EIC), 931 projects amounting to CZK 14.655 billion have been supported in the period from the programme start as of May 2022. This amount again comprises projects with direct linking to the RIS3 Strategy, identified after perusing individual project descriptions. Again, these are not general statistics, but rather data selected based on our experience.

Source: ORIC internal project database

3.3.1.3. TACR

Within the programmes in view, 110 projects relating to the RIS3 Strategy, amounting to CZK 2.233 billion, were implemented within the programmes of the Technology Agency of the Czech Republic during 2014–2022. These were most commonly:

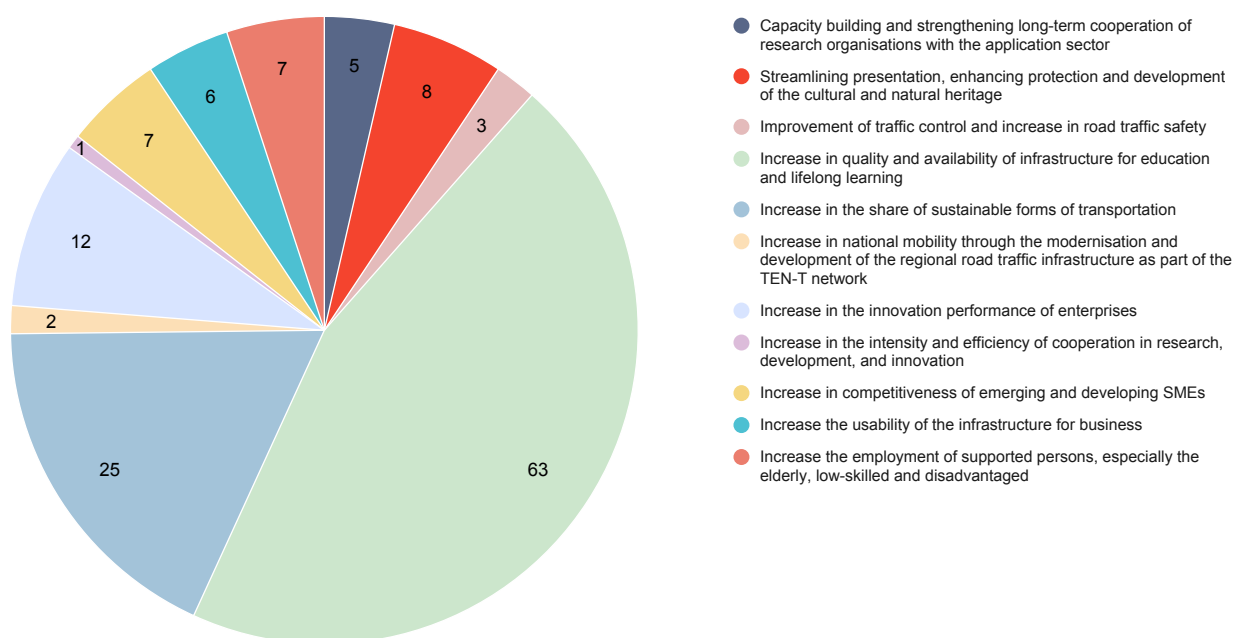
- The ETA programme supporting research, experimental development and innovation of applied social sciences and humanities – 38 projects;
- The ALFA programme supporting applied research and experimental development – 21 projects;
- The ZETA programme for the support of applied research – Supporting young researchers, both men and women, in innovation activities and the culture of equal opportunities – 13 projects.

Source: Technology Agency of the Czech Republic, ORIC internal database

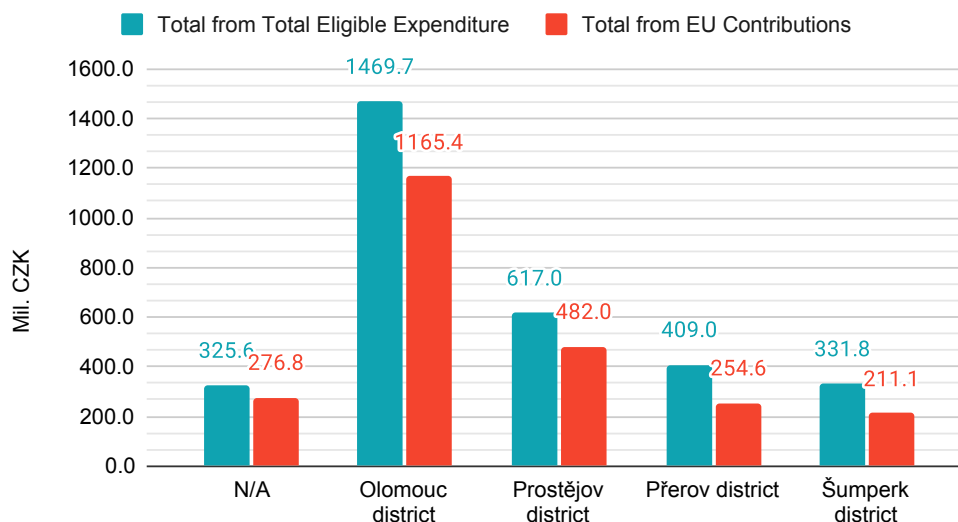
3.3.1.4. ITI in the Olomouc agglomeration

Integrated Territorial Investments (hereinafter “ITI”) is a territorial dimension tool in metropolitan areas and agglomerations of national importance. It is one of the tools for applying the integrated approach using the European Structural and Investment Funds (hereinafter “ESIF”), which is implemented on the basis of the approved integrated territorial strategy. For the 2021–2027 period, 13 metropolitan areas and agglomerations were determined in the CR. An important aspect of the ITI is that it allows funding of projects from more than one priority axis of one or more programmes, a fact that produces a synergy effect and, consequently, efficient use of public funds thanks to concentration on addressing the key issues and developing crucial needs of the territory. The integrated projects involved are therefore aimed at creating a space for the integrated and concentrated effects of the interventions in the territory of the Olomouc agglomeration. This integrated territorial strategy is based on the conditions of the MG IIRAP, while reflecting suggestions from the MRD workshop on the ITI, held in September 2021, and subsequent discussions and consultations between the individual metropolitan areas and agglomerations and the MRD (The Integrated Strategy for the ITI in the Olomouc Agglomeration for the 2021–2027 Period).

Within the strategy of the Integrated Territorial Investments in the Olomouc agglomeration, projects supporting research and development are being prepared in research organisations as well as in companies; see Chart 5, with resources specified in Chart 6. These funds are mainly provided under the subsidy programmes OP EIC, OP RDE.



+ Chart 5 – ITI Specific Objectives



+ Chart 6 – Amount of funds in ITI

3.4. Public Administration and Its Role in the Region's Innovation Ecosystem

Public administration is primarily represented by the Olomouc Region as a higher territorial self-governing unit and by the municipalities. The Olomouc Region aims at ensuring the overall development of the region. In the document “Development Strategy of the Olomouc Region Territory for 2021–2027 With an Outlook to 2030”, the Olomouc Region defines its Vision 2030 – Priorities and Strategic Objectives.

The primary objective and the biggest challenge for the future is to preserve the high quality of life and availability of quality public services and to ensure reliability in self-governance and the delegated powers of the state administration, while supporting faster economic growth aimed at creating a greater number of attractive jobs and guaranteeing the development of a dynamic entrepreneurial environment supported by a functioning innovation ecosystem and cooperation of the public, private and academic sectors and territorial partners. The objective is to attract investment and economic activities that would support intelligent specialisation of the economy.

If these objectives are achieved, the region expects a higher increase in wages, a greater number of attractive and well-paying jobs, a greater number of inhabitants employed in economic activities with higher added value, higher levels of economic activity of the inhabitants, primarily in parts of the region with economic difficulties. Therefore, the priorities include support for quality services for business enterprise, transfer of knowledge between the research and commercial sectors, and development of human resources in technical competencies as well as soft skills for the labour market needs within the educational system at schools and as part of lifelong learning.

One of the highest new priorities is the support for the digitalisation of the economy and

the development of digital competence of the population for the upcoming trends of greater application of the ICT, automation, artificial intelligence, and work with large data volumes.

An important new opportunity for the future is investment into measures reducing the dependence of the economy on fossil fuels with the aim to achieve carbon neutrality in the region. Investment into these areas will be massively supported by the EU cohesion policies as well as by the national policies within the EU's and CR's commitments in respect to the Paris Agreement. It will bring about new directions like investment into circular economy and low-carbon technologies, use of renewable energy sources, etc. Furthermore, there will be efforts to support projects in energy independence and alternative energy sources. Energy autonomy on the level of the individual economic operators can help minimise the effects of rising energy prices.

A special topic is focusing on the economically weakest and the most vulnerable areas, especially on the balanced development of the Jeseník District and Šumperk District as well as other vulnerable parts of the region (peripheries, southern parts), and on making the remote parts of the region more attractive for living, working, and businesses.

Future development remains conditional on quality services of the public administration and cooperation between the region, municipalities, educational institutions, companies, and non-profit organisations as part of the long-term conceptual and strategic work of the individual departments and organisations of the Olomouc Region.

The region initiates strategic changes, proactively communicates and cooperates with partners (with the functional implementation and organisation structure), and systematically develops and promotes areas for the implementation of projects that support the region's long-term vision.

To support regional development, the Olomouc Region allocates financial resources in its budget directed towards the activities for economic development and innovations, especially through subsidy programmes (in recent years, the Support Programme for Entrepreneurship, the Olomouc Region RIS3 Programme for 2015, the new Olomouc Smart Region 2022, programmes to support education – for the subsidy programmes, see the overview below), co-financing of the Olomouc Region Smart Accelerator project (hereinafter “ORSA”) in 2016–2018, and the follow-up Olomouc Region Smart Accelerator II project (hereinafter “ORSA II”) in 2019–2022. Through the implementation of the ORSA and ORSA II projects, the Olomouc Region, as the beneficiary of subsidies for these projects, invested, over the 2016–2022 period and beyond the funds allocated in the Olomouc Region's budget, further financial resources amounting to tens of millions of CZK into the development of the innovation environment in the region/RIS3; in particular, from OP RDE, i.e., European sources, with the intent to implement similar follow-up projects in the years to come.

Key contribution to the implementation of the ORSA II is made by the association Olomouc Region Innovation Centre (hereinafter “ORIC”) as a financial partner of the project which

is aimed at implementing the RIS3 Strategy of the Olomouc Region within the context of the implementation of the National RIS3 Strategy. In addition to activities under the ORSA II, the association implements other activities in this area, while the Olomouc Region is one of the founders and currently one of the two members of the association, playing a major role in the funding of the association's activities in the area of the RIS3 Strategy themes.

As part of its activities and through its role as a member of the ORIC, the Olomouc Region strives to use projects like the Smart Accelerator to fulfil some of its roles in the support of the economic development and innovation environment in the region (e.g., coordination, initiation, support, analysis, information, marketing). It supports beneficial initiatives of other regional entities in this area and cooperates with them. One of the means of systemic approach to this subject is also the regional Innovation Council of the Olomouc Region as well as regional innovation platforms which bring opinions and requests which initiate new ideas that can support the innovation-based economic development of the region.

In terms of other regional public administration entities, larger towns in the region may be viewed as relevant for the support of the economic development and innovations, as they address the regional development agenda as part of their activities. From the point of view of the Olomouc Region, cooperation in this area is ongoing within various events, meetings, and negotiations. Other entities relevant for the areas relating to the economic development and support of innovation, i.e., the RIS3 Strategy themes, include especially the regional offices of CzechInvest and the Business and Innovation Agency, both state contributory organisations subordinated to the MIT – see the description of the key actors in the region below.

The Olomouc Region has various subsidy programmes, some of which are RIS3 relevant, such as the Educational Support Programme, the Smart Region Support, etc.

Source: Olomouc Region

3.4.1. Administrative and territorial division of the Olomouc Region

3.4.1.1. Two Euroregions are located in the territory of the region:

- Glacensis
- Praděd

3.4.1.2. The territory of the region comprises the following five former districts:

- Olomouc
- Přerov
- Prostějov
- Šumperk
- Jeseník

After 2003, district authorities ceased to exist, and since then, the self-governing regions are divided into administrative units with municipalities with extended powers and these are further divided into administrative units with municipalities with authorised municipal authorities. In

addition to the former district seats, extended powers of public administration are executed within the territory of the region by the following municipalities:

- Hranice
- Konice
- Lipník nad Bečvou
- Litovel
- Mohelnice
- Šternberk
- Uničov
- Zábřeh

The region consists of 399 municipalities, of which 13 are municipalities with extended powers. There are 31 municipalities with town or city status. The seat of the governor and the regional capital where the Regional Authority is based is the Statutory City of Olomouc.

Number of districts:	5
Number of administrative units with municipalities with extended powers:	13
Number of administrative units with municipalities with authorised municipal authorities:	20
Number of municipalities:	399
Of which have the status of cities or towns:	31
Number of military training areas:	1

+ Table 3 – Structure of the Olomouc Region

3.4.1.3. Economically and socially vulnerable areas according to the Regional Development Strategy CR 2021+

Region	Listing of economically and socially vulnerable areas (MEP administrative unit)
Olomoucký	Přerov, Jeseník, Šumperk, Konice, Mohelnice, Uničov, Lipník nad Bečvou, Zábřeh, Hranice, Šternberk

3.5. Overview of Relevant Concepts, Analyses and Studies in the Olomouc Region

3.5.1. Development Strategy of the Olomouc Region Territory 2021–2027

The Development Strategy of the Olomouc Region Territory for the 2021–2027 period (hereinafter “DSORT”) is the umbrella conceptual document specifying the long-term

vision, strategic objectives, and long-term and medium-term priorities for the development of the Olomouc Region. One of the priorities related to the RIS3 Strategy is Economy and Innovations, the strategic objectives of which include improvement of the business environment and conditions for the development of the SMEs, support for the innovation ecosystem and technology transfer, and support for the introduction of smart technologies in energy. The DSORT emphasises, as its priority, support for distinct impulses to increase the dynamics of the economic development, for the business development, development of innovations, and commercialisation of the results of research and development. In addition to strengthening the innovation ecosystem, economic development should emphasise education and the development of competences and skills of the population for the labour market in view of the trends and predictions in the development of both the interior and exterior environment.

The DSORT is based on national conceptual documents and on the sectoral and territorial conceptual documents of the Olomouc Region. The Strategy is not a document presenting an exhaustive list of all priorities and themes of the regional and territorial policies in the territory of the Olomouc Region. The Development Strategy considers the priorities of the cohesion policy primarily on the sectoral strategy level and builds upon the implementation mechanisms and financing opportunities in the implementation part and for the preparation of action plans.

3.5.2. ITI OA 2021–2027 Integrated Territorial Strategy

Integrated Territorial Investments (ITI) is a territorial dimension tool in metropolitan areas and agglomerations of national importance. It is one of the tools for applying the integrated approach using ESIF, which is implemented on the basis of the approved integrated territorial strategy. For the 2021–2027 period, 13 metropolitan areas and agglomerations were determined in the CR. An important aspect of the ITI is that it allows funding of projects from more than one priority axis of one or more programmes, a fact that produces a synergy effect and, consequently, efficient use of public funds thanks to concentration on addressing the key issues and developing crucial needs of the territory. The integrated projects involved are therefore aimed at creating a space for the integrated and concentrated effects of the interventions in the territory of the Olomouc agglomeration. This integrated territorial strategy is based on the conditions of the MG IIRAP, while reflecting suggestions from the MRD workshop on the ITI, held in September 2021, and subsequent discussions and consultations between the individual metropolitan areas and agglomerations and the MRD. The ITI OA therefore concerns the RIS3 themes in the strategic objective Innovative Economy and partially in the strategic objective Better Educated and Inclusive Society.

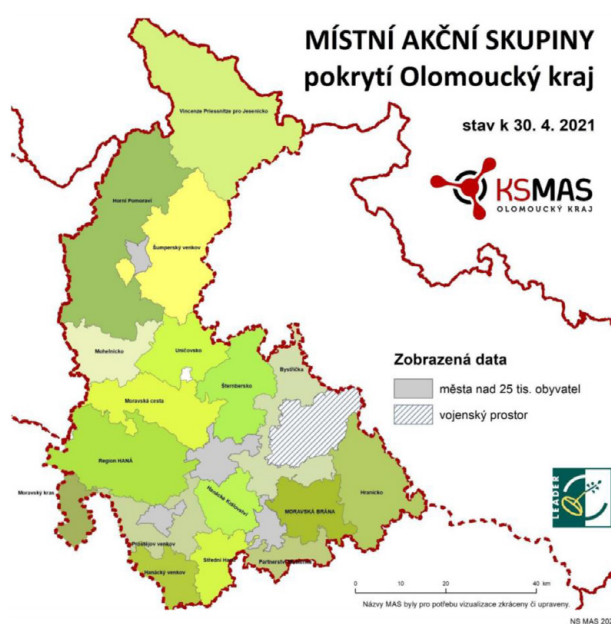
The ITI Integrated Territorial Strategy for the Olomouc Agglomeration for the 2021–2027 period is based on specific problems and needs of the territory identified especially in the updated socio-economic analysis of the ITI Strategy for the Olomouc Agglomeration from 2019 as well as other current information sources, and it reflects the development potential of the territory.

Source: ITI in the Olomouc Agglomeration

3.5.3. Strategy of Community-led Local Development (SCLLD) in the Olomouc Region

There are currently 16 Local Action Groups (LAGs) in the territory of the Olomouc Region; see Figure 5. All the LAGs follow approved CLLD strategies that primarily tackle the problems and potentials of the respective regions and determine various measures for subsequent development. The strategies have analytical, strategic, and implementation parts. The analytical part provides the description and development needs of the regions and refers to the approved long-term development objectives, strategies, etc. Each strategy evaluates the potential of the territory and specifies the strategy priorities and opportunities in achieving them through programming frameworks and individual projects. All the strategies are available at the website of the National Local Action Group Network of the Czech Republic.

Strategic objectives relating to the RIS3 themes include, for instance, the strategic objectives of the “Region HANÁ MAS – ECONOMY: A competitive and growing business environment”, and the “Quality infrastructure, sufficient facilities and attractiveness of the Hanácký venkov LAG”, ensuring a quality lifestyle for the inhabitants and creating possibilities for the economic development of the area.



+ Figure 5 – Local Action Groups – coverage in the Olomouc Region
(source: RALAG Olomouc Region) <http://olomoucky.nmascr.cz/>

3.5.4. Regional Action Plan for the Development of Education in the Olomouc Region (RAP) for the 2019–2021 period, and the follow-up RAP for the 2022–2024 period

The RAP sets the priorities and individual steps to achieve the objectives of the education policy in the territory based on needs, urgency, merits, and whether they are supported by actual data and analyses. The plan was elaborated in cooperation with the partners in the territory. The RAP is not a new strategy in the territory, it follows the principle of building on what has already been established in the region (the Long-term Plan for Education,

the RIS3, the Sector Agreement, the RAP activities focusing on education) and use these outputs in discussions with the partners in the territory, or translate them into targeted and specific activities if agreed with the partners in the territory.

The RAP aims to improve management of the schools in the region, develop assessment of the quality of education, and ensure the planning of strategic steps leading to improvement in the quality of the region's educational system as well as individual schools. The RAP should also allow planning, coordinating, and monitoring of thematic intervention of the individual operational programmes in agreement with the long-term needs and priorities of the region and schools in its territory with respect to the educational objectives in the CR.

One of the mandatory activities of the RAP is conducting the Territorial Needs Analysis, which addresses the needs in the territory of the Olomouc Region with respect to its educational system, in particular, the system of secondary and professional tertiary schools.

The RAP also includes a summary of information about the current conditions according to individual themes. The RIS3 strategies primarily involve themes like support for competence for entrepreneurship, initiative, and creativity; support for polytechnic education; support for vocational training incl. cooperation of schools and employers; development of career counselling; support for vocational training centres; support for the lifelong non-formal and informal learning.

The RAP also includes the final summary of the results with an overview table that describes the problems, causes, and desirable changes and objectives. The table is based on the regional as well as national strategic documents and on the results of activities of workgroups of specialists in the implementation team of the project Regional Action Plan for the Development of Education in the Olomouc Region, collated according to the intervention areas in accordance with the RAP Methods. These documents, with attachments, are available at the Olomouc Region website.

3.5.5. Long-term Plan for Education and Development of the Educational System in the Olomouc Region (2020–2024)

The Long-term Plan for Education and Development of the Educational System in the Olomouc Region for the 2020–2024 period (hereinafter the “Long-term Plan” or “LPOR”) is the basic strategic document of the Olomouc Region specifying the basic guidelines for developments in education. It was elaborated pursuant to the provisions of Section 9 of Act No. 561/2004 Czech Law Coll., on Pre-school, Basic, Secondary, Tertiary Professional and Other Education (the Education Act), as amended, which specifies its evaluation and new development at four-year intervals. Its structure is specified in the provisions of Section 1 of the regulation of the Ministry of Education, Youth and Sports (hereinafter “MEYS”) No. 15/2005 Czech Law Coll., specifying the formalities of long-term plans and annual reports.

The creation of the Long-term Plan in its current version was facilitated by extensive cooperation of stakeholders. Preparation and development of the Long-term Plan was

administered by the Department of Education and Youth of the Olomouc Regional Authority. In addition to the processor, a member of the Olomouc Regional Council responsible for education was closely associated with the preparation of the Long-term Plan, as well as work groups comprising the principals of the individual types of schools in the Olomouc Region, who then worked on the proposals for the regional educational plans for the next LPOR validity period. The Long-term Plan respects the economic and social specificities of the Olomouc Region, especially in relation to the condition and development of the educational system in the territory.

The current version is the sixth consecutive Long-term Plan elaborated for the territory of the Olomouc Region that builds on the previous plans issued in 2003, 2006, 2008, 2012 and 2016. The Long-term Plan for Education and Development of the Educational System in the Olomouc Region 2020–2024 is based primarily on the Long-term Plan for Education and Development of the Educational System in the Czech Republic 2019–2023 (hereinafter “LPCR”) issued by the MEYS, but also on the basic strategic document of the Olomouc Region, the Development Strategy of the Olomouc Region Territory for the 2015–2020 period, which also defines the basic strategic direction in the development of human resources, including education. Its relation to the RIS3 Strategy is seen, for instance, in the support of school cooperation, and the support for polytechnic education.

Source: <https://www.olkraj.cz/strategie-koncepce-vyrocní-zpravy-cl-281.html>

3.5.6. Local Action Plan for the Development of Education (LAP)

The Local Action Plan for the Development of Education (LAP) is a result of cooperation of partners in the area, specifying the priorities and individual steps necessary to achieve the objectives of the education policy in the area based on the local needs and urgencies, local benefits and whether they are supported by actual data and analyses from the area (source: <https://www.mapvzdelavani.cz/>) on the primary school level.

The individual projects react in the given area to insufficiently functioning cooperation and effective dialogue of stakeholders participating in training and education, especially in the case of cooperation between the school authorities, teachers (incl. private and religious schools), employers, and other partners in the territory in order to implement common activities focusing on improving the quality of education, including the support of equitable access to education and strategic management in education. Therefore, the objective is to increase the level of active participation of school authorities in the development of the educational system and to create new forms of cooperation based on the partnership of school authorities, schools, and other institutions, such as NGOs. The purpose of creating such kinds of networks is searching for local active teachers and other experts in education who are able to use their experience and professional skills to improve education in the given area on a wider scale than only in the place of their regular work. The newly created local partnerships may also lead to developing cooperation in other services aimed at supporting education for children (e.g., in socially excluded areas) as well as providing opportunities for a greater level of parents' participation in the education of their children and support of community-oriented activities in smaller territorial entities within the LAP.

3.5.7. Development Policy for Culture, Creativity, and Conservation of Monuments of the Olomouc Region

Since June 2021, the Olomouc Region has cooperated with ONplan lab, s. r. o. and various experts from the professional cultural public community to draw up the Development Policy for Culture, Creativity, and Conservation of Monuments for the 2022–2029 Period. The region will use this document as a tool for better coordination, in the next seven years, of the development of culture and cultural and creative industries in its territory. The policy will be composed of analytical and proposals parts. The comprehensive analysis, available in a pdf in the link below, maps the current condition of the cultural environment of the Olomouc Region and defines its problems and needs. Its output will be the proposal of a new policy with the visions and basic objectives of development, containing the individual measures and activities to fulfil the objectives.

Source: <https://www.olkraj.cz/koncepce-rozvoje-kultury-kreativity-a-pamatkove-pece-olomouckeho-kraje-cl-5253.html>

3.5.8. Motivation of Creative Industry Actors in the Olomouc Agglomeration (2020)

Palacký University Olomouc has long been trying to strengthen the position of creative industries in the region. The same objective is pursued by the publication Motivation of Creative Industry Actors in the Olomouc Agglomeration: Strategies and Recommendations to Strengthen the Segment, which builds on long-term mapping of the area and the initial monograph Cultural and Creative Industries in the Olomouc Area (2017).

Based on a qualitative analysis of the current situation, the publication summarises the findings to date, but also presents systemic measures to prevent brain drain and exodus of talent and human capital in the field of cultural and creative industries, including various specific suggestions to support the emergence of start-ups, co-working sites, and creative hubs. The set of proposed measures, which are based on sociological and geoinformatic data and map analyses, offer local authorities and partners practical and applicable tools not only to reduce undesirable effects, but also to allow systemic measures to acquire human capital from both the Czech Republic and abroad. The basic idea works with limited financial resources and the proposals primarily formulate low-cost solutions based on strategies, the symbiosis of creative industries and the local authorities, and mutual utilisation of the outputs of the creative and social capital.

There is also a special chapter in the publication directly reflecting the ongoing crisis that affected virtually the whole area under investigation, i.e., the Covid-19 pandemic and the resulting restrictions.

Source: Nėtek, Bilík a kol., 2020

3.5.9. Detailed Research Study into the Development Potential of the Domains of Specialisation

Within the Detailed Research Study into the Development Potential of the Domains of

Specialisation, the Olomouc Region Innovation Centre, cooperating with the National Cluster Association (NCA), made an expert in-depth analysis of the domains of specialisation for the RIS3 Strategy of the Olomouc Region. The study was primarily conducted using a sample of companies classifiable in the individual domains of specialisation. The NCA used the list of companies for statistical calculations and interviews. The list contained 173 entities and was binding for the author.

The procedure followed in the preparation of the analysis was divided into three stages:

- The first stage comprised assembling the questionnaire for the interviews, and several interviews were conducted. The NCA conducted 15 interviews in total across five domains. At the same time, interviews were also conducted by the client. The minimum number of interviews was set to five interviews per domain.
- During the second stage, preliminary results of the interviews were presented, on the basis of which the NCA conducted seven follow-up interviews. The number of potential respondents was increased, as proposed by the NCA and approved by the ORIC.
- The third stage provided the summary of the results for each sample of companies in the given domain with focus on the outputs – Porter's Diamond (Theory of National Competitive Advantage of Industries), innovation performance of the companies within the domains, economic indicators, and recommendations for interventions.

The analysis outputs suggest that the seven domains can be split into three groups. The first group comprises domains with strong ties and developed cooperation in the region, a sufficient number of companies with development and innovation activities, possibilities of linking to related industries, and keeping track of the latest market trends. These are Biomedicine, Life Sciences and Health Care; Pumping and Water Technologies; and Optics and Precision Mechanics, Optoelectronics.

The second group includes domains of companies with a broad orientation and scope of activities. These domains need to be better specialised, and the priority focus of the domain must be defined. In case domains with such a wide scope are used, it will be problematic to determine the follow-up interventions by the innovation centre towards the needs of the companies. The group comprises the following domains: Mechanical Engineering and Electrical Engineering; Cultural and Creative Industries; Software Development; and Advanced Agricultural technology for Sustained Development.

The third group is a domain with several large companies in the Olomouc Region, but according to the outputs of the interviews, its needs primarily relate to the national and international levels. This is the case of the Industrial Chemistry domain.

Source: see Attachment 1

3.5.10. Passporting the Business Environment

This document is elaborated by CzechInvest, the Czech business and investment

development agency, and it is aimed at describing what makes the area in view unique and what the entrepreneurial spirit at the individual locations is like. It also maps the priorities of the authorities within the strategic planning of the municipalities and identifies what kinds of investors they would like to bring to their region. The aim of passporting, developed by CzechInvest's regional offices, is creating a relevant background for the strategic planning of development of the municipalities as well as the location of suitable companies and investments.

Passporting the Business Environment comprises clear overviews of the indicators that define the business environment. They are composed of statistical and socio-economic data combined with own analyses of all municipalities by authorised municipal authorities. They also contain a profile of company needs, which provides information about the needs of the companies across the Czech Republic in the area of technical and social infrastructure, qualified workforce, R&D activities, and cooperation with the local authorities; see *Figure 6*.

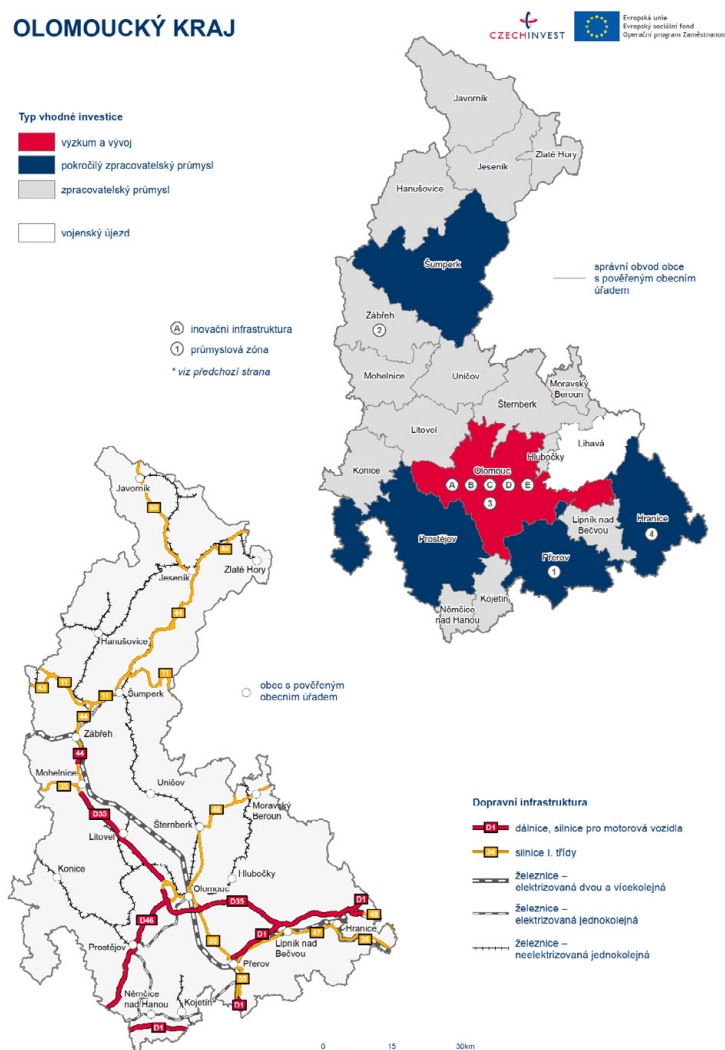


Figure 6 – Passporting the business environment in the Olomouc Region

(source: CzechInvest) <https://www.czechinvest.org/cz/Sluzby-pro-municipality/Pasport-podnikatelskeho-prostredi>

3.6. Innovation Ecosystem Actors in the Olomouc Region

3.6.1. Higher Education Establishments and Universities in the Olomouc Region

3.6.1.1. Palacký University Olomouc (UP)

Palacký University Olomouc is a university with a long tradition. Founded in the 16th century, it is the oldest university in Moravia and the second oldest in the Czech Republic. At present, it is a modern educational institution with a wide range of branches of study and a wealth of scientific activities. It has eight faculties with **22,672** students in accredited study programmes. Palacký University Olomouc is one of the leading Czech universities, and ranks among the top universities in the world according to international rankings. Palacký University Olomouc is one of the significant Central European educational and research centres, at the European and world levels in a number of fields. It also plays an important regional role. It is one of the largest employers in the Olomouc Region and the Statutory City of Olomouc. Economic growth and development of the region is unimaginable without Palacký University.

The eight faculties of Palacký University offer 1,091 Bachelor's, Master's and postgraduate study programmes. Prospective students are offered a wide choice: theology, teaching, physical education and sport, humanities, social sciences and arts, science, law, medicine, and health sciences. The credit system of the study at Palacký University is fully compatible with the ECTS. The prestigious position of the Olomouc university is proven by tremendous interest in studying there – not only among young people, but also professionals, including senior citizens. There has also been great worldwide interest in studying there, especially in the English-language programme General Medicine.

Palacký University profiles itself as a modern research university. Thanks to the projects of the university, new state-of-the-art scientific research centres with high-tech equipment were built in Olomouc that cooperate with prominent institutes worldwide. The quality of the study programmes, education, and scientific results is also reflected in international ratings, such as the Times Higher Education World University Rankings, the Center for World University Rankings, and the U.S. News Best Global Universities Ranking, according to which Palacký University is among the top-rated Czech universities and occupies an important place in worldwide rankings.

The university cooperates with a number of partner universities abroad. It strongly supports internationalisation of the educational and scientific research environment, cross-border mobility of students as well as academic and scientific staff, and pays special attention to the development of international strategic partnerships in education, science, and research. The Olomouc alma mater reaffirms its place among significant scientific research sites through the activities of its Science and Technology Park (UP STP), a link between the university and businesses. UP STP also provides services to students who can consult their business plans there.

In recent years, there has been an increase in the performance of UP's research infrastructure. A great number of research teams oriented on basic research operate at the UP, yet their results frequently have potential for practical applications. Basic research in the fields of optics, nanomaterials, biotechnologies, and biomedicine at UP stand out as world-class.

Source: <https://www.upol.cz/univerzita/zakladni-informace/>

3.6.1.2. Moravská vysoká škola o. p. s. (Moravian Business College Olomouc, MBCO)

MBCO is a well-established private university providing economic, managerial, and entrepreneurial education in the Olomouc Region. It is a public benefit company with its objective to educate economists, managers, and entrepreneurs for the region. The first Czech college to provide professionally-oriented study in newly accredited study programmes, it builds on long-term experience in combining teaching and practice, cooperation with successful companies in the Olomouc Region, and international expertise of its foreign partners. MBCO profiles itself in innovation and management of small and medium-sized enterprises (SMEs) and the sustainable economic system of the region. The school's basic vision is supporting economic growth and development of the region. Its objective is to continuously improve studies to ensure a high level of employability of its graduates as well as their applicability in follow-up studies. The MBCO therefore places great emphasis on internships for its students, reflected in the compulsory time spent at professional practice in companies, case study processing, and implementation of social responsibility projects.

MBCO has an accredited Bachelor's study programme Economics and Management with specialisation in Business Economics and Management, and the Master's study programme Economics and Management with specialisation in Economics and Management of Small and Medium Enterprises, offered both in Czech and English. It also offers students various study profiles in order to specialise in a specific area based on the study programme Economics and Management and follow the areas that interest them in more detail. After completing the profile subjects, the students obtain certificates proving their professional capacity and competences in the given field. The Bachelor's study programme offers 7 profiles: Entrepreneurship and Start-Ups; Human Resource Management; Event Marketing; Accounting and Corporate Finance; Public Economics and Administration; Family Business; PR & Marketing. The Master's study programme also offers 7 profiles: Business and Innovation; Managerial Informatics; Corporate Governance; Crisis Management and Communication; Strategic Business; Human Resource Management; Process and Project Management.

In 2021, MBCO launched the Czech-Israeli Innovations and Partnership Centre (CCIIP), the mission of which is, in particular, interconnecting the Czech and Israeli innovation ecosystem and the support for projects of Czech and Israeli entities in the area of exchange of expertise and technologies. The priority areas of interest of the CCIIP are primarily medical diagnostics, telemedicine, and efficient healthcare management.

Source: MBCO

3.6.1.3. Vysoká škola logistiky o. p. s. (College of Logistics, CoL)

The College of Logistics is a private technical non-university college, the only one in the CR that offers three degrees of tertiary education (Bc., Ing., Ph.D.) in the study programme Logistics (Logistics in Transport, Logistics in Services, Logistics in Tourism, and Information Management).

The CoL aims to offer applicants from various areas of logistic systems (carriers, service providers – but also other fields) opportunities for obtaining a degree in the Bachelor's programmes Logistics in Transport, Logistics in Services, Logistics in Tourism, and Information Management, taking into account that similar study programmes are not available at any other higher education institution in the Czech Republic. The CoL provides education in basic theoretical knowledge of logistics, physics, operational research, and informatics, applicable in various parts of logistic systems (transport, transport infrastructure, as well as private and public services). This basis is completed with economic and legal disciplines in transport, management, and services. Using them, graduates acquire a background for solving practical problems in transport processes and provision of services.

Source: CoL

3.6.1.4. VŠB – Technical University of Ostrava, The Centre of Bachelor's Studies in Šumperk

The Centre of Bachelor's Studies in Šumperk was founded in 2002 and offers studies in the accredited Bachelor's study programme Mechanical Engineering. Students can also study Engineering Technology, with a four-semester study of compulsory subjects, and special subjects starting from the fifth semester. Bachelor's studies, in both full-time and combined form, are currently attended by approximately 160 students. Most Bachelor graduates then continue in Ostrava to attend Follow-up Master's study programmes in Mechanical Engineering. The Centre of Bachelor's Studies Endowment Fund, financially supporting Bachelor's studies at VŠB–TU Ostrava in the Šumperk branch, aims to support university education, especially technical, in the region. It was founded in 2003 by the City of Šumperk and important industrial companies from Šumperk and its surroundings.

3.6.2. Research Centres of Palacký University Olomouc

In 2020, three research centres integrated at the UP – the Centre of the Haná Region for Biotechnological and Agricultural Research (CRH), the Regional Centre of Advanced Technologies and Materials (RCPTM), and the Institute of Molecular and Translational Medicine (IMTM) – to form the Czech Advanced Technology and Research Institute (CATRIN) of Palacký University Olomouc.

Furthermore, BALUO Application Centre operates under UP's Faculty of Physical Culture, and the cooperation of University Hospital Olomouc and UP's Faculty of Medicine and Dentistry gave rise to the Czech National eHealth Centre (NTMC).

The description of the centres is given below.

3.6.2.1. Centre of the Haná Region for Biotechnological and Agricultural Research (CRH) / CATRIN

CRH is at the forefront of biotechnological research not only in the region, but it also has major impact worldwide. It conducts research in the areas of plant genetics and genomics, proteomics, and cellular and molecular biology, which is followed by experimental development of new growth regulators and biotechnological use of the plants. The centre utilises unique technologies and methods for the study of cytoskeletons of plant cells, classification and marking of chromosomes, mapping of the proteome, and preparation of transgenic plants; it also has climatic chambers and a phenotyping platform for the characterisation of mutant plants and the effects of the environment, as well as facilities for small-scale field trials.

3.6.2.2. Regional Centre of Advanced Technologies and Materials (RCPTM) / CATRIN

RCPTM is among Europe's leading workplaces in the areas of chemical, nanomaterial, and optical research, one that produces a high number of quality research results, has unique instrumentation, and cooperates with companies from the private and public application sectors. The centre is also engaged in a number of international projects and large international scientific collaborations. Scientific activities are focussed especially on magnetic nano-systems and coordination compounds for biomedicine and biotechnologies, nanomaterials based on metal oxides and iron compounds, but also hybrid nanostructures for environmental applications, graphene derivatives, carbon quantum dots, biomacromolecules, nano-silver for antimicrobial applications, description of features on the surface of micro-objects and nano-objects, development of miniaturised analytical devices, quantum information processing, and particle physics with high energy physics.

3.6.2.3. Institute of Molecular and Translational Medicine (IMTM) / CATRIN

IMTM is a technological infrastructure and platform for molecular-oriented basic and translating biomedicine research with an objective to understand the molecular bases of cancers and infectious diseases. Research focuses on identifying new biomarkers and therapeutic targets, on the assessment of the biological activity of small molecules by high-capacity screening tests, and on preclinical development. The institute's founding was initiated by Palacký University Olomouc by a project called BIOMEDREG under which the IMTM operates, in cooperation with University Hospital Olomouc, the Institute of Chemical Technology in Prague and the Institute of Organic Chemistry and Biochemistry CAS, and various important entities from the application sector. The project, amounting to more than CZK 856 million, was supported through the Operational Programme Research and Development for Innovation.

3.6.2.4. BALUO Application Centre

The BALUO Application Centre is operated under the Faculty of Physical Culture of Palacký University Olomouc (UP FPC). This unique science and technology park focuses on research, technology, innovative business, and vocational training in the area of physical activity, prevention of civilisation diseases, and support of a healthy lifestyle. The centre is located at the premises of the UP FPC.

source: <https://www.acbaluo.cz/>

3.6.2.5. Olomouc University Social Health Institute (OUSHI)

The OUSHI is a scientific and research organisation, the objective and mission of which is scientific research and education in the field of health, with special emphasis on social and spiritual determinants of health. The themes in view comprise inequality in health and vulnerable groups (youth, seniors, patients, Romanis).

The organisation's specific tasks include:

- Preparation and implementation of Czech and international research, especially into the social and psychological determinants of health in individuals and groups;
- Training and education of students and young scientists, supervision activities, training for trainers;
- Consulting and advisory activities for the academics, students as well as laypersons in the area of psychology and phenomenology of health.

source: <https://www.oushi.upol.cz>

3.6.2.6. Czech National eHealth Centre (NTMC)

The Czech National eHealth Centre (NTMC) is a joint project of University Hospital Olomouc and the Faculty of Medicine and Dentistry of Palacký University Olomouc (UP FMD). The NTMC was created as a coordination and educational centre for a rapidly developing branch of medicine – eHealth. There are currently various eHealth-related activities in the Czech Republic, but most of them only deal with subtasks. The objective of the NTMC is to unify these activities one a single organisational structure, explore and research into new directions and methods in the field, examine and implement these novelties and principles, and last but not least, develop and utilise modern methods in both pre-graduate and post-graduate education. Within the CR, NTMC is the only centre that focuses comprehensively on realising clinical research in eHealth. The National eHealth Centre is part of the infrastructure of University Hospital Olomouc as one of its treatment centres. Other cooperating partners include entities from university institutes, healthcare facilities, technology companies, and other relevant entities. Research is currently conducted especially in cardiology and diabetology, but NTMC aims to expand it to other areas of medicine (oncology, pneumology, neurology, etc.) where eHealth technology is purposeful and has potential for further development.

The objective of NTMC is not just providing current eHealth care, but primarily active work in the area of research, development, and scientific validation of new eHealth methods, getting top expertise from foreign entities and experts, dissemination of this expertise into other professional workplaces throughout the CR, education of new experts in the field of eHealth, and application of state-of-the-art methods in teaching within the medical and paramedical fields. Since 2014, eHealth has been part of the curriculum of UP FMD. Thanks to this centre, students and academics alike are able to go to study visits and internships in foreign professional institutions and companies engaged in eHealth. These include, for

instance, hospitals, technological and development companies, and research centres. The NTMC also aims to increase efficiency of healthcare provided to the elderly population not only through technology, but also through systemic measures that will lead to the spread of good practices from abroad and implementation of the integrated care into the Czech healthcare system.

3.6.3. Private R&D

The primary difference between public sector R&D and private sector R&D is the attitude towards research – the private sector performs research/innovation targeted to a specific problem the company or institution plans to resolve, and the solution is then applied in its products. Generally, the basic objectives include cost reduction, waste minimisation, increase of the use value of the products, profit increase, etc.

Public sector R&D, on the other hand, performs long-term basic research, which then specialises in the development of interesting findings and effects. An institution does not necessarily need to profit by this research, so it is not primarily aimed at commercialisation. These public sector research institutions can be contacted for assistance in the implementation of research and development of the issue in question in a form of applied research where routine R&D activities are extended with contract research or samples are tested using the institution's instrumentation.

Since 2020, the map of research and development in the Olomouc Region (see Figure 7 below) has been updated on a continuous basis through analysing the research and development capacities of the relevant entities in the region. The objective is to provide a source of information about the research and development activities/capacities of key entities in the region. Data from secondary sources of information as well as information acquired from interviews with representatives of companies are taken into account during the mapping. In addition to standard interviewing as part of the business developer activities of the Olomouc Regional Information Centre (ORIC), there are also in-depth questionnaire surveys performed at three-year intervals within the TACR INKA projects. The result is a standardised questionnaire identifying the real condition of a company, its interest in cooperation, and available capacity of its R&D department. The map makes it clear that companies focusing on R&D are primarily concentrated in major cities and towns, and frequently tied to public R&D institutions and private research establishments. The data collected also include current possibilities and available capacities in R&D the companies could share and/or provide to partners. However, the collected information about available capacities can vary substantially in time (companies with available research capacities can be busy over time – the private sector treats available capacity as a very valuable source and tries to maximise its use), and available capacities are changing constantly.

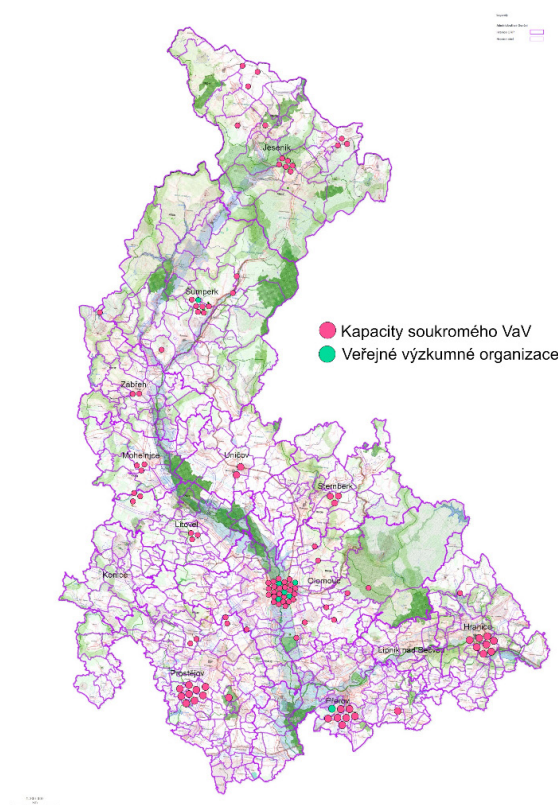


Figure 7 – Map of visited companies with R&D
(source: ORIC)

3.6.3.1. CENTRUM HYDRAULICKÉHO VÝZKUMU spol. s. r. o. (Centre for Hydraulic Research)

In 2010, SIGMA GROUP a. s. initiated the founding of the CENTRE FOR HYDRAULIC RESEARCH, a limited liability company with the status of a research organisation in accordance with EU legislation. This organisation aims to ensure participation of scientific and academic institutions, university students, and professionals in basic research and development in the area of fluid hydraulics, hydrostatic and hydrodynamic machines, and pumping technology.

The company mainly focuses on research and development in the area of natural and technical sciences, experimental activities in the area of fluid and gas hydraulics and dynamics; experimental activities in the area of hydrostatic and hydrodynamic machines and related technologies; mathematical optimisation of hydraulic shapes of components in hydrodynamic machines and hydraulic systems; acquiring and providing scientific and technological information; training in the area of hydraulics; and testing, measurement, analysis and inspection.

The centre also cooperates with significant scientific and research centres on basic and applied research and numerous important national and international institutions, such as the Institute of Thermomechanics CAS, BUT Brno, CTU Praha, Technical University of

Liberec, Technical University of Ostrava, Palacký University Olomouc, CERIT, IAPWS, Slovak University of Technology in Bratislava, and the University of Jyväskylä.

In its hydraulic laboratory, the centre operates the largest cavitation tunnel in the Czech Republic which is used for research into dynamic and erosion effects of cavitation. In addition to experimental research in the tunnel, the hydraulic laboratory of the centre performs visualisation and measurement of cavitation effects in the interiors of actual hydrodynamic machines. The centre has long-time experience with numerical modelling of cavitation, and in addition to the usual tools, it also utilises proprietary software that allows modelling of the dynamics of cavitation bubbles and cavitation structures including force effects of cavitation collapses.

Source: CENTRUM HYDRAULICKÉHO VÝZKUMU spol. s r. o.

3.6.3.2. AGRITEC, výzkum, šlechtění a služby, s. r. o. (AGRITEC, Research, Breeding, and Services)

AGRITEC is a limited liability company engaged in both applied and basic research for agriculture, the environment, and the food industry. It also focuses on the breeding of plants, seed propagation and sales, plant protection preparations, substrates, and animal feed. Agritec provides services in biochemistry, chemical analyses, and laboratory and field testing of preparations, excipients, and varieties. It also provides consulting and advisory services.

The company carries out research into the genetic resources of legumes, flax, and hemp; research of genetic and breeding technologies of legumes, especially flax and rape. It also examines the cultivation technologies of pea, bean, lupin, flax, hemp, and cumin, and attends to the integrated protection of legumes and flax. Furthermore, Agritec pays a great deal of attention to the breeding of new varieties of flax, pea, bean, and rape, and to maintenance breeding of its own and licensed varieties. It represents foreign companies in variety testing. The company also breeds, improves, stores, and puts into circulation seeds of legumes and technical crops.

In addition, Agritec provides the following services: testing and chemical analyses of inorganic and organic substances; determination of the levels of mycotoxins; scutching of the flax stalks and determination of the content and quality of fibre; testing of plant protection preparations for registration. The company operates the Business and Innovation Park that offers rental of offices and operating areas. Agritec sells plant protection preparations, trades in the seeds of field crops, grows and sells ornamental plants, vegetable plants, growing substrates, and feed for domestic animals and livestock.

3.6.3.3. Agrovýzkum Rapotín s. r. o.

Agrovýzkum Rapotín s. r. o. was founded in 2004 as a subsidiary of the Livestock Farming Research Institute. The main activity of the company is research and development focusing on the current issues in agriculture.

In its research activities, Agrovýzkum addresses especially the diet, breeding, and reproduction of cattle and sheep; farming in LFAs and NNRs; and the quality and

production of milk and meat. The company also provides bioimpedance spectroscopy and utilises a state-of-the-art laboratory where it ensures chemical analyses of all types of water, organic analyses of feed, plants, analyses of soil and other biological materials, and analyses of sludges and composts. The company provides technical consulting and operates an experimental accredited stable.

3.6.4. Other Significant Innovation Ecosystem Actors

3.6.4.1. Olomouc Region Innovation Centre (ORIC)

The Olomouc Region Innovation Centre (hereinafter “ORIC”) is an interest grouping of legal entities established for the purpose of development of the innovation ecosystem in the Olomouc Region. Currently, it has two members: the Olomouc Region and Palacký University Olomouc. Between 2019 and 2020, the original agency OK4Inovace was gradually restructured into a fully-fledged innovation centre, the vision of which is to be the first address for anyone from the region who wants to innovate and develop their potential in any way. In 2021, ORIC as the founding member joined seven other Czech innovation centres in the newly created professional network Ynovate.

ORIC is a partner and executive unit of the Smart Accelerator of the Olomouc Region II, co-financed and coordinated by the Olomouc Region. It implements its own activities beyond the scope of the project with an aim to:

- Develop the innovation ecosystem of the Olomouc Region;
- Establish a community of creative and enterprising people;
- Support innovative enterprise.

To this end, ORIC organises motivational meetings, conferences, and “matchmaking” events, maps and develops the innovation network across the territory of the Olomouc Region, and connects the individual actors, typically innovative companies, creative professionals, aspiring entrepreneurs, start-ups, universities and research centres, secondary schools, intermediary organisations, non-profits, and municipalities.

The portfolio of products for the companies currently comprises two consulting programmes: ORIC PLATINN and ORIC DIGI. Since 2021, schools and aspiring entrepreneurs can use the NašlápnUTO platform, offering consulting for business plans, but also motivational lectures at schools and thematic workshops (entrepreneurship academies). Every district capital now has a contact point cooperating with local entrepreneurs, and in addition, projects of regional innovation hubs, i.e., joint community points in the regions, are in the preparation stages. The first infrastructure of this type, incl. a FabLab-type technological workshop, will open in mid-2023 in Přerov.

Source: www.inovaceok.cz, www.naslapnu.to, www.ynovate.cz

3.6.4.2. Science and Technology Park of Palacký University Olomouc (UP STP)

The Science and Technology Park of Palacký University Olomouc creates a bridge between

the scientific and business world. In operation since 2000, the UP STP provides rental of offices and manufacturing areas, consultancy, and supports commercial use of Palacký University expertise. It has been operating specialised workplaces for 3D printing and numerical calculations since the end of 2015.

UP STP makes a contribution to the growth of the economic level of the Olomouc Region by supporting the development of innovative companies and establishment of spin-off and start-up companies with the emphasis on using the potential of Palacký University. It finds and supports cooperation in the implementation of the results of science and research in the commercial sphere and translates the needs of the commercial sphere into the scientific research workplaces of Palacký University Olomouc.

UP STP is an active part of the regional innovation infrastructure of the Olomouc Region. It engages in the implementation of the RIS3 Strategy of the Olomouc Region and is a member of several professional associations and networks (Enterprise Europe Network, Tuesday Business Network, Czech Innovation, Science and Technology Parks Association CR, National Cluster Association, Transfera.cz, Association of Innovative Entrepreneurship CR).

UP STP provides basic consultancy services to aspiring entrepreneurs from UP (e.g., through events like Business Mind and the UP Business Camp), provides rental of spaces for start-up and innovative companies (offices, laboratories, semi-industrial areas, virtual headquarters).

The Technology Transfer Office administers the intellectual property of Palacký University Olomouc. It engages in the development of commercially interesting projects utilising science and research results of the university; ensures commercial cooperation with companies in contract research, custom research, and licensing agreements; supports establishment of businesses by university employees which utilise the research and development results; and ensures project support for academics as well as companies.

One of the largest 3D printing centres in Moravia, UPrint 3D offers 3D printing from plastics, polymers, metallic powders, and paper, including 3D scanning. The numeric modelling workplace ensures numeric simulations in the ANSYS Multiphysics programme using an SGI UV2000 super computer, including rental of its computing time. In 2020, UP STP had 30 tenants with 164 employees.

Source: UP STP

3.6.4.3. Regional Chamber of Commerce of the Olomouc Region

The Regional Chamber of Commerce of the Olomouc Region (RCCOR) was established in 1999 and works as a voluntary association of district chambers of commerce in the Olomouc Region. The reason behind its establishment was to ensure unity in the representation of interests of entrepreneurs on the regional level. Thus, a gap in the structure of the chambers of commerce is filled, which was identified upon the creation of higher self-governing units – regions. The RCCOR is a legal entity established in accordance with the

stipulations of Section 20f et seq. of the Civil Code and is registered in the Associations Register maintained by the Regional Court in Ostrava.

Four district chambers of commerce in the Olomouc Region are members of the Regional Chamber of Commerce. Entrepreneurs are invited to become members of any district chamber. These chambers are based in the former district capitals of the Olomouc Region and provide a wide range of professional services for entrepreneurs.

The principal objective of the RCCOR is to:

- Help establish the business climate in the region, support business activities, promote, protect, and defend the objectives of business operators who are members of the district chambers of commerce (DCC), especially small and medium-sized enterprises;
- Operate as an interested, non-political, independent grouping of the chambers of commerce in the Jeseník, Prostějov, Přerov, and Šumperk Districts;
- Represent, coordinate, promote, and defend the interests of the member DCCs;
- Actively participate in the business development of regional business operators in the region, the Czech Republic, and abroad, primarily in the EU;
- Closely cooperate in regional development with state and regional bodies and business operators as well as all respective authorities and institutions;
- Engage in its own economic activities to gain resources for the support of small and medium-sized businesses.

Source: RCCOR

3.6.4.4. Okresní hospodářské komory

Five district chambers of commerce operate in the Olomouc Region:

- Olomouc District Chamber of Commerce
- Jeseník District Chamber of Commerce
- Prostějov District Chamber of Commerce
- Šumperk District Chamber of Commerce
- Přerov District Chamber of Commerce

These are business organisations that group together entrepreneurs and defend their interests. They are usually engaged in the support of business, export, professional training, enhancement of competitiveness, organisation of workshops and conferences, and obtaining information for entrepreneurs, always in the territory of the former districts. The district chambers of commerce are established and organised in accordance with Act No. 301/1992 Czech Law Coll., on the Czech Chamber of Commerce and Czech Chamber of Agriculture.

3.6.4.5. Confederation of Industry, Regional Office

The Confederation of Industry of the Czech Republic is a non-profit, voluntary, non-

political organisation bringing together Czech employers and entrepreneurs. As the largest employers' organisation, it represents a vital part of Czech industry and transport. Its mission is to influence the economic and social policy of the Czech government with the intent to create optimal conditions for dynamic development of business in the CR. The Confederation of Industry of the Czech Republic operates throughout the whole territory of the CR through its regional offices. Thanks to this, it informs its members in a timely fashion about current laws vital to their business. The confederation actively communicates with public administration and is a significant social partner on the regional level. The regional office has a territorial responsibility for the Olomouc, Zlín, and Pardubice regions.

3.6.4.6. CzechInvest – Regional Office Olomouc

CzechInvest, the Czech business and investment development agency, is a state aid organisation subordinated to the Czech Ministry of Industry and Trade. It negotiates both domestic and foreign investment in the areas of manufacture, strategic services, and technological centres, and supports small, medium-sized, and emerging innovative businesses, business infrastructure, and innovation. Abroad, CzechInvest promotes the Czech Republic as a suitable location for investments. It is the sole organisation that may submit applications for investment incentives to the governing bodies. It supports Czech companies interested in engaging in the supply chains of supranational companies. Through its services and development programmes, CzechInvest contributes to the development of domestic companies, Czech and international investors, as well as the overall business environment.

The regional office provides information about the agency's services; provides consulting to the representatives of the companies regarding the possible business support from the programmes of the EU Structural Funds that CzechInvest ensures; assists companies interested in implementing their investment in the region; cooperates with local governments and authorities, schools and other regional institutions in seeking opportunities for the development of the region's business environment; and conducts workshops. CzechInvest also has a very thoroughly prepared start-up support programme, linked with similar activities on the EU level, on the one hand, and activities in the Czech regions, on the other.

Source: CzechInvest

3.6.4.7. Business and Innovation Agency (API) – Regional Office Olomouc

The API is a state aid organisation subordinated to the Czech Ministry of Industry and Trade. It is an intermediary for the subsidy programmes of the Operational Programme Enterprise and Innovation for Competitiveness (OP EIC) and the follow-up subsidy programmes of the Operational Programme Technologies and Applications for Competitiveness (OP TAC), through which it is possible to co-finance business projects in the manufacturing industry and related services.

The agency administrates the subsidy programmes within the Operational Programme Technologies and Applications for Competitiveness (OP TAC 2021–2027), through which it helps co-finance business projects in the manufacturing industry and related services.

Within the OP TAC programmes, the agency aims at a wider spectrum of the development needs of companies of all sizes, and supports projects focusing on research, development and innovations, technological development, ICT, and eco-energy programmes.

The agency primarily provides assistance with informing about the opportunities for business support from the OP TAC, consults and administers projects from the initial idea to implementation to sustainability, organises workshops, and helps develop the Czech business and innovation environment.

Source: API

3.6.4.8. Labour Office, Office for the Olomouc Region

The Czech Labour Office (hereinafter the “CLO”) is an administrative body with nationwide authority and is an organisational unit of the state. Established on 1 April 2011 by Act No. 73/2011 Czech Law Coll., on the Labour Office of the Czech Republic and amending related acts, the CLO is governed by the Ministry of Labour and Social Affairs, which is its superior administrative body.

The Office for the Olomouc Region is an organisational unit of the Czech Labour Office and fulfils the following tasks within the region:

- In cooperation with contact points, the CLO creates conditions for the implementation of the state employment policy and carries out activities under the Employee Protection Act in the event of insolvency of their employer, under the State Social Support Act, the Act on Assistance in Material Need, the Social Services Act, and the Act on the Provision of Benefits to Disabled Persons;
- Cooperates with regional self-governing units and their authorities, as well as with social partners and employers' organisations on safeguarding employment, workforce mobility, human resources development, and social protection;
- Participates in the implementation of projects for which the CLO is a beneficiary or where the regional offices are engaged in the implementation of national and systemic projects for which the Ministry is a beneficiary;
- Ensures the agenda for the employee protection in the event of insolvency of their employer within the region;
- Continuously monitors and evaluates the labour market situation and adopts measures to influence labour demand and offers, and maintains records of employment vacancies;
- Mediates employment to job applicants and job seekers, provides consultancy for natural persons and employers in the area of career guidance and further professional training, as well as information and other services specified in the Employment Act;
- Ensures retraining for job applicants and job seekers, persons in vocational rehabilitation, and provides services related to vocational rehabilitation;
- Ensures the application of the mechanisms of active employment policy, grants contributions from the active employment policy funds, ensures the exercise of the

agenda relating to the mandatory share of employed persons with disabilities and support for the employment of persons with disabilities;

- Ensures the payment of non-insurance social benefits, unemployment benefits, and active employment policy benefits;
- Ensures the exercise of the agenda relating to foreign employment, employment of Czech nationals abroad, employment and records of EU citizens and foreigners in the CR;
- Ensures the exercise of the agenda relating to unemployment benefits and retraining benefits, non-insurance social benefits, authorisation of the performance of activities by children;
- Ensures the exercise of the agenda relating to foster care benefits and allowances for children of military personnel under the Act on Social and Legal Protection of Children.

source: <https://www.uradprace.cz/olomouc>

3.6.4.9. Territorial Employment Pact of the Olomouc Region

The Agreement on the Cooperation on Employment – the “Territorial Employment Pact of the Olomouc Region” – was signed on 30 August 2016 in Olomouc by and between the Olomouc Region, the Regional Chamber of Commerce of the Olomouc Region, the regional office of the Czech Labour Office, the Regional Council of the Czech-Moravian Confederation of Trade Unions in the Olomouc Region, and the Confederation of Industry of the Czech Republic. The Employment Pact was concluded for an unlimited period of time. The pact holder is the registered institute, PZOK.

The first territorial employment pact in the Czech Republic was signed in 2011 in the Moravian-Silesian Region. The Olomouc Region was the tenth to adopt such a pact. The agreement will consolidate and link the activities of organisations engaged in employment. The objectives of the Territorial Employment Pact of the Olomouc Region have been clearly defined. We will strive for balance between supply and demand on the regional labour market and contribute to the training of qualified staff for the competitive economy in the Olomouc Region. We also support traditional sectors with a high potential for the strategic and sustainable development of the region as well as creation of quality jobs.

One of the activities of the Territorial Employment Pact of the Olomouc Region will be engagement of its members in the upcoming project “KOMPAS – Labour Market Forecast” of the Ministry of Labour and Social Affairs. The main topic of this project will be creating a system for labour market monitoring and forecasting, interconnecting the national and regional levels.

source: <http://www.pzok.cz/>

3.6.5. Clusters in the Olomouc Region

At present, three clusters actively operate in the territory of the Olomouc Region: MedChemBio, Czech Optical Cluster, and CREA Hydro&Energy.

3.6.5.1. MedChemBio Cluster

This cluster is a key actor in cooperation of academic institutions, companies, suppliers, investors, professional establishments, and producers in the areas of development, testing, and manufacture of pharmaceuticals, fostering the development of medicinal chemistry and chemical biology in the Czech Republic. The cluster has created a functional platform for the exchange of professional knowledge, has managed to contribute to the development of its membership through the possibility of participation in the implementation of joint projects, and in specialised events regularly organised by the cluster, making use of the available infrastructure. The cluster provides a wide-ranging information service, alerts members to suitable business opportunities and promotional opportunities, and facilitates meetings with eminent experts.

The cluster's key partner is Palacký University Olomouc, which provides a background environment to MedChemBio in two of its faculties – the Faculty of Medicine and Dentistry and the Faculty of Science. The cluster closely cooperates primarily with the Institute of Molecular and Translational Medicine of the Faculty of Medicine and Dentistry, Palacký University Olomouc, a prominent platform for research and development of pharmaceuticals and biomarkers.

The MedChemBio cluster has successfully implemented projects co-financed from EU Structural Funds. The cluster used these projects to develop a laboratory in compliance with the Good Manufacturing Practice that provides services in the area of quality control of medicinal products, active substances, starting materials, and intermediate products. The MedChemBio laboratory primarily focuses on validations of analytical methods including the processing of the corresponding validation documents. The cluster comprises 19 members, seven of which are from the Olomouc Region.

Source: www.medchembio.cz

3.6.5.2. Czech Optical Cluster

The Czech Optical Cluster (COC) was created with the aim to improve conditions for optical industry development in the Czech Republic (with emphasis on the Olomouc Region) through cooperation of companies, the public sector, and the educational sector throughout the entire value chain in the field of optics, optomechatronics, photonics, optoelectronics, and fine mechanics, including related production, technology, and service development in suppliers' and customers' domains, in three areas: industrial and consumer optics, military optics, and lighting technology. It is the newest cluster in the territory of the Olomouc Region (established in late 2017). The cluster is developing dynamically and currently has 34 members, four of which are from the Olomouc Region.

The main activities of the cluster include research, development, and innovation; cooperation on development projects; international projects; technology development; shared infrastructure development; determination of the directions of development; transfer of expertise on trends and technologies; human resource development; specialised events; training; attracting talent; work experience programmes for students; scholarship schemes; marketing and public relations; cluster promotion; creating the regional and industry

identity of the Olomouc Region as a centre of optics; internationalisation; cooperation with European clusters; access to international events; joint international projects; joint trade fair exhibitions abroad; promoting the industry; support for thematic and industry workgroups.

Source: <http://www.optickyklastr.cz/>

3.6.5.3. CREA Hydro&Energy, z. s.

The CREA Hydro&Energy cluster (CREA) is a registered association active in the field of technologies for water management structures, water and waste management, and renewable energy sources. Its members are primarily companies from the South Moravian Region and the Olomouc Region. The cluster primarily operates in Moravia (the Morava River basin), but it is also active on the nationwide and even worldwide level. The CREA is based in Brno and has two branches – Brno and Olomouc. Six SMEs from the Olomouc Region are members of the cluster, which has a total of 23 members, including Mendel University in Brno, BUT, and CHMI. Based on memoranda, the cluster also cooperates with Palacký University Olomouc, ORIC, and the Morava River Basin Administration. The members and partners of the cluster jointly participate in research, development, and innovations of products, promote the industry, make presentations, and implement projects in the CR and abroad.

The CREA has 6 professional work groups (WG), including the Hydropower WG, the Pumping and Irrigation Technology WG, the Waterworks Safety WG, and the Water Purification and Treatment WG. The work groups implement joint research projects for the development and innovations of technologies and services. The development of digitalisation in the cluster's area of competence has become an important part of its activities.

In the field of infrastructure development, the cluster has been creating development capacities in both of its branches. In Olomouc, these comprise technologies for hydrogeological research, unmanned aerial reconnaissance, technical measurements and their digitalisation from the programme of ITI in the Olomouc Agglomeration.

A significant portion of the cluster's activities include internationalisation, international cooperation, and the support for the entry of SMEs to foreign markets. The CREA has 6 territorial work groups (TWG), the most active being the Middle East TWG (especially in Iraq) and the Southeast Asia TWG (in Thailand, the Philippines, Indonesia and the rest of ASEAN countries). Within this framework, the cluster's members and partners have implemented numerous projects, including community development and commercial projects, and established subsidiaries in Iraq and Thailand with the cluster's support. Various internationalisation projects from European programmes such as COSME, Interreg Europe, and Horizon Europe develop innovation ecosystems in water management and promote the cooperation of companies, schools, and regions, primarily in Europe.

The CREA represents the South Moravian Region and the Olomouc Region in the pan-European water-management structures Water Smart Territories and Water4All. One of the extensive and advanced European projects is the development of the European

Platform of Vocational Excellence. Under its auspices, the Central European Centre for Vocational Education Water in the Landscape was established, focusing on vocational training, especially within secondary education, in the skills and knowledge necessary for this field. Several schools from the Olomouc Region participate in this project.

Source: <http://www.creacz.com/>

3.6.5.4. Moravskoslezský automobilový klastr z. s.

Companies from the Olomouc Region are also active in the Moravskoslezský automobilový klastr z. s. (the Moravian-Silesian Autocluster). This registered association was established to support innovation and increase competitiveness and exports of the linked companies, entrepreneurs, and institutions operating not only in the Moravian-Silesian Region. It strives to develop the joint identity of companies in the cluster and build trust and a positive attitude toward the automotive industry and the whole region.

Source: <https://autoklastr.cz/cs/>

3.6.6. Coworking Centres

3.6.6.1. Vault 42

Vault 42 Coworking Centre seeks to bring together freelancers, and entrepreneurs as well as remote employees across creative and technical industries. It organises events each month, its members work in start-ups as well as international companies, and together creates background for all talents who recognise the principle of cooperation instead of competition.

The centre educates the public in society-wide topics such as international cooperation, visual smog, freelancing, architecture and public space, education vs. practice, and business enterprise. It also organises unique international events in Olomouc, such as the F*ckUp Nights, Startup Weekend, Behance, Google Development Group, and others. It co-creates PR for Olomouc thanks to the presentation of talent, projects, companies, etc., and supports brain-gaining.

Source: <https://www.vault42.cz/>

3.6.6.2. Telegraph

Telegraph is a multifunctional platform connecting culture, work, and relaxation. Its core is openness; its basic feature is versatility. It offers diverse usage, while ensuring quality. Its building, the former telegraph company, has preserved its genius loci, the essence of which is functionality – not only thanks to the clever architectural design of the conversion of structure from 1908, but primarily because of the nature of its activities. Telegraph connects those from afar as well as locals, just as the invention of the telegraph did for a century. Artists and art lovers, entrepreneurs, freelancers, and work teams come together in one place.

Source: <http://www.telegraph.cz/>

3.6.6.3. Other coworking and creative centre in the Olomouc Region

Several other smaller coworking centres, shared creative workshops, etc., operate in the territory of the Olomouc Region. Worth noting are CoworkJes in Jeseník, COWorking in Přerov, and Haná Workshop in Olomouc.

Since 2020, the Olomouc Region Innovation Centre has been initiating the establishment of regional innovation hubs. The first such hub will begin operations in Přerov in 2023, while regional innovation hubs in Jeseník, Šumperk, and Zábřeh are currently being discussed.

Actors of the Olomouc Region



Figure 8 – Innovation ecosystem of the Olomouc Region
(source: ORIC)



4 | **Domains of Specialisation**

The domains of specialisation represent vertical thematic priorities of RIS3. They are based on the economically strongest industries in the region with the most significant application and transfer potential.

With respect to the different sectoral structure and orientation of research organisations and companies in the Olomouc Region, the suggestion of the domains of specialisation stems from three model situations:

- From the presence of innovative businesses with supercritical expenditure for R&D, reflecting the existence of a proprietary R&D centre or purchase of R&D results from companies and research organisations outside the region; these R&D inputs are then used by the companies in manufacture that translates into the region's leading economic indicators;
- From the presence of research specialisation orientation, which cooperate more with the application sphere and final public users outside the region (for instance, because the region lacks a sufficient number of suitable companies), but can contribute to the competitiveness of the OR through production or attracting quality R&D human resources, employment, proceeds from the commercialisation of their R&D results, or their utilisation by public users (such as the military or healthcare sectors);
- From the sectoral match in the orientation of research organisations and economic specialisation in the region, but only to a limited extent.

The following primary and secondary data have been used to update the fields of specialisation:

- Indicators broken down into branches of economic activity (CZ-NACE);
- Business research and development expenditure (reflects the critical mass of companies with R&D-based strategies);
- Sectoral revenues;
- Number of employees (R&D, total);
- Statistics of investment incentives;
- Calculated location quotients (sales made by businesses, employment);
- Success rate in the implementation of domestic and international R&D+I projects;
- Trends in the sectoral publication output of the workplaces of research organisations in the Czech Republic (IDEA CERGE);
- Bibliometric data (RIV points);
- Data on the activities of the Technology Transfer Centres;
- Findings of the innovation capacity mapping of the Olomouc Region;
- Outputs from the dealings with the representatives of research organisations;
- Outputs from the dealings of the Regional Innovation Platforms;
- Outcomes of the ad hoc work groups for the update of the regional RIS3 domains.

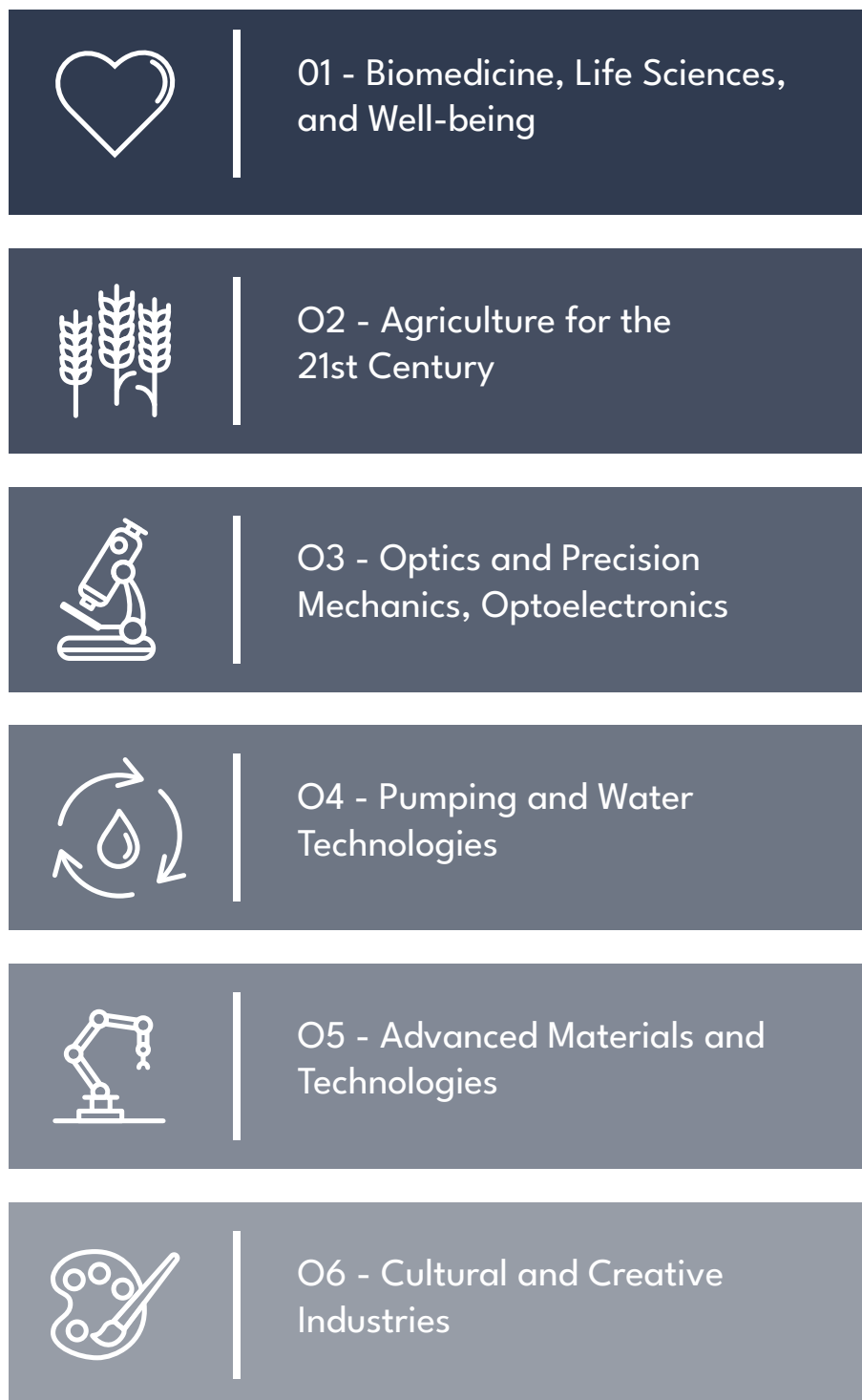
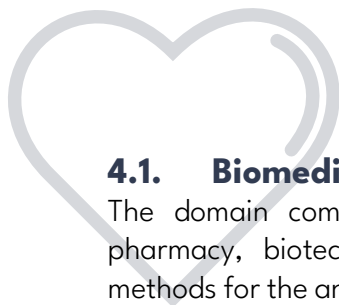


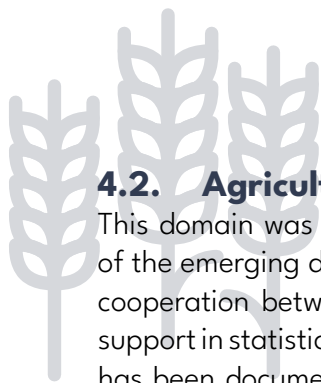
Figure 9 – Schematic representation of the domains of specialisation in the Olomouc Region
(source: ORIC)



4.1. Biomedicine, Life Sciences, and Well-being

The domain comprises primarily healthcare and space services, eHealth, ecology, pharmacy, biotechnologies, biomedicine, chemical and biological analyses, specific methods for the analyses of pharmaceuticals and pharmaceutical products, bioinformatics and health informatics, production of foodstuffs and dietary supplements for a healthy lifestyle, and others. It also includes research of physical activity in the BALUO Application Centre as well as development of new analytical methods for pharmaceuticals containing iron with Mössbauer spectroscopy. This domain concentrates key research, development, and educational capacities of the region (Institute of Molecular and Translational Medicine of UP Olomouc, University Hospital Olomouc, Military Hospital at Klášterní Hradisko, AGEL a. s., Palacký University, etc.). It provides work to more than 13,500 employees and its turnover exceeds CZK 22 billion. Statistical analysis shows the companies can be separated into three groups – Biomedicine, Life Sciences, and Well-being in all its scope.

- The first group includes entities focusing on the manufacture of medical equipment such as biosensors, gastrointestinal and ureteral stents, endoscopes, spectrometers, etc. The most important companies are: Medi-Globe, s. r. o. BIOSENSOR PLUS, s. r. o., and Olympus Medical Products Czech spol. s r. o. These companies have a foreign ownership structure and limited decision-making power. Specifically in the area of subsidies, they are dependent on the decisions of the parent company, and due to the foreign structure, they frequently do not satisfy the conditions of the subsidies.
- The second group features companies working with APIs (Active Pharmaceutical Ingredients) that represent part of the Life Sciences domain. These include, for instance, Alven Laboratories, s. r. o. and FARMAK, a. s. These companies fall into the categories of small, medium-sized, and large enterprises, and they are distinguished by a large number of employees engaged purely in research and development. They need 6 to 8 years of development to introduce new products to the market. It is a cost item for the companies, and up to 20% of their turnover is used to cover research and development expenditures.
- The third group includes entities engaged in healthcare, specifically, in biocosmetic products, dietary supplements, etc., such as NUTREND, a. s., Naturfyt – Bio s. r. o., and FUTURE MEDICINE s. r. o. These are medium-sized and small enterprises as well as start-up. In general, a large number of such companies operate on the market, and worth mentioning for the Olomouc Region are also companies like VIVACO, s. r. o., OLIMPEX, spol. s r. o., DSL Food s. r. o., and PharmaFit s. r. o., to name just a few. This category also includes entities involved in mental health (e.g., through projects organised by the UP Sts Cyril and Methodius Faculty of Theology and the Olomouc University Social Health Institute) and physical health (such as the BALUO Application Centre and other physiotherapeutic facilities). Also, the relatively strong presence of balneology in the region must be mentioned.



4.2. Agriculture for the 21st Century

This domain was indicated in the previous version of the Regional RIS3 Strategy as one of the emerging domains. Due to the extensive scientific research infrastructure and early cooperation between local companies, it was possible to define industries with no firm support in statistical data, but the development of which could be expected. The assumption has been documented by newly acquired data from the latest mapping implemented by the Olomouc Region Innovation Centre together with the National Cluster Association as part of the Detailed Research Study into the Development Potential of the Domains of Specialisation; see Attachment 1.

The basic premise of sustainable agriculture and forestry is the development and increase of efficiency and productivity with the resulting competitiveness of agricultural and forestry enterprises. Safeguarding sustainable (environmentally sound) agricultural and forestry production depends on the stabilisation and increase of the quality of the basic means of production – soil – and ensuring the strategic level of production of the main agricultural commodities in the temperate regions, especially those with the potential for competitive production in the conditions prevailing in the CR. In the area of crop production, especially the interests of the society regarding sustainable land and water use are asserted, while the issues of well-being, active development of animal health, and their high level of adaptability to the growing production are accentuated in livestock production. In both cases, this brings pressure due to the increase of the production costs. This industry has a long tradition in the Olomouc Region and the activities primarily apply to basic and applied research in agriculture, food industry, and the environment. Research and development activities focus on addressing current challenges in agriculture. New varieties with increased resistance are developed and the use of plants as platforms for the production of various substances is being explored, including substances with antimicrobial, protective, antioxidative, and detoxifying effects. Local companies also produce seed, plant protection preparations, substrates, animal feed, a hydroponically-grown plants. Genetic resources of plants are researched, as well as genetic and plant breeding methodologies of legumes and growing methods. Tests and analyses of both inorganic and organic substances, types of soil, and biological materials are carried out. Growth regulators are being researched, as well as the environmental exposure of plants. The CRH at UP Olomouc is unique on the global scale in decoding the genetic information of crops, especially wheat and barley. In 2020, the domain employed 963 people. Total turnover was CZK 697 billion.

- The first group comprises manufacturing companies – production of agricultural machines and parts. One example is FORTEX - AGS a. s., KOVO Division, which focuses on the production of agricultural machines for its partner, ÚSOVSKO a. s., and its subsidiaries (ÚSOVSKO AGRO, s. r. o, ÚSOVSKO FOOD, a. s.).
- The second group comprises companies engaged in primary agricultural production with minimum impact on sustainable development, such as ÚSOVSKO AGRO s. r. o.
- The third group includes companies focusing on seed propagation, animal feed, and seed, for instance, SEMO, a. s. In contrast to the second group, the companies themselves develop seeds more resistant to pests, thus minimising the use of pesticides and chemical sprays. In this way, they support the conception of

sustainable development.

- The fourth group is the most interesting from the domain's perspective, as it clearly shows the direct impact on sustainable development in agriculture. It features companies engaged in the development of agricultural technologies for sustainable development, such as Festada s. r. o., AGROVÁPNO s. r. o., Flenexa plus s. r. o. and others.

4.3. Optics and Precision Mechanics, Optoelectronics

The domain of Optics and Precision Mechanics and Optoelectronics is among the traditional domains in the Olomouc Region. Production incorporates the majority of products within the entire value chain in the field of optics, optomechatronics, photonics, optoelectronics, and fine mechanics. Companies like HELLA AUTOTECHNIK NOVA, s. r. o. and Meopta – optika, s. r. o. are very distinguished employers in the region in this industry, while PRAMACOM-HT, spol. s r. o. is a significant representative of SMEs in this field. The Olomouc Region is one of the most important in the optics industry. Products worth mentioning are, for instance, observation telescopes and telescopic sights, sensors, optoelectronics, night vision devices, optical sets for industrial applications, systems for the inspection of semiconductor boards, projection systems, optomechanical systems for medical and laboratory use, and others. Another strong industry is the manufacture and installation of headlamps for the automotive industry and endoscopic devices and tools. As regards research and universities, UP Olomouc has a Department of Optics. There is also the Joint Laboratory of Optics of Palacký University Olomouc and the Institute of Physics of the Czech Academy of Sciences, and RCPTM.

This domain employs more than 4,600 employees and the turnover exceeds CZK 13 billion. There has been a steep decline in the number of employees against previous years (from 5,500 employees). This has been caused by the lack of sufficiently qualified employees who would fill the available vacancies.

There are strong ties to the cooperation with secondary schools and universities within the domain due to the demand for and education of trained employees. The companies are very active in this regard compared to other domains. Cooperation on the secondary school level applies exclusively to human resources and the lack thereof. There are two levels of cooperation on the university level. The first is ensuring qualified human resources, which is fundamental for companies like HELLA AUTOTECHNIK NOVA, s. r. o. and Meopta – optika, s. r. o. In particular, important linking to Palacký University Olomouc can be seen, specifically to its Department of Optics as the only Czech department specialising in optics and optoelectronics, with specialised workshops linked to regional industries.

The second level is cooperation on projects financed from subsidies and on research activities subject to orders, demand, and current market trends. In addition to Palacký University Olomouc, this cooperation is also held with the CTU Prague, the Czech Academy of Sciences, BUT Brno, VŠB–TU Ostrava, and universities abroad.

Links to extra-regional institutions like VUTS Liberec focusing on the textile industry, the

Institute of Physics of the CAS – The HiLASE Laser Centre in Dolní Břežany, the Central European Institute of Technology (CEITEC) in Brno, the TOPTEC (Research Centre for Special Optics and Optoelectronic Systems), the Institute of Scientific Instruments of the CAS, and OptoLab (the Optical Networks Laboratory of the Department of Telecommunications of FEEC BUT) have been made within the domain. The relationship with the military industry reaches beyond the Olomouc Region via entities like the University of Defence in Brno and OPTICS TRADE in Nový Jičín.

4.4. Pumping and Water Technologies

This domain has a long tradition in the Olomouc Region, with the prevailing manufacture of pumps and blowers. There are also companies engaged in waste water treatment including design, implementation, and modernisation. Products produced include tanks, pressure vessels, water purification plants, domestic water systems, hydraulic transportation systems, hoses, pipes, couplings, mechanical seals, shutter valves and check valves, and duct attenuators. Follow-up industries include the manufacture of heat exchangers, cooling and filtration systems, measuring devices, etc. Research in this field is conducted by the RCPTM of UP Olomouc and the Centre for Hydraulic Research, part of MATCA. Development and innovations including digitalisation, development of R&D+I infrastructure, development of human resources, and internationalisation of the industry are also actively developed within the CREA Hydro&Energy cluster. More than 4,000 people are employed in this domain and its turnover exceeds CZK 11 billion.

The water technologies group can be separated into two dominant categories:

- The first category is characteristic of companies that ensure a certain part of their manufacture in combination with service offers, like system design. These include companies focusing on waste water treatment systems including their design, construction and assembly, but also on process control, irrigation systems, supplies of water management assemblies, etc. Representatives of this group are KUNST, spol s r. o., ELZACO s. r. o., Hydrosystem projekt a. s., and ABO valve s. r. o., to name a few.
- The second category comprises companies focusing purely on water supply and water-related activities (MORAVSKÁ VODÁRENSKÁ a. s., Šumperská provozní vodohospodářská společnost a. s.).

The companies were included into the groups based on their dominant activity. Many companies can be included in both categories. On the other hand, there are companies in the domain with the same structure as engineering companies, but they were put here based on their final products.

4.5. Advanced Materials and Technologies

Entities in the domain of Advanced Materials and Technologies were included in the domain of Machinery and Electromechanical Industry in the previous version of the RIS3 Strategy of the Olomouc Region. This domain currently reflects the innovative segment of industry with a higher added value and own research facilities, one that reacts or has ambitions to react to current trends in Industry 4.0, digital and virtual technologies, automation, and robotisation.

The domain is characterised by an exceptionally large variety of products and encompasses dozens of industries. The production of machines, equipment, and precision components is a significant part of the Czech manufacturing industry, which includes a wide range of devices that mechanically or thermally act on materials or that perform manufacturing processes on materials including the production of their mechanical components that produce or utilise force. This also includes specially produced parts for these machines and devices. The most technically challenging fields of mechanical engineering, those that connect high or extreme demands on the manufacturing precision, quality, and parameters of surface integrity, as well as maximum demands on production performance, productivity, and reliability, include Machine Tools and Precision Engineering, the products of which utilise advanced electronics, data processing, communication, and controls (primarily mechatronic products). Generally, this is primary production, the products of which (machines, equipment, components) are used by downstream engineering industries, but also non-engineering sectors of the manufacturing industry.

The main products comprise cutting tools, truck trailers and semitrailers, military vehicles, screens and crushers, diamond tools, excavators, ferrite cores, automotive products, needle and roller bearings, springs, residential containers, vacuum pumps, industrial sewing machines, sound systems, record players, flat electric heating equipment, electric motors, domestic appliances, etc.

In terms of public research, this domain is represented in the region especially by RCPTM at UP. Except for a subsidiary of VŠB-TUO, there is no technical university in the region directly engaged in machinery or electrical engineering.

The domain employs over 17,000 people and its turnover exceeds CZK 114 billion.

4.6. Cultural and Creative Industries

Cultural and Creative Industries (CCI) are one of the domains with great development potential. They not only represent an original variant of clean and sustainable economic activity, but they also offer added value to other industries. At the same time, they contribute to the quality of the environment, which is an important factor for retaining or attracting specialised workforce across all economic areas. The CCIs are a quite varied area on the inside (encompassing architecture, design, PR, advertising and copywriting, audio-visual services, music, books, and print, the gaming industry, software, new media and related IT services, performing arts, visual arts, handicrafts, cultural heritage), but they are typical for strong links between the subcategories (film and video need music, PR needs film and

copywriting, performing arts need architecture, etc.). It is therefore inherently problematic to establish a hierarchy of the internal segments, yet the available data and mapping show that selected sectors are more potent regionally, with a clear growth potential.

The area of development of software and IT services faces numerous systemic problems (insufficient training structures in the region, shortage of skilled labour), yet it is a strong sector within the CCI in terms of the number of actors and turnover, one that benefits greatly, in the post-pandemic time, from its possibility of remote working, as well as the local patriotism of a number of its actors, digital nomadism potential, and the region's competitiveness thanks to lower costs of living. The region is specific in a lower number of medium-sized enterprises and a considerable share of small enterprises, micro-enterprises, and freelancers. The region is not yet able to properly participate in the dynamically evolving field of game development (as it requires a firm background of supporting professions, e.g., creative), but the position of companies is stronger in the development of CRM and ERP systems, specialised applications, etc. Similar to other CCI sectors, this one also suffers, according to the data, from the absence of networking events. On the other hand, it benefits from the developing coworking infrastructure in Olomouc and prospectively in other parts of the region.

Its strong position in the region, partly due to the structure and quality of secondary schools, is seen in the area of trades and clothing industry. This also shows variability in the enterprise sizes, with large numbers of small enterprises and micro-enterprises. The area of trades is broad, with strong ties to the regional specificities, including elements relating to natural history and folklore. Challenges that are likely to consolidate the position of trades and clothing industry include, for instance, systemisation and branding of locally specific products and services, including the existence of an institute ambassador. Also important for this area is linking to various distribution and presentation platforms (online, fairs, trans/regional design shows, comprehensive presentations abroad). This sector's strength lies in the possibility of representation of the actors across the region.

Great potential is seen in the area of audio-visual services, graphic design, printing, and the book industry. Although audio-visual production is only developed partially in the region at secondary art schools, a number of creative artist work organically in the region thanks to clients' demands. Crucial, to a certain extent, is also the existence of curriculum at UP devoted to the theory of audio-visual and performing culture, which also generates interest in practical creation and transcends to the area of cultural management. This is one of the reasons behind the existence of a strong and well-profiled array of festival events (film, theatre, literature) with great importance for other economic sectors as well as the region's branding. Audio-visual production (in combination with the PR and advertising) is a significant source of added value for both the industry and the public sector, but on the other hand, utilisation of the region itself for incoming film productions has been neglected, which can be attributed to the absence of a properly functioning film office. Design is in a similar situation. In contrast to other regions, secondary schools are at the centre of vocational training, but various smaller studios and especially individual entrepreneurs operate organically to satisfy the demand from local industry and the public sector, but also from outside the region thanks to the price competitiveness and

the clients' interest. According to the mapping, the book and publishing industry is also a voluminous sector of the CCI, the importance of which is sustained by the existing school structure (Secondary Polygraphy School, Faculty of Arts of UP Olomouc) and the book design festival. The establishment of certain fields of study at UP training graduates for these sectors (industrial design, editorship, with plans for culture management) must be considered promising.

Horizontally, a great opportunity for the whole area of CCI is the development of the national database of creative professionals by the MCCR, a project that can contribute to the visibility of the actors and their efficient contacts with other industrial sectors. Significant for the Olomouc Region is the paradigm shift of the CCI, which newly opens to the theme of creative gastronomy. This particular motive plays an increasingly important role in the region's visibility and is an area of possible systemic support in the future.

So far, the most economically significant part of the domain is software development, which constituted a separate domain in the previous version of the Regional RIS3 Strategy.

4.7. Societal Challenges and the RIS3 Missions

The National RIS3 Strategy 2021+ (NRIS3) envisages RIS3 "Missions". These are NRIS3 priorities that will be oriented to addressing societal challenges and set up to be consistent with the mission-oriented innovation policy, a current trend followed by policies of support for research and innovation on the EU level and in other developed countries.

The planned RIS3 Missions should especially:

- focus R&D+I in the CR to addressing selected societal challenges with respect to the geopolitical situation and the aspects of sustainability;
- be linked to the basic European strategic guidelines and documents;
- link the themes across the domains of specialisation, encourage cooperation across the National Innovation Platforms / sectors, support interdisciplinarity;
- engage other interesting actors in the RIS3, activate existing EDP participants including the national granting authorities and regional authorities;
- establish specific, measurable objectives attainable through R&D+I.

The missions will take the form of thematic NRIS3 priorities, i.e., their status will be analogous to the domains of specialisation.

Crucial in terms of financial support of the missions is the Expert Group of Support Providers in RIS3, comprising the main support providers for research, development, and innovation, who will oversee the calls in the 2021–2027 programming period. The support for projects that fulfil the missions can take place via targeted calls, or in the form of allowance within the existing call of the relevant programme.

4.7.1. Draft pilot NRIS3 Mission – Reduction of Material and Energy Intensity of the Economy

The mission of interventions in this area is using research, development, and innovation to transform the Czech economy toward efficient use of material and energy resources, optimisation of manufacturing processes, and reduction of dependence on external material resources.

The mission is divided into three strategic areas: decarbonisation, decentralisation, and circularity. A Mission Objective Card, describing the basic parameters needed to fulfil the mission, was issued for each of them.



5 | SWOT Analysis of the Innovation Ecosystem of the Olomouc Region

The SWOT analysis was processed using the primary statistical source (see below), and discussions and workshops with the key actors in the Olomouc Region. When preparing the analysis, taken into account was the region's innovation ecosystem, which is influenced by various factors and effects. Significant aspects include the socio-economic potential of the region, availability of human resources relating to the level and accessibility of education on all levels, as well as the innovation potential and interest of the business sector.

(Sources: NCA – Detailed Research Study into the Development Potential of the Domains of Specialisation in the Olomouc Region; data from CSO; SWOT analyses in the individual areas; SWOT analysis of UP; Palacký University Olomouc Strategic Plan for 2021; Development Strategy of the Olomouc Region Territory)



Figure 10 – SWOT analysis
(source: ORIC)

STRENGTHS	WEAKNESSES
Excellent research background with the assumption of applicable R&D output: Regional Centres of Excellence of Palacký University Olomouc (Regional Centre of Advanced Technologies and Materials; Centre of Haná Region for Biotechnological Research; Institute of Molecular and Translational Medicine; Czech National eHealth Centre), optics, special education, BALUO.	Significant economic and social differences between the individual parts of the region.
Existence of stable domestic companies that plan their growth and have their own development or cooperate with a university.	Inconsistent marketing of the Olomouc Region in terms of R&D+I.
Privileged position of science and industry in the area of optics, optomechatronics and fine mechanics, research into quantum technology compared to other regions.	Continued lack of confidence between the innovation ecosystem actors. Low degree of identification with the RIS3 themes.
	Lack of sectoral correspondence in the corporate and academic environment in parts of the regional specialisation, which reduces the feasibility of linking and the potential for the creation and application of breakthrough technologies with the final production in the CR. Continued separation between research and education and practice.
Palacký University Olomouc offers curricula not available elsewhere in the CR (e.g., nanotechnologies, optics, nanomaterial chemistry with follow-up material chemistry, etc.).	Low degree of internationalisation of small and medium-sized enterprises with own final products. Limited ability to expand abroad, especially to remote developed markets, frequently despite a firm position in the CR.
The partial 2022 QS EECA ranking focused on Eastern Europe and Central Asia included 450 institutions from 30 countries. Palacký University Olomouc ranked 36th, reaching a historic high by improving its position by one place. As in the previous year, UP was the best in the CR in Citations per Paper (13th place) and International Faculty (30th place).	Low number of established spin-off companies, low importance of commercialisation in the mindset of researchers, lack of practical motivation toward maximum valuation of expertise (equity interest, intellectual property licensing).
Presence of high-end research infrastructure (apparatuses, laboratories, related equipment). Attractive background for further development of competences and increase of the level of R&D.	Inability of numerous small and medium-sized enterprises to manage innovation processes, lower proportion of knowledge-intensive activities with the resulting low innovation demand.
Existence of research teams able to generate internationally unique results [such as biomedical research, nanomaterials, research into plant hormones, material research, imaging and analytical methods (Mössbauer spectroscopy), molecular processes].	Notwithstanding indisputable results in basic research [especially in the area of new (nano)materials and technologies, agricultural research, biomedicine], the media image of the region as a centre of R&D+I is weak.
High employability of graduates.	Wage policy problems.
Willingness of the companies to invest in technologies and manufacturing premises.	Relatively low per capita GDP and its low dynamism.
Existence of an extensive science and technology park with ample possibilities for its development and further growth.	Slow approval processes of institutions hindering dynamic development.
Number of R&D staff.	

OPPORTUNITIES	THREATS
Position in global value chains (far from end customers).	Exodus of educated people from the region.
Existuje několik akademických spin-off firem, ale angažovanost akademiků v pozici vedení těchto firem je nízká za současné absence profesionálního managementu v těchto firmách.	Pouze malý počet firem má relevantní VaV oddělení.
There are several academic spin-off companies, but the involvement of academics in leadership positions in these companies is low in the current absence of professional management in these companies.	Only a small number of companies have a relevant R&D department.
Emerging innovation ecosystem in district cities, involvement of cities (Jeseník, Prostějov, Přerov, Šumperk) to support the emergence of innovation ecosystems – decentralisation.	Mismatch between the needs of companies and the objectives of research institutes (research fields of Palacký University in Olomouc do not have enough suitable industrial partners in the region).
Potential of UP STP in the field of technology and knowledge transfer, e.g., in cooperation with other entities in the area in the development of the UP Innovation and Transfer Centre.	Worse perception of the quality of some secondary school graduates by employers.
Emerging fields integrating R&D activities with managerial and/or engineering skills.	Insufficient capacity of innovation infrastructure in the region.
Thanks to Palacký University Olomouc, there are students who speak non-traditional languages, especially students of the Faculty of Arts, Faculty of Medicine and Dentistry, and other accredited foreign fields of study.	Lack of concept caused by changes of political leadership at the regional and municipal levels.
Creation of new fields of study at universities in the region in response to changes in the labour market and the needs of employers.	The economy of the region is strongly dependent on the activities and demand of multinational companies; many of them are suppliers of the automotive industry and local suppliers are often linked to these companies. The departure of these companies and problems in the automotive industry can have a noticeable impact on a large number of them.
New opportunities for quality leisure time will increase the attractiveness of the Olomouc Region – and increase interest and motivation to study technical fields in the case of the Fort Science educational centre.	Underestimation of the development of basic technical infrastructure, which will then fail to meet future demands (Internet connection, power grid, etc.).
	Lower attractiveness of the region and increasing mobility may not only cause a lack of new top professionals, but also the departure of existing ones (although in small numbers, cumulatively this is a significant problem in the long term) – conditions for working in Brno and Ostrava will continue to be much more favourable and there will be a continuing exodus of employees and students from the region.
Taking advantage of opportunities to finance projects from European funds higher than average in the CR.	The number of graduates will continue to decline due to demographic development; there is already a visible decline in willingness to work and continue personal professional development among existing graduates; it is often difficult to find a suitable worker.
Making public cash flows more transparent.	Low level of entrepreneurship and interest in entrepreneurship in pupils and students.
Making entrepreneurship and starting up a business simpler.	Insufficient share of applied research in the region's R&D process.
Reform of science and research funding – strengthening the support for quality over quantity.	No technical college available in the region.

OPPORTUNITIES	THREATS
Despite the lack of a technically oriented university, accredited technically oriented fields of study are being established under the Faculty of Science of UP Olomouc – the first being Geology in Petroleum Engineering – and cooperation with VŠB-TUO (newly established Bachelor's study programme Industrial Design) and other technical universities outside the Olomouc Region, for instance, in the preparation of joint study programmes.	Uncoordinated activities of institutions/stakeholders in the region aimed at promoting entrepreneurship, technology transfers, and popularisation of scientific trends and results. May lead to the fragmentation of themes and dispersion in reaching target groups.
Intensified internationalisation using existing and new international partnerships actively developed by the actors in the region.	



Table 4 – SWOT analysis of the Olomouc Region implemented by ORIC
(source: ORIC)



6.1. Vision

In the medium-term perspective, the objectives and the overall direction of the Regional RIS3 Strategy should fulfil the specified visions with which the actors of the innovation environment should, ideally, be identified. The RIS3 Vision is for the Olomouc Region to be perceived as:

- > an attractive region for enterprising and creative inhabitants
- > a healthy and safe environment for sustainable living, research, and business;
- > an active and forthcoming innovation ecosystem open to new societal and technological challenges and trends.

6.2. Key Areas for Change

The key areas for change specify horizontal themes (priorities), in which the RIS3 Strategy of the Olomouc Region intends to effect changes or in which the Olomouc Region should make a difference. Within each key area of change, strategic and then specific objectives are defined, including relevant metrics and type activities.

The implementation of activities within the individual key areas of change will strengthen the position and competitiveness in the defined domains of specialisation of the Olomouc Region and thus the main vision of the strategy.

Five key areas for change have been specified within the Regional RIS3 Strategy:

- A. Open and attractive environment for innovative entrepreneurship
- B. Conditions for excellent research, development, and transfer of knowledge and technologies
- C. Development of human potential
- D. Digitalisation as a common instrument
- E. Sustainability as part of the lifecycle

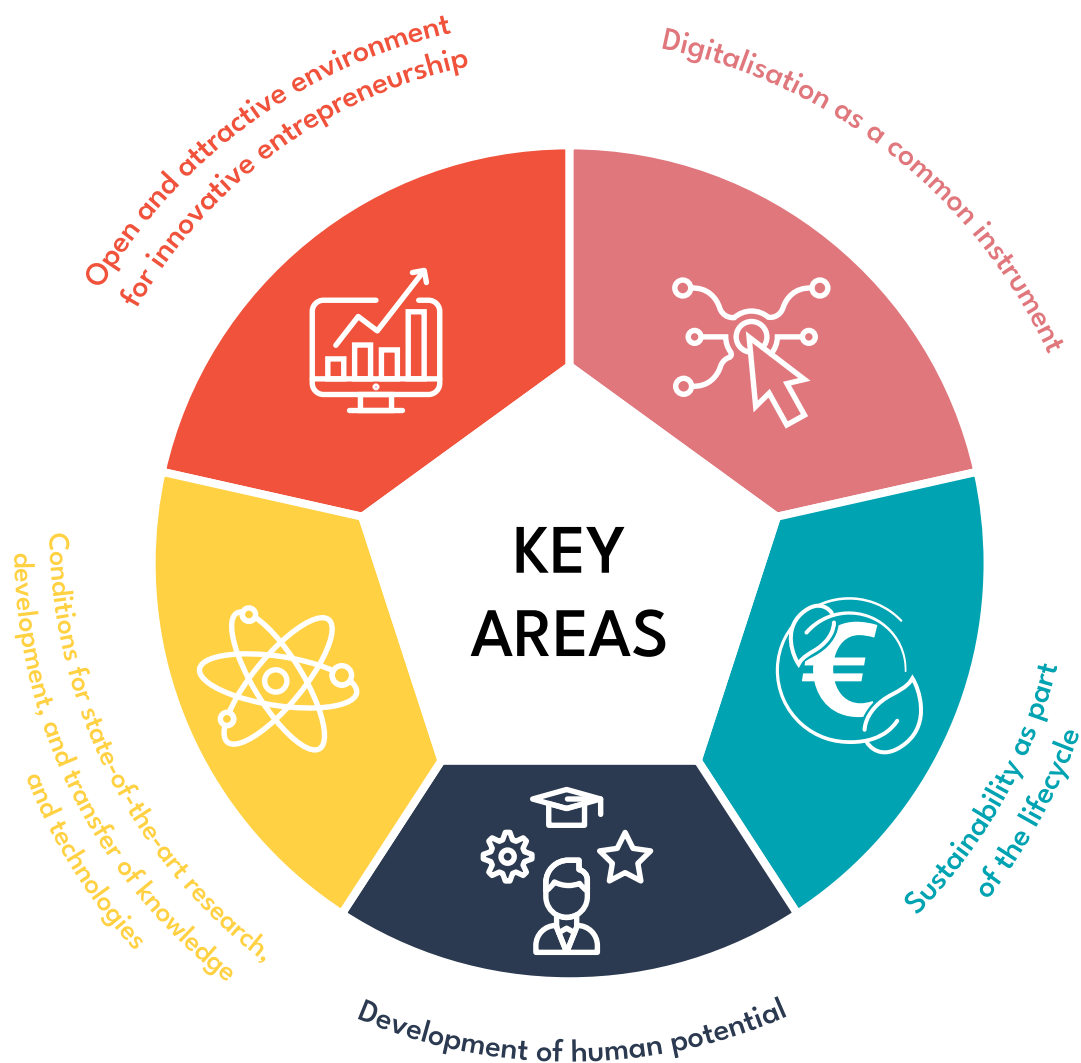


Figure 11 – Graphic representation of the areas for change within the regional RIS3
(source: ORIC)

6.3. Strategic and Specific Objectives

Below is an overview of the strategic and specific objectives, which is further elaborated and supplemented with typical metrics and activities to meet these objectives. The list is not exhaustive in the case of type activities as well as metrics; and it may be modified, prioritised, and completed in the framework of the annual RIS3 Action Plans.






Key areas for change	Strategic objectives	Specific objectives	
 <p>Area A Open and attractive environment for innovative entrepreneurship</p>	<p>Comprehensive support system for innovative companies</p> <p>Attractive regionalised ecosystem for emerging entrepreneurs</p>	<p>Increase in competitiveness of companies based on innovation and interaction of business entities aimed towards greater cooperation</p> <p>Promoting the region as a place where interesting business projects are established, triggering the local start-up scene, allowing its greater interaction with other</p>	<p>Increase in awareness regarding the importance and benefits of CCLs for the innovation of products and services in other industries and support for these forms of cooperation</p> <p>Activation of the emergence and development of regional innovation hubs</p>
 <p>Area B Conditions for top-level research, development, and transfer of knowledge and technologies</p>	<p>Efficient transfer to the application sector</p> <p>Internationally successful projects and partnerships</p>	<p>Increase in the economic use of a wide spectrum of knowledge and technologies in scientific research organisations</p> <p>Increase of regional awareness about international cooperation and R&D activities and the possibilities of engagement of the private sector</p>	<p>Increase in the number of development projects of companies implemented in collaboration with scientific research organisations</p>
 <p>Area C Development of human potential</p>	<p>Motivation to training in the key competences for entrepreneurship, creativity, and initiative</p> <p>Attractive ways of teaching and raising of public awareness for polytechnic education in cooperation with employers</p> <p>Attractive lifelong learning system that reacts to societal trends</p>	<p>Support for projects and activities focusing on the development of entrepreneurship, creativity, and initiative implemented at primary and secondary schools</p> <p>Support for experimental technical, scientific, computer clubs at primary and secondary schools organised by regional entities</p> <p>Support for lifelong learning in technological sectors of the future</p>	<p>Initiation of establishment and methodologies of subjects focusing on the development of entrepreneurship, creativity, and initiative at universities</p> <p>Support for establishing and developing shared workshops</p> <p>Support for competence enhancement to allow easier career transfer</p>
 <p>Area D Digitalisation as a common instrument</p>	<p>Efficient and digitised processes</p> <p>Digitised and automated industry ready for the technological challenges of the 21st century</p> <p>Effective supporting ecosystem in eHealth</p>	<p>Raising awareness for the digitalisation of administrative processes</p> <p>Support for the digital transformation of regional industry</p> <p>Raising awareness for telemedicine with emphasis on the potential of scientific and technological resources in the Olomouc Region</p>	<p>Deepening and systemisation of cooperation of the main actors</p>
 <p>Area E Sustainability as part of the lifecycle</p>	<p>Socially and environmentally responsible region</p> <p>Sustainable system of financial support for innovation development</p>	<p>Strengthening of general popularisation of the sustainable development goals and the carbon neutrality commitment with emphasis on implementation in everyday life</p> <p>Enhancing efficient use of public subsidy sources with emphasis on sustainability</p>	<p>Enhancing the perception of mental health of individual as a prerequisite for an effective and productive society with sustainable results</p> <p>Popularisation of the forms of support for innovation from non-public sources</p>



Figure 12 – Graphic representation of the strategic and specific objectives of the Regional RIS3 Strategy OR
(source: ORIC)

Area A	Open and attractive environment for innovative entrepreneurship
	<p>The aim is to support innovative entrepreneurship as much as possible, because companies that can stand out from the crowd and become leaders in their fields are one of the cornerstones of the success of the region as a whole. Primary support should be given to companies trying to move up the value chain, companies that aspire to become end suppliers, are preparing to expand into foreign markets, or come up with their own unique expertise. The benefit will be the growth of jobs occupied by highly skilled workers on the one hand, but also the acceleration of new companies/start-ups on the other. The path to this state leads through an open innovation ecosystem characterised by low barriers of entry and maximum interconnectedness of its actors. All entities enter this open innovation ecosystem voluntarily but with an unspoken commitment to contribute their share to the overall success. These entities are typically companies – from small to large, corporate, the scientific and research sphere, actors operating in the creative industries, the education sector, and last but not least, government authorities. A high level of interaction, a giving-back culture, and purposefulness in all activities should be matter of course. Opportunities for international contacts and comparisons are important – Learning from the global – developing the regional – gaining global application.</p> <p>An important aspect of the above will be the regional dimension of these activities. Described below (Spec. Objective A.2) is the plan for the decentralisation of the innovation infrastructure – primarily aimed at supporting aspiring entrepreneurs across the region – which will also well serve existing companies and entrepreneurs. They can, for instance, visit “matchmaking” events to seek partners, benefit from cooperation with newly emerging actors from the creative sector, or utilise the infrastructure designed to stimulate creative competences represented by planned, sophisticated workshops like FabLab that will be available here.</p>
Str. Objective A.1	Comprehensive support system for innovative companies
	<p>One of the benefits of an open business ecosystem is the possibility to gain consultation support from its actors. However, this consultation is not seen as commercial service, but rather shows the signs of the giving-back culture mentioned above. Coaches are people who are successful and provide consultations in their field of activity; their work reflects long-term experience in the area. Their contribution is clear: assisting a company in resolving a challenge it is not able to resolve on its own, which is frequently true especially of small and medium-sized companies.</p> <p>Another method of increasing the companies' innovation performance are regular workshops on current and burning topics, again using a wide network of cooperating entities or individuals from the private or academic sphere. A mutually supportive ecosystem in practice.</p> <p>Active offer of R&D capacities of colleges and universities as well as scientific centres to companies (marketing promotion, active business development towards companies, etc.).</p> <p>Another form of possible innovation of processes, products, and services of the SMEs is using the outputs offered by the actors from various sectors of cultural and creative industries. The objective of the activities is therefore education and advocating of possible economic gains of such innovations, as well as promotion of the use of particular support tools like creative vouchers and consulting. One of the possible steps can be establishing a creative cluster or a branch of the national Creative Cluster for the Olomouc Region.</p>
Metrics	<ul style="list-style-type: none"> • Number of innovative companies using specialised consulting • Number of companies from the Olomouc Region associated in sectoral clusters • Number of companies linked to R&D workplaces • Number of companies drawing financial aid in the form of vouchers • Number of companies/clusters engaged in international partnerships

Area A	Open and attractive environment for innovative entrepreneurship
Actors of the Olomouc Region	<ul style="list-style-type: none"> public sector, academic sector, private sector
Spec. Objective A 1.1.	Increase of competitiveness of companies based on innovation and interaction of business entities towards greater cooperation
Type activities	<ul style="list-style-type: none"> Innovation events (workshops, conferences, etc.) Consulting with ORIC PLATINN and ORIC DIGI Matchmaking – R&D/companies Vouchers Engagement in international projects
Spec. Objective A 1.2.	Increase in awareness regarding the importance and benefits of CCI for the innovation of products and services in other industries and support for these forms of cooperation
Type activities	<ul style="list-style-type: none"> Workshops (importance of design thinking, product design) Active promotion and consulting provided towards the creative voucher programme Active promotion and marketing of all business support programmes Interconnecting of entities from the innovation ecosystem
Str. Objective A.2	Attractive regionalised ecosystem for emerging entrepreneurs
	<p>Coherence and utilisation of the methods for the support of innovative entrepreneurship. The aforementioned innovation ecosystem will, of course, provide space to emerging entrepreneurs who have ideas they trust, but lack many competences. The stepping stone for them will be the “lean canvas”, thanks to which they will understand the wider context of their efforts and the formal requirements for their businesses, allowing them to move from the project stage to the standard business unit stage. The existing innovative business ecosystem will be able to absorb this new entity – both actively, e.g., in a form of mentoring provided by a relevant expert from an established business entity, and passively, in the sense of visibility by other actors who will be able to start cooperation if seen by them as advantageous. In essence, incubated companies will gain access to all types of interaction just like the entities active in the innovation ecosystem, where they will be able to find expert assistance, partners, suppliers/customers, or investors.</p> <p>An important aspect of the above will be the regional dimension of these activities. The plan is to decentralise the services to locations corresponding to the former district seats. There, in the newly established innovation infrastructure, aspiring entrepreneurs will find support for their activities and growth. In this context, entrepreneurial activities may take various forms, from technological start-ups to entities planning to establish economic activities in the area of creative industries.</p>
Metrics	<ul style="list-style-type: none"> Number of operating innovation hubs, coworking establishments and other community or creative centres Number of entities utilising the services of the supporting innovation infrastructures in the Olomouc Region Number of newly established start-ups in the Olomouc Region
Actors of the Olomouc Region	<ul style="list-style-type: none"> Public sector, civil society, private sector
Spec. Objective A 2.1.	Promoting the region as a place where interesting business projects are established, triggering the local start-up scene, allowing its greater interaction with other actors of the innovation ecosystem

Area A	Open and attractive environment for innovative entrepreneurship
Type activities	<ul style="list-style-type: none"> • Active talent scouting and support • Interconnecting the start-ups and investors or interesting business partners • Offers of premises for business incubation • Pre-incubation events aimed at motivating one to start businesses
Spec. Objective A 2.2	Activation of the emergence and development of regional innovation hubs
Type activities	<ul style="list-style-type: none"> • Pre-incubation and incubation activities in the regions, contests, F*ck-up nights, meetings with investors, offer of acceleration services towards innovative companies in the regions • Offer of services and premises for technological incubation • Development of infrastructures like innovation hubs and creative centres

Area B	Conditions for top-level research, development, and transfer of knowledge and technologies
	<p>This area focuses primarily on enhancing the survey, conditions, and processes that influence the use of the results of the current, already identified or future top-level public research in the Olomouc Region. This enhancement will contribute to the development of the transfer of knowledge, technologies, and human potential into innovation and high-tech industry and business.</p> <p>In the area of the transfer of knowledge and technologies, it is necessary to significantly expand and deepen mutual awareness between the R&D entities in the region and the business ecosystem, which comprises the existing companies, start-ups, and emerging business activities. Mutual awareness and sharing are key for further development of connections between R&D and commercial innovation.</p> <p>It is quite challenging for new start-ups and small enterprises to get through the first stage of verification of the commercial usefulness of new technologies coming from the R&D workplaces and to obtain funding for these activities. Therefore, specific steps are welcome that will assist the companies with temporary funding in the initial stages of cooperation with R&D institutions, as well as implementation of technology transfer, start of the product manufacture, and marketing of the R&D results, if needed.</p> <p>The absorption capacity of the local commercial corporate sector in terms of the ability to quickly and widely commercialise the results of research and development is rather limited, and it is therefore necessary to support placement of these results outside the region as well (for instance, to the South Moravian Region, Moravian-Silesian Region, or Zlín Region). To this end, there is a need to increase awareness and coordination and accelerate the exchange with innovation institutions in these regions.</p> <p>Demand for cooperation can also be boosted by expanding the activities of local subsidiaries of foreign or extra-regional companies, acquiring specific types of direct foreign investment, and incubating new companies. At the same time, it is possible to take advantage of extra-regional and foreign contacts of R&D entities and expand their offer of knowledge and technologies in the Olomouc Region.</p> <p>It is essential to actively draw attention to the existence of unique scientific results that not only have economic potential, but also make a major contribution to the promotion of the region as a centre of education and innovation in the broad sense. In addition to technological and medicinal innovations, it is also necessary to perceive the benefits of the social sciences and humanities with unique extra-regional significance. These outputs are not easy to monetise, but they contribute to innovation and an increase of quality in various areas of society and can also enhance the region's attractiveness. Their typical problem is the fact that after finishing an applied research project, they fail to put the outputs into practice and spread them out onto the extra-regional level.</p>


Area B	Conditions for top-level research, development, and transfer of knowledge and technologies
Str. Objective B 1	Efficient transfer to the application sector
	<p>Straightforward, traditional connections are apparent across the domains of specialisation. Yet, many companies view establishing cooperation with R&D entities as difficult, and it will therefore be necessary to offer assistance to trigger and successfully implement cooperation. On the other hand, individual teams in the R&D entities can perceive the interest, engagement, and impact of the companies, start-ups, and spin-offs back to the top-level research as negligent.</p> <p>Flexibility and speed of the transfer of results from the academic sector is heavily influenced by high economic and process risks inherent to any commercialisation of scientific findings or inventions. The establishment of spin-off companies can be one of the solutions, bringing benefits and possibilities aimed at lifting feared risks from the shoulders of scientific sites. Also, the establishment of start-ups by young researchers after finishing their PhD studies or gaining post-PhD experience can be seen as a broad alternative path to independent development, even supported by TACR and the individual ministries.</p> <p>At the same time, it is necessary to support the increase of transfer of people with necessary skills between the R&D entities, start-ups, and companies in the Olomouc Region, as well as in neighbouring regions, due to intrinsic limitations. It is essential in this area to increase coordination with other key regional partners (such as science and technology parks).</p> <p>The interconnectedness of the manufacturing industry with state-of-the-art processes and technologies also requires new experts, whose knowledge goes beyond the scope of several sectors. Some scientific fields have already started to actively react to this need by establishing interdisciplinary studies, but mostly by expanding the spectrum of interconnected research directions. This trend is unstoppable, even though it reflects current market needs with a considerable delay. In this regard, it is also necessary to increase awareness within the region, as well as in neighbouring regions and in the CR as a whole.</p> <p>The activities implemented are directed towards increasing the extent and intensity of cooperation, towards the transfer of knowledge, people and technologies between the R&D sector and companies, and towards motivating companies and researchers to cooperate and increase permeability between these still separate worlds.</p>
Metrics	<ul style="list-style-type: none"> • Number of newly acquired national and international projects with application overreach • Number of newly established spin-off companies • Number of applied patents
Actors of the Olomouc Region	<ul style="list-style-type: none"> • Academic sector, private sector, public sector
Spec. Objective B 1.1.	Increase in the economic use of a wide spectrum of knowledge and technologies in scientific research organisations

Area B	Conditions for top-level research, development, and transfer of knowledge and technologies
Type activities	<ul style="list-style-type: none"> • Training of young academics in the area of commercialisation of results of R&D or other creative disciplines • Thematic organised meetings of young scientists and entrepreneurs with established companies in the individual areas (medicine, biotechnologies, genetics, optics, social services, creative disciplines, etc.) • Internships in start-ups, spin-offs, and companies as part of joint research projects, summer schools with the managers of start-ups and spin-offs • Live database clearly depicting complete scientific activities in the region with an application overreach or future potential across all sectors • Creating conditions for the settlement of investors and spin-offs and their cooperation with other actors in the region including the preparation of locations and marketing support
Spec. Objective B 1.2.	Increase in the number of development projects of companies implemented in collaboration with scientific research organisations
Type activities	<ul style="list-style-type: none"> • Popularisation workshops – clash of market needs with the new possibilities of science
Str. Objective B.2	Internationally successful projects and partnerships
	The shortening of distances and the blurring of regional, national, and continental boundaries is particularly pronounced in this area, and the impact of apparent isolation can have irreversible consequences. The outreach of activities outside the region is crucial in the area of research and development. Inspiration across regions and countries, sharing experiences, successes, and failures, perspectives and dead ends, all this can greatly accelerate the development and implementation of new technologies and innovations.
Metrics	<ul style="list-style-type: none"> • Number of newly acquired top-level international scientific projects with future potential for the transfer of knowledge and technologies • Number of applied international patents • Number of foreign scientists working in scientific research organisations in the Olomouc Region
Actors of the Olomouc Region	<ul style="list-style-type: none"> • Academic sector, private sector, public sector
Spec. Objective B 2.1.	Increase of regional awareness about international cooperation and R&D activities and the possibilities of engagement of the private sector
Type activities	<ul style="list-style-type: none"> • Regular international newsletter • Promotion of companies and scientific groups at international missions and trade fairs • Shared trade-fair exhibitions and trade missions • Active scouting of direct foreign investments in the region • Engagement of entities from the Olomouc Region in interregional European cooperation

Area C	Development of human potential
	<p>The prosperity of our region depends on us, on people. On our courage, creativity, openness, the quality of our knowledge and skills, and our ability to establish ourselves within the existing ecosystem. The development and introduction of new technologies alone is not enough. We must approach self-education and personal development with the same commitment and activity. We place great emphasis on individuals, but employers and educational institutions themselves have an important role to play.</p> <p>Supporting competences for entrepreneurship, initiative, and creativity is crucial and includes competences and skills that need to be developed. These include critical thinking, seeing opportunities, initiative and proactivity, creative thinking and creativity, strategic thinking and planning, leadership and teamwork, self-fulfilment and self-assessment with an emphasis on developing strengths, flexibility, perseverance and a sense of responsibility, risk-taking, and financial and economic literacy.</p> <p>The above abilities and skills gain significance and become part of general education in all areas of a developed ecosystem, and it is necessary to work on them continuously. Technological directions and new trends are developing at a speed that is higher than the rate of adaptation of the educational system. The educational system must therefore prepare young people for the world of the future in 20–30 years' time, for future challenges that will require understanding the new paradigms.</p> <p>University students and doctoral graduates do not have enough practical knowledge to stand on their own two feet, nor do they know how to prepare, obtain, and resolve projects of TACR or applied projects of the individual ministries, nor where to continue studies or research work abroad in order to deepen their application potential. The importance of a quality doctoral educational system and understanding its irreplaceable significance in the commercial sector is vital for further development of the Olomouc Region.</p> <p>The secondary and Bachelor educational system is not adjusted to the needs of regional employers, albeit steps to improve this have been taken in the last few years. There is a lack of information about new start-ups and spin-offs in this age group as well as a lack of international cooperation in vocational subjects.</p> <p>The popularisation of technical training, craft trades, and sciences is sufficient, but what is lacking is the promotion of attractive stories of young successful scientists, inventors, innovators, and entrepreneurs in the classroom and beyond. There is often a lack of up-to-date teaching content aimed at the acquisition of relevant contemporary competences in the area of technical and science education. At the same time, the challenge is to popularise employment in the creative sector, a growing type of clean economy with high added value.</p>
Str. Objective C 1	Motivation to training in the key competences for entrepreneurship, creativity, and initiative
	The visible aspect of a long-standing tradition in the mentality, values, and behavioural patterns that do not create a social setting promoting entrepreneurial spirit and innovation and positive attitude to work as the meaning of life is one that influences the composition of a range of subjects of human resources.
Metrics	<ul style="list-style-type: none"> • Number of projects aimed at the promotion of entrepreneurship, creativity, and initiative implemented at schools in the Olomouc Region • Number of student/mock projects with business potential
Actors of the Olomouc Region	<ul style="list-style-type: none"> • Academic sector, private sector, public sector, civil society


Area C	Development of human potential
Spec. Objective C 1.1.	Support for projects and activities focusing on the development of entrepreneurship, creativity, and initiative implemented at primary and secondary schools
Type activities	<ul style="list-style-type: none"> • Contests and inspirational workshops to develop entrepreneurship • Fictitious company projects • Start-up and F*ck-up nights for students • Entrepreneurship academies • Methodological support for teachers and career advisors
Spec. Objective C 1.2	Initiation of establishment and methodologies of subjects focusing on the development of entrepreneurship, creativity, and initiative at universities
Type activities	<ul style="list-style-type: none"> • Methodological support for teachers • Specialised subjects and workshops aimed at supporting entrepreneurship • Start-up and F*ck-up nights for students • Contests, summer schools, business camps, etc.
Str. Objective C 2	Attractive ways of teaching and raising of public awareness for polytechnic education in cooperation with employers
	<p>Polytechnic and interdisciplinary education, whether technical, sciences, IT, or environmental, is and will be one of the priorities on the domestic and global scales. A great benefit can be seen in promoting polytechnic interdisciplinary activities (workshops, targeted meetings) associating key directions within the region as well as across neighbouring regions (such as chemistry – water management – ecology, genetics – agriculture – food industry) and forming strong ties to the domains of specialisation.</p> <p>Involvement of strong regional companies in polytechnic education in the region (equipment of school workshops, professional lectures) and continuous awareness of new small enterprises, start-ups and spin-offs should not be underestimated.</p> <p>Students and teachers at primary and secondary schools currently lack sufficient information about modern, small, and emerging companies in the region and about the possibilities of post-graduation employability in these entities with potentially high added value. They often have no possibility of international comparison. At the same time, insufficient dialogue and linking of teachers with employers (e.g., during the students' practical training) may be one of the reasons why students leave the areas they studied and look for opportunities elsewhere.</p>
Metrics	<ul style="list-style-type: none"> • Number of school circles and similar activities as part of informal education focusing on support for polytechnics • Number of implemented internships of primary and secondary school students in companies • Number of events, such as job fairs, in the Olomouc Region
Actors of the Olomouc Region	<ul style="list-style-type: none"> • Academic sector, private sector, public sector, civil society
Spec. Objective C2.1.	Support for experimental technical, scientific, computer clubs at primary and secondary schools organised by regional entities
Type activities	<ul style="list-style-type: none"> • Experimental school clubs supported by the Olomouc Region and the employers • Polytechnic and interdisciplinary workshops with application potential • Co-organising the Academia Film Olomouc festival and film divisions promoting innovation in the Olomouc Region • Motivational seminars for primary and secondary school students and their parents led by top experts from the individual areas of Industry 4.0 with practical demonstration of the potential for professional careers • Material support for school clubs and contests

Area C	Development of human potential
Spec. Objective C2.2.	Support for establishing and developing shared workshops
Type activities	<ul style="list-style-type: none"> • Establishing new shared workshops • Creating methodologies for schools and companies aimed at making the existing workshops available to the general public • Sharing experience with similar projects in other regions and abroad • Material support for shared workshops • Awareness and educational events organised in the shared workshops
Str. Objective C.3	Attractive lifelong learning system that reacts to societal trends
	Acceptation of the lifelong learning trend for the future of the whole ecosystem. A functioning, flexible, and interconnected system of personal and corporate training is the fundamental prerequisite of a society that is economically stable and sustainable over the long-term.
Metrics	<ul style="list-style-type: none"> • Number of initiatives and projects to support lifelong learning
Actors of the Olomouc Region	<ul style="list-style-type: none"> • Academic sector, private sector, public sector, civil society
Spec. Objective C3.1.	Support for lifelong learning in technological sectors of the future
Type activities	<ul style="list-style-type: none"> • Analysis of the lifelong learning market in the Olomouc Region • Educational and awareness programmes translating the trends in research, technologies, business, and personal development to all layers of the society • Thematically oriented round tables • Lifelong learning courses • Targeted campaigns making lifelong learning more attractive • Managerial/leadership courses reacting to current trends
Spec. Objective C3.2.	Support for competence enhancement to allow easier career transfer
Type activities	<ul style="list-style-type: none"> • Support workshops in career development • Organised monitoring visits of small business entities

Area D	Digitalisation as a common instrument
	<p>The area of digitalisation, which cannot be ignored or underestimated, has undergone a fundamental transformation that is becoming increasingly important. It has permeated the daily activities of all of us, and the faster we adapt and accept the change, the better we can kick-start the new technological directions and innovation opportunities inherent in digitalisation.</p> <p>Adaptation starts with optimising the daily activities of both everyday and professional life. It blends into the hybrid forms of work and teaching, into digital culture and hygiene, and ends with the highly technological automation of production and the robotisation of processes. New opportunities bring new threats of security risks – cyber-attacks – which must be anticipated, fought, and prevented. At different levels, we may face different needs and initial states of technological and knowledge capabilities of teams, face different understandings of the importance of digital security and different motivations of the actors for the study.</p> <p>Continuous changes in world affairs show us the extent of potential and space we still have in technological progress and how poorly prepared we are to utilise it in our everyday lives. The proper use and setting of Industry 4.0 methods and tools leads to reduction of negative impacts related to transforming industry and facilitating the implementation of sustainable development.</p>
Str. Objective D.1.	Efficient and digitised processes
	<p>In general terms, digitalisation is viewed as a logical effort to optimise and automate processes that hitherto were manual and contribute to efficient development and growth of companies.</p> <p>In the first phase, emphasis is placed on analysing administrative activities that can be automated and simplified by generally available digital tools, thus eliminating their error rate.</p> <p>The basic and most important prerequisite for the successful change in work, the digital shift in administrative activities, and implementation of new work tools is confidence of the company owners that this investment is efficient in the long run. Equally important is also proper motivation of work teams to accept the change and update the skills needed.</p>
Metrics	<ul style="list-style-type: none"> • Number of implemented projects demonstrating the benefits of digitalisation of processes
Actors of the Olomouc Region	<ul style="list-style-type: none"> • Public sector, private sector, civil society
Spec. Objective D 1.1.	Raising awareness for the digitalisation of administrative processes
Type activities	<ul style="list-style-type: none"> • Professional-popular workshops for the SMEs (best practice, drawbacks, long-term advantages of transformation) • Public administration activities to support the demand for the digitalisation of processes (public administration as the pilot customer) • Expert consulting • Analysis of digital maturity

Area D	Digitalisation as a common instrument
Str. Objective D.2	Digitised and automated industry ready for the technological challenges of the 21st century
	<p>The current trend of digitalisation as part of Industry 4.0 brings radical automation of production with the closely related labour market changes. As yet normal jobs will cease to exist, and new ones will emerge which will require much higher qualifications of the employees, creativity, openness, and continuous learning. Production is expanded by cyber-physical technologies and new systems that take on simple and repetitive activities and make way for human creativity and entrepreneurship. Technologies interoperable to the Internet of Things, services, and people are on the rise. The ability to collect, visualise, and interpret relevant data acquires immense significance.</p> <p>Primary effort in this area is supporting companies in the Olomouc Region when defining the processes suitable for digitalisation, using own reserves, and setting up the rules of operation and control of new automation.</p> <p>To a large extent, these tasks can be performed using computers and other digitalisation tools with minimal or even no human involvement.</p>
Metrics	<ul style="list-style-type: none"> • Number of companies utilising specialised consulting
Actors of the Olomouc Region	<ul style="list-style-type: none"> • Public sector, private sector, civil society
Spec. Objective D 2.1.	Public sector, private sector, civil society
Type activities	<ul style="list-style-type: none"> • ORIC DiGi programme – specialised consulting • Analysis of digital maturity • Thematically oriented round tables aimed at supporting and utilising the potential for implementation of digital technologies • Digitalisation projects in the domains of specialisation in cooperation with sectoral clusters
Str. Objective D.3	Effective supporting ecosystem in eHealth
	<p>Development of digital technologies is significantly influencing medicine, forming a new medical service – telemedicine, i.e., remote provision of medical services. Increasingly common clinical applications of information and communication technologies are gaining importance, opening the possibility for wider availability of medical services in distant municipalities. The activities of major actors in the Olomouc Region (DIH focusing on eHealth, National eHealth Centre, Czech-Israeli Innovations and Partnership Centre, University Hospital Olomouc) establish great potential for the development and cooperation in this emerging field of medicine.</p>
Metrics	<ul style="list-style-type: none"> • Number of consultations provided to SMEs in the area of telemedicine • Number of popularisation activities thematically focusing on eHealth • Number of start-ups thematically focusing on eHealth
Actors of the Olomouc Region	<ul style="list-style-type: none"> • Academic sector, public sector, private sector
Spec. Objective D 3.1.	Raising awareness for telemedicine with emphasis on the potential of scientific and technological resources in the Olomouc Region
Type activities	<ul style="list-style-type: none"> • Analysis of the state of the market in the Olomouc Region, functional database of live companies • Mapping of organised activities in order to inform the inhabitants, patients, and companies about new services and trends in the field • Awareness campaigns • Laboratory simulations

Area D	Digitalisation as a common instrument
Spec. Objective D 3.2.	Deepening and systemisation of cooperation of the main actors
Type activities	<ul style="list-style-type: none"> • Round tables with the main regional actors in this area (DIH focusing on eHealth, National eHealth Centre, Czech-Israeli Innovations and Partnership Centre, University Hospital Olomouc) • Systematic support for the DIGI2Health digital innovation hub and development of its activities and services

Area E	Sustainability as part of the lifecycle
	<p>Climate change, global warming, and deterioration of the environment pose an existential threat to the Czech Republic, Europe, and the whole world. To overcome these challenges and start the general green transition, the UN Summit adopted in 2015 the agenda of Sustainable Development Goals to be achieved by 2030. The current document – the European Green Deal – undertakes to reach carbon neutrality by 2050. The EU plan for the green transition and the Green Deal includes the Fit for 55 package that reflects the EU's commitment to cutting emissions by at least 55% by 2030. International endeavours in this area are supported by regional activities. The Olomouc Region is finalising the Adaptation Strategy of the Olomouc Region to the Effects of Climate Change, which will be finished by 30 November 2022. The document identifies vulnerability of the region to the effects of climate change, while setting a unified approach when defining the individual measures to be implemented in the region in the long term.</p> <p>Global warming, caused largely by CO₂ from the combustion of coal, oil, and natural gas, can only be stopped by transition to emission-free sources, alternative fuels, and innovative solutions and technologies. It can be expected that investment into new technologies affecting decarbonisation will grow and so will the need of financial involvement of the private sector. Likewise, the importance of transfer of scientific results into the application sphere as well as activities and awareness of individuals will build up.</p> <p>Sustainability and sustainable development have become key prerequisites for long-term existence, and must permeate each project and activity we pursue.</p>

Area E	Sustainability as part of the lifecycle
Str. Objective E 1	Socially and environmentally responsible region
	<p>A healthy market environment, ingenuity, creativity, entrepreneurial activity, and a fulfilling life are not possible without developing environmental, behavioural, social, and economic sustainability, while recognising its key role.</p> <p>At this level, great importance is given to the individual, who is part of the ecosystem and contributes to the sustainable development of the region through his or her behaviour, desires, and needs. As a consumer and active participant, he or she indirectly influences the strategic and investment decisions of companies and institutions. The journey to carbon neutrality and the search for tools and common practices to achieve it will be of great importance in the coming period.</p> <p>In the context of a socially responsible region, continuous care of mental and physical health is gaining importance as a prevention of civilisation diseases, burnout syndrome, mental fatigue, and the onset of trauma in society. Emphasis is placed on personal education on the topics of work and leisure time organisation, physical regime optimisation, and regular daily relaxation.</p> <p>The quality of the environment and the nature of the public space is directly linked to the attractiveness of the region and is an important factor in the process of labour mobility and elimination of brain-drain, and plays a role in the decision-making of digital nomads. Promoting the importance of a quality environment is therefore a legitimate part of nurturing the business ecosystem.</p>
Metrics	<ul style="list-style-type: none"> • Number of activities in accordance with the document <i>Adaptation Strategy of the Olomouc Region to the Effects of Climate Change</i> • Number of implemented activities focusing on sustainable development and decarbonisation
Actors of the Olomouc Region	<ul style="list-style-type: none"> • Public sector, private sector, academic sector, civil society
Spec. Objective E 1.1.	Strengthening of general popularisation of the sustainable development goals and the carbon neutrality commitment with emphasis on implementation in everyday life
Type activities	<ul style="list-style-type: none"> • Popularisation of the key parts of the Fit for 55 package (setting the support for renewable energy sources, energy efficiency, and conditions for the gas industry decarbonisation, energy performance certificates for buildings) • Concentration of the related popularisation and educational activities of the individual actors in the region • Promotion of state-of-the-art methods for the care of living space (such as the prevention of visual and sound smog, creation of conditions for a healthy lifestyle)
Spec. Objective E 1.2.	Enhancing the perception of mental health of individual as a prerequisite for an effective and productive society with sustainable results
Type activities	<ul style="list-style-type: none"> • Explaining the topic to the employers and employees in the presence of experts (psychologists, personal coaches, sociologists, psychiatrists, kinanthropologists, ergoarchitects, designers) • Preventive interactive workshops

Area E	Sustainability as part of the lifecycle
Str. Objective E 2	Sustainable system of financial support for innovation development
	<p>Sustainable funding and support in the area of R&D+I is a topic which should not be overlooked. Motivational steps for the involvement of banks and private investors are growing stronger on both the European and national level. The main objective is to enhance long-term engagement and increase the share of non-public sources.</p> <p>The easiest way for the funding of R&D+I is using one's own sources, i.e., profit and tax deductions. Profit is advantageous as it is a less risky source of funding; its disadvantage can be considerable instability and the fact that it is a more expensive type of funding.</p> <p>Tax deductions for the support of R&D+I are a legislative area with potential for wider use.</p> <p>Another possibility is engaging external investors, natural or legal persons, who want to support interesting projects. This is private capital of a risky nature. The Public-Private Partnership principle (PPP projects) is another possibility of ensuring smooth transition to private funding. This model is rather uncommon in the CR.</p>
Metrics	<ul style="list-style-type: none"> • Number of successful links between investors and emerging entrepreneurs • Number of public projects co-financed from private sources
Actors of the Olomouc Region	<ul style="list-style-type: none"> • Public sector, private sector, academic sector
Spec. Objective E.2.1.	Enhancing efficient use of public subsidy sources with emphasis on sustainability
Type activities	<ul style="list-style-type: none"> • Round tables and awareness campaigns focusing on funding from public and other sources incl. private – preparation for the period after financing from the EU • Interconnecting the corporate sphere and the cultural/social sector with the specific objective to cultivate the area of CSR
Spec. Objective E.2.2.	Popularisation of the forms of support for innovation from non-public sources
Type activities	<ul style="list-style-type: none"> • Professional workshops on the topic of indirect funding of R&D+I from tax deductions • "Matchmaking" – investors / emerging entrepreneurs



Table 5 – Strategic and specific objectives
(source: ORIC)



7 | **Implementation**

The Regional RIS3 Strategy, is for the most part, implemented by the RIS3 Team comprising the representatives of the Olomouc Region Innovation Centre and the Olomouc Regional Authority. The team is managed by the Regional RIS3 Manager. The opportunities are assessed through the EDP and formally within the structure of the Regional Innovation Council of the Olomouc Region (RICOR) with its ad hoc thematic Regional Innovation Platforms (RIP). The objectives and metrics of the Regional RIS3 Strategy are monitored and evaluated using the Annual Action Plans.

The processes and structures for the implementation of the OR's RIS3 Strategy are set to efficiently react to significant changes in the external conditions and the innovation environment in the region. Fulfilment of the objectives is based on the functioning partnerships of the individual stakeholders, as well as efficient communication and bilateral sharing of relevant information. Financial support in the form of the Smart Accelerator projects is an essential part of the process.

Specific objectives are then pursued via the RIS3 Action Plan, which is updated on an annual basis and contains specific activities that are consistent with the type activities in this document. Regular monitoring and evaluation of the Action Plans is a one of the tools that clearly and continuously helps achieve the RIS3 Strategy objectives in the individual key areas for change.

7.1. EDP v Olomouckém kraji

The Entrepreneurial Discovery Process (EDP) is a concept used in business theories describing the process of constant search, identification, and assessment of business opportunities. In general, the EDP's objective is prioritisation of investment.

The EDP is not a one-off event, but rather a continuous process. This systematic nature is essential with respect to the dynamic development of the world of technology and the resulting ever-new challenges and opportunities for research, development, and innovation.

Within the national innovation policy, this tool identifies the domains of specialisation of the National Research and Innovation Strategy for Smart Specialisation (RIS3 Strategy). In this regard, the EDP is viewed as a process based on an open, transparent, and structured discussion of various actors of the innovation system. Said actors comprise, in particular, representatives of public administration, the academic sector, and the commercial sector. One of the priorities focuses primarily on intensifying the activities of all elements of the RIS3 implementation in the Olomouc Region. The role of the RIS3 executive unit in the Olomouc Region is played by the Olomouc Region Innovation Centre.

The RIS3 Strategy of the Olomouc Region is implemented through the Annual Action Plans, which consist of specific projects and activities with defined bearers accountable for the performance of the defined indicators. Metrics defined for the individual strategic objectives will be developed into more specific indicators supported by data, on which the Action Plans will be based. Data collected also serve to prioritise activities and projects within the Action

Plans for the individual years. Fundamental in this regard is the focus on strengthening the coordination and cooperation of the key players in the “quadruple helix” (i.e., the business, academic, public, and civil sectors). The objective is to ensure better coordination of activities of the actors and partnerships active in the region, their engagement in the creation of the Action Plans, and subsequent removal of duplicate activities with efforts to ensure either their sharing, or complementarity. In addition to the joint R&D+I activities as the most valuable result of cooperation, it is also necessary to reinforce joint marketing activities and presentation of the region’s R&D+I profile externally, whether in the form of jointly organised events, publicity materials, or promotion of achievements.

7.2. Monitoring and Evaluation of the RIS3 Strategy of the Olomouc Region

In general, monitoring of the RIS3 Strategy focuses on tracking the development relating to interventions within the specific priority areas introduced in the RIS3 Strategy. The monitoring mechanism records the corresponding expected changes through suitably selected indicators.

On the regional level, the following three key functions of monitoring are defined:

1. Collection of information and their disclosure to the decision-makers;
2. Elucidation of the purpose and function of the strategy and its comprehensibility for the general public;
3. Support for constructive engagement of the stakeholders through transparent communication.

The new structure of horizontal key areas for change and the extension of the domains of specialisation required streamlining of the monitoring process. The Ministry of Industry and Trade (MIT) performs the key activity, which focuses on strengthening the information and data sources to make the necessary analytical works more efficient and to increase the quality of monitoring, specifically by developing the data subsystems and aggregating the disintegrated statistical data systems under the new web and communication portal of the National RIS3 Strategy. Regional RIS2 Teams have been granted access to the new portal.

The implementation of the RIS3 Strategy monitoring is conditional upon the cooperation of all actors and based on the setting of the monitoring areas:

1. The reference period has been set to 12 months;
2. Monitoring of expenditures (sources, structure);
3. Setting of the monitoring set (monitoring of values on the level of the domains of specialisation, on the level of strategic objectives);
4. Monitoring of the indicator values.

Information is collected and transferred to the national level on a six-month basis via semi-annual and annual reports on the implementation of the Regional RIS3 Strategy, submitted to the National RIS3 Manager (MIT).

In relation to the RIS3 Strategy, evaluation means continuous monitoring and assessment of progress in implementing the strategy and fulfilling the objectives pursued. The global objective of the evaluation is contributing to the efficient targeting of the interventions in areas with a high potential for change, with subsequent evaluation of whether the effects of intervention are sufficient to trigger the expected change.

Evaluation activities will focus on assessing quantitative data from the monitoring, as well as on collecting and assessing qualitative data from field surveys. Interpretation of data and information acquired will serve as a basis for formulating the conclusions and recommendations to improve implementation and the overall strategic setting of the Regional RIS3 Strategy.

7.3. Regional Innovation Council of the Olomouc Region and Regional Innovation Platforms

The Regional Innovation Council of the Olomouc Region (RICOR) is the professional coordination and initiation body for research, development, and innovation established by the Olomouc Regional Council for the purpose of coordinating the implementation of the RIS3 Strategy of the Olomouc Region.

RICOR was established in 2014 during the creation of the first version of the RIS3 Strategy of the Olomouc Region. In December 2019, its activities were updated by approving RICOR's status and changing the name and staffing of the RICOR.

RICOR's activities are ensured as part of implementation of the Smart Accelerator projects based on the partnership agreement concluded with the project partner, the interest grouping of legal entities Olomouc Region Innovation Centre (ORIC), in cooperation with the Olomouc Region as the project subsidy beneficiary. RICOR's Secretary is the Regional RIS3 Manager who operates within the ORIC. The activities of the RICOR must therefore be perceived as part of implementation of the RIS3 Strategy of the Olomouc Region in the Olomouc Region, which is the basic mission of the Smart Accelerator projects aimed at developing the innovation environment in the region based on the RIS3 Strategy of the Olomouc Region.

RICOR's structure follows the principle of the "triple helix"; i.e., it comprises representatives of universities and research organisations (academic sector), entrepreneurs/companies (application sector), and public administration.

Two expert platforms, work groups of the Regional Innovation Council of the Olomouc Region, were launched in October 2020. At present, two Regional Innovation Platforms (RIPs) operate, one focusing on Life Sciences, the other on Industry 4.0. The platforms follow the two-pronged principle – they provide expert background for RICOR as work groups developing specific topics discussed by RICOR, but it is also expected that they will submit their own suggestions and proposals for RICOR's work and should contribute to the overall development of the innovation ecosystem in the Olomouc Region. Members of the platforms include representatives of local companies that utilise scientific knowledge

when implementing innovative solutions in development and production, as well as representatives of the scientific research sector, which should broach new topics based on its activities and projects.

Source: www.ris3ok.cz



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Attachment 1 – Detailed Research Study into the Development Potential of the Domains of Specialisation

Attachment 2 – List of CZ-NACE codes assigned to the individual domains of specialisation