ECOS4IN SWOT ANALYSIS FOR WEST TRANDANUBIA, HUNGARY

Deliverable D.T2.2.1

Version 1
04/2020

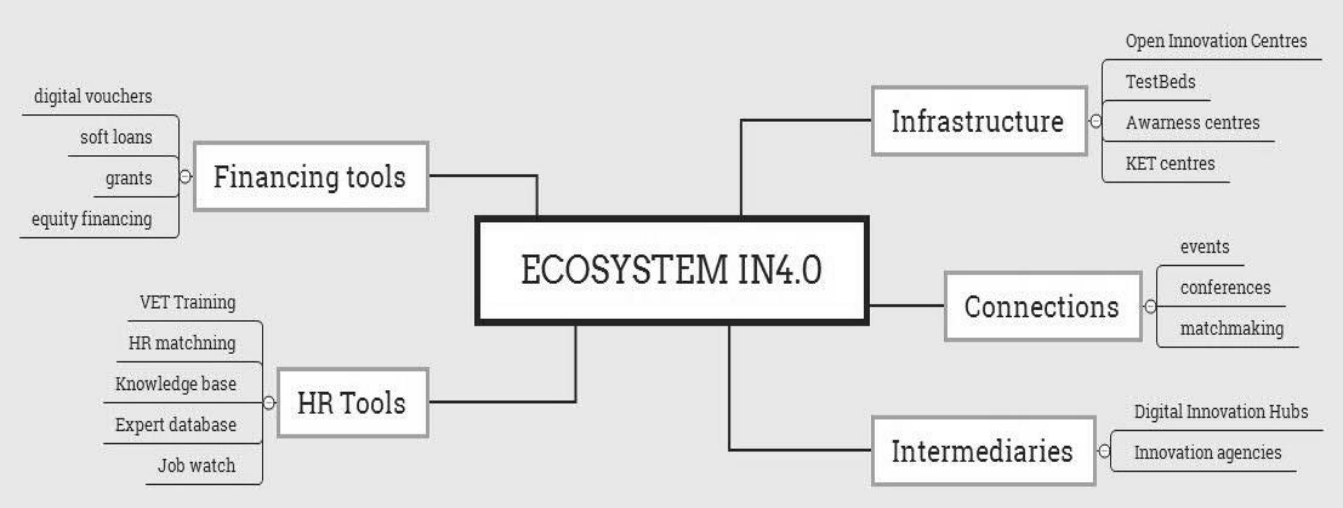
1. Reason

Each partner region will perform SWOT analysis, Deliverable T 2.2.1., delivery date 04/2020.

Analysis will provide mode detailed information how the partner regions currently handed with Industry 4.0 transformation.

2. SWOT Structure

There is first simple ecosystem model. Deeper description will be available soon.



Please prepare SWOT analysis for each mind map branches, see templates below.

3. Templates

3.1. Infrastructure

Strengths	Weaknesses
Presence of ICT companies Presence of live demo and open days in companies that adopt innovative technologies to encourage imitation processes by other companies (eg "night of modern companies") Existing ecosystem of subjects at different levels (DIH, Competence Centers, Regional Innovation Networks) Visibility (cyber- security equipment, rapid prototyping centres, etc.)	Unfavorable infrastructure Missing or outdated IT IT security Few use of ICT technologies in micro enterprises Lack of shared infrastructures Deep digital gaps in the territories Poor "digital culture" in business and civil society Low level of digitalization of Public Administration services for businesses and civil society
Opportunities	**Threats**
Broadband coverage and free Wi-Fi enhancement Start of open data initiatives Definition of rules, standards and organizational models to encourage the spread and use of the IoT in public and private contexts of the West Transdanubia regional territory Strengthen the infrastructure offer of the West Transdanubian research system and facilitate connections to the networks of European and international research infrastructures Support for the creation and strengthening of public-private laboratories and research infrastructures Priorities – clear focus on branch and specialisation definition	The poor accessibility to research results hinders their application in the production and industrial fields Rapid obsolescence of the instrumental equipment of the research centers

3.2. Connections - networks

Strengths	Weaknesses
Presence of innovative regional networks Relevant players of R&I chain are existing High rate of informal relationships that allow you to take advantage of external knowledge to produce innovation Presence of excellences and leading companies in the mechanical engineering, construction, furniture, agri-food Intensive industry-university collaboration due to the big multinational companies (especially in Győr in automotive industry)	Poor dissemination and difficult attraction of research services for businesses Weak collaboration between businesses and research centers, the activities of the economic actors in the region are less innovation and R&D oriented Low propensity of companies to innovate through collaboration with others Reduced internationalization of innovation and low participation in international funding sources (H2020) There are no established forms or practice of communication between the SMEs and the research institutes (e.g., ordering services, use of infrastructure, etc.) Other types of connections are the different e-portals focused on sharing of production, development or services capacities
Opportunities	**Threats**
The theoretical and practical problems to be solved are so complex that requires the cooperation between the research sphere and industrial companies Establishing partnerships (with universities, other production companies, machine manufacturers, IT solution providers) for joint product development, provision of services, increase of production efficiency Adoption of Open Innovation models Exploitation of complementarities of knowledge and specializations between different clusters at regional, national and interregional level	Excessive bureaucracy for participation in joint research projects. Average age of entrepreneurs is still high, comparative lack of young entrepreneurs Successful start-ups leave the region

Participation in national and international research projects Development and promotion of collaborative triple and quadruple helix models The communication of experts and users should be supported on B2B bases (matchmaking, speed dating) incl. networking with experts of different areas of „core technologies“and different sectors Implementation of Higher Education and Industry Collaboration Centre & Science Park at the campus area of Szechenyi Istvan University in Győr Organizing „Digithons“ (similar as Hackathon) between SMEs and IT-service providers	

3.3. Intermediaries

Strengths	Weaknesses

High level commitment on national governmental level, several running programs so as to support Industry 4.0 implementation There are also policy-level actions and also specific organizations with the aim supporting Industry 4.0 transition The clustering process is developing dynamically in several industries in the region (West Pannon Centre for Automotive Industry and Mechatronic clusters; Professio Metalworking Cluster; Pannon Mechatronics Cluster; Pannon Wood and Furniture Cluster, etc.) All types of intermediaries are represented, including regional innovation agency, regional industry associations; chambers of industry and commerce; NGOs; enterprise agencies; science and technology centres; business parks; business incubators; and technology transfer offices	Activities of the majority of these intermediary institutions are not directly related to the diffusion of Industry 4.0 technologies and their uptake in the region Only 1 digital innovation hub in West Transdanubia (10 in Hungary) Co-operations between regional innovation agencies in field of Industry 4.0 For the time being, the clusters operate only formally and until the end of the state support period, they are not able to survive on their own Lack of knowledge and experiences made difficult of interpretation of Industry 4.0 to the specific industrial situations The funding background of organizations involved in the innovation supply side in the region is uncertain Intermediaries need to be improved in terms of their services
Opportunities	Threats
Greater emphasis on the activities of supporting market utilization, the development of the national/regional innovation organization system in this direction Involve idea owners and inventors in the region in the innovation project channel as soon as possible Giving task and duties to the still operating and experienced innovation agencies Development of strong industrial parks in the region into technology parks, innovation centers into competence centers with a service focus related to excellence and key industries	The distrust of Hungarian business is not conducive to the development of supplier networks

Institutional excellence programmes will continue from 2020 supported by the NRDI Found Deep, practical consultation among companies could be effective Sharing problems and solutions is an effective way to help the target group Enhancement and promotion of solutions and best practices	

3.4. HR tools

Strengths	Weaknesses
Presence of universities with extensive international relations Initiatives by regional universities (Szechenyi University - Industry 4.0 Research and Innovation Center of Excellence, BME – Research Center for Autonomous Road Vehicles, special courses, dual training) High level training for young people Good level of human capital specialized in science and high-tech, and in high manufacturing Significant traditions in the automotive, logistics and food industry industry with a significant technical education and research background Motivated workforce The level of Hungarian wages is competitive for investors by European standards	The readiness of current and future workforce is not well defined and planned at the moment due to lack of knowledge, readiness, planning, coordination and collaboration between different stakeholders Outdated and insufficient number of skilled workers or too general knowledge The number of participants in specialized training in higher education is insufficient Very low level and impractical foreign language skills Digital illiteracy Low availability of training for transversal skills Lack of a sufficient number of up-to-date skilled labor, professional staff and middle management Work efficiency still holds a lot of reserves Lack of expertise Corporate management does not use or communicate the breakdown of strategic goals, action plans and project management tools

	Taxes and contributions on wages are high compared to neighboring countries
Opportunities	Threats
Continuous development of education Stronger involvement of industry in education (development of dual training) Intensive training for workers according to their needs, lifelong learning Teaching practice, right attitude and open mindset Further training of teachers Use digital solutions to increase the efficiency of the existing workforce (automation, even for entire production lines, such as the application of custom mass production methods and tools) Hiring an in-house educated colleague (or independent of the IT solution provider) with strong "domain knowledge" Some old jobs will be replaced by new one. New jobs will be created	Lasting economic crisis Population aging Information fragmented and difficult to find Risk of exclusion of some categories of population (eg elderly, unemployed, foreigners etc.) Difficulty in attracting qualified personnel for micro enterprises / SMEs Industrial physical work is not attractive to young people, so there are few apprentices and few apply to higher education in the technical field Rapid obsolescence of the instrumental equipment of the research centers Brain-drain The Hungarian workforce is not mobile within the country Due to the convergence within the EU, the current cost advantage of the Hungarian labor force compared to Western European countries may disappear in the long run

3.5. Financial tools

Strengths	Weaknesses
Strong government commitment Ministry for Innovation and Technology National technology and intellectual property venture capital programme until 31 December 2023 by NRDI Office	Resource gap in RDI funding Limited number of financial tools There is no regional government and decentralized, developement financial tools

	Financial instruments not always usable by micro enterprises / SMEs Digital vouchers only for fostering intellectual property rights in Hungary Lack of resources for large investments The intensity of venture capital and business angel activity in the region is low
Opportunities	Threats
Finding synergies between funding opportunities and increasing international integration of Hungarian higher education and higher education research Bridging the resource gap between National Sources, Cohesion Policy Instruments and Direct EU funding, other international funds Financial instruments and funding schemes for addressing impact of Industry 4.0 from NRDI Founds by National Research, Development and Innovation Office Financial instruments to support digitization in next programming period Broaden the range of financial instruments (digital voucher, social innovation grants, soft loans) Affordable financial products are available Targeted support for innovative SMEs with high growth potential in product and service development Active participation by banks and credit institutions (dedicated resources, access to credit)	Slow decision making on applications inhibit the enterprises on their planned RDI tasks Competition for RDI funding at national level – small funding for RDI projects in West Transdanubia region Subsidies only for technological catch-up, but not for cultural change and the introduction of cutting-edge technologies

Main sources:

- Specialisation Strategy for West Transdanubia, Pannon Novum Nonprofit Kft., 2013
- National Smart Specialisation Strategy for Hungary, 2014
- Irinyi Plan – The Directions of Innovative Industrial Development in Hungary, 2016
- Regional Innovation Report West Transdanubia (Industry 4.0 and smart systems), 2016, Technopolis group in cooperation with Frauenhofer, ERRIN, UNU-MERIT and Andrea Szalavetz
- InnoBridge Action Plan for West Transdanubia, Pannon Novum Nonprofit Ltd., 2019
- The Questionnaire based Survey Project 2017, MTA SZTAKI, Industry 4.0 National Technology Platform Association, www.i40platform.hu
- The most common characteristics of domestically producing SMEs, after survey of 111 sites, July 2019 IFKA, ipar4.hu
- https://s3platform.jrc.ec.europa.eu/digital-innovation-hubs-tool