Interreg CENTRAL EUROPE
European Union
European Regional Development Fund

4STEPS

# ACTIVITY 2.1

# D.T2.1.2

# LIST OF POSSIBLE ACTIONS DEFINITION ACCORDING TO THE TML INDEX OF THE SMES

List of possible actions

FINAL VERSION

02/2021

DEX Innovation Centre – PP5 – Czech Republic

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| Project Number | CE1492 |
| Project Name | Towards the application of Industry 4.0 in SMEs |
| Project Acronym | 4STEPS |
| Work package | WPT2-From catalogue to action: local implementation of and intervention plan |
| Activity | Activity 2.1.Transnational action Plan |
| Deliverable | Deliverable D.T2.1.2 – List of possible actions definition according to the TML index of the SMEs, 5 per regions |
| WP responsible partner | DEX Innovation Centre |
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| Contributors | All partners |

# 1. Introduction of the 4STEPS project

4STEPS project is addressing the main challenge of Industry 4.0 (I4.0) as a tool towards a new, digital industrial revolution holding the promise of increased flexibility in manufacturing, mass customisation, increased speed, better quality and improved productivity and its development is supporting the RIS3 in the target regions in the different sectors. SMEs in the target regions are lagging behind in the adoption of innovative tools and solutions proposed by I4.0 revolution and need to increase transnational collaboration in facing this challenge.

The main project objective is to support the successful RIS3 implementation applying the I4.0 to all the industrial sectors identified by each region. The innovative elements of 4STEPS will be the methodology applied based on the involvement of all the actors of the quadruple helix, thanks to a bottom up approach.

# 2. List of possible actions

4STEPs project partners need to ensure the involvement of all key quadruple-helix stakeholders into the definition of the Transnational Action Plan, starting from the research and business sector, through society (mainly through A.T2.2) to the decision-makers (primarily through D.T2.1.4).

This deliverable lists 5 actions per each partner, including the pilot actions presented in WP T3 (A.T3.1 Pilot action in Italy; A.T3.2 Pilot action in Poland; A.T3.3 Pilot action in Austria; A.T3.4 Pilot action in the Czech Republic; A.T3.5 Pilot action in Slovenia; A.T3.6 Pilot action in Germany; A.T3.7 Pilot Action in Hungary; I.1 Robotic arms supporting 4STEPS).

Each partner identified other remaining actions starting from the results of the SME analysis, other project's results and deliverables and TML index.

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## 2.1. Emilia Romagna (ITA)

| **Selected instrument / intervention / service (e.g. workshops, matching, training, coaching, improvement groups and business networking) to be implemented by Digital Innovation Hub (DIH) and its max 250 characters summary** | **Key parameters and processes of the service to assure fast and effective application** | **Highest risks / obstacles identified and their mitigation strategy** |
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| Identification of innovation path (for process improvement) to design new services/products using the I4.0 principles through a business innovation Lab giving the chance to test by using simulation tools and methods | KEY PARAMETRES OF SERVICE:<br>• Analysis of SME innovation levels and needs<br>• Processes re-design<br>• Key enabling technologies application<br>• Simulation of process improvement<br><br>KEY PROCESSES:<br>• Creation of the Lab<br>• Assignment of the relevant personnel to be responsible for given specific services<br>• Involvement and selection of SMEs for application<br>• Account management and relationship building with engaged SMEs | RISK 1:<br>• Companies´ distrust towards change (organizational change)<br><br>MITIGATION STRATEGY FOR RISK 1:<br>• a certified methodology for overcoming the resistance to change<br>• sharing of similar issues and the proposal of solutions / opportunities<br>• attention to the opportunities coming from the European and national I4.0 Plan. |
| Development of an innovation model designed on SMEs through a workshop based on an open innovation and creative structured approach interpreting the priorities of the new programming period of the Structural Funds and their application on small sized organizations | KEY PARAMETRES OF SERVICE:<br>• The new guidelines and models of innovation in SMEs in the international context.<br>• The new programming period of the European structural funds and its impacts on the regional entrepreneurial system.<br>• Link between the level of innovation of SMEs in Emilia Romagna and the standards of the Industry 4.0 Plan and the | RISK 1:<br>• Companies' fear to get in touch with tools designed for large companies<br><br>MITIGATION STRATEGY FOR RISK 1:<br>• all the methodologies will be adapted to small organizations needs and characteristics. |

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| | new digital transformation strategy<br><br>KEY PROCESSES:<br>• Creation of the group of experts able to teach and accompany SMEs<br>• Involvement and selection of the SMEs and the DIH professionals for the targeted audience.<br>• Open innovation, design thinking and creative spaces will be used as methods to facilitate the awareness and the definition of possible solutions. | RISK 2:<br>• Companies´ distrust towards change (organizational change)<br><br>MITIGATION STRATEGY FOR RISK 2:<br>• a certified methodology for overcoming the resistance to change<br>• sharing of similar issues and the proposal of solutions / opportunities<br>• attention to the opportunities coming from the European and national I4.0 Plan. |
| Residential (2 days) training for the DIHs managers on innovative financing tools | KEY PARAMETRES OF SERVICE:<br>• Analysis of SMEs' innovation levels and needs<br>• Analysis of internal (DIH managers) skills to propose the most appropriate services to the needs of SMEs<br>• Analysis of the training topics<br>KEY PROCESSES:<br>• identification of the period. Important: this activity cannot be done online!<br>• Creation of the group of experts able to teach and accompany SMEs<br>• Identification of the themes: innovative finance, internationalization, new tools for the access to credit, opportunities for investments, SMEs development through the I4.0 pillars, new programming period 2021-27 of European Structural Funds (research will be done by the strategic partners of CNA Digital Innovation Hub: financial services, business, angels, banks, experts on international markets, CNA | RISK 1:<br>• DIHs managers need to learn a new way of delivering business services and this "new way" can find resistances<br><br>MITIGATION STRATEGY FOR RISK 1 :<br>• Proposal of innovative techniques suitable for the change; setting up of concrete instruments; standardizing of good practices as examples to be followed |

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| | offices for the access to credit)<br>• Creative spaces will be used as methods to facilitate the residential training. | |
| Exchange of good practices | KEY PARAMETRES OF SERVICE:<br>• Concrete results for a group of SMEs through the participation in a visit of exchange of good practices.<br>• Processes re-design proposals following the principles of I4.0 processes (automotive industry).<br>• Key enabling technologies application<br><br>KEY PROCESSES:<br>• Best practices and performances will be observed, described and certified to facilitate their sharing and application.<br>• The exchange of best practices allows entrepreneurs/professionals to see successful organisational methods in action, to compare processes for the performances improving,to transfer and adapt the most effective models to their own companies' situations. | RISK 1:<br>• Companies' distrust towards change and the risk to consider the best practices of other companies as not applicable.<br><br>MITIGATION STRATEGY FOR RISK 1:<br>• a certified methodology able to extend the SMEs borders through the construction of real "communities" of Excellence, in which best practices are transferred, circulated and adapted to different organisational situations. |
| A series of webinars on Industry 4.0 technologies, addressed to SMEs, with a special attention on the impacts of the technologies on Human Factors | KEY PARAMETRES OF SERVICE:<br>Analysis of how SMEs use and integrate Industry 4.0 technologies<br>Analysis of potential impacts of I4.0 and Human Factor technologies for SMEs<br>Configuration of a team of experts from RE:Lab and CNA staff to organise and implement the webinars<br>Design process for implementation<br><br>KEY PROCESSES:<br>• Define topics and timeline for webinars<br>• Creation of the expert group to deliver the webinars | RISK 1:<br>One of the consequences of the COVID-19 economic crisis is that SMEs perceive innovation and technologies as a less central issue.This can discourage SMEs' participation in the webinars.<br><br>MITIGATION STRATEGY FOR RISK 1:<br><br>Part of the communication and dissemination of the webinars will point on:<br><br>- the fact that addressing |

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| | • Define and implement invitation and engagement activities for SMEs participation in webinars<br>• Post-event activities with SMEs to maximise the benefits of these training/ knowledge-sharing activities | Human Factors is central to tackle the crisis<br><br>- the advantages of innovation for economic growth<br><br>- crisis as economic and business opportunity<br><br>The webinars will be designed to maximise SMEs interest and participation, relying on RE:Lab experience and competences in collaborative and intervention methodologies.<br><br>RISK 2:<br><br>• Proposed topics could be perceived as not fully relevant / applicable to small-medium organisation context<br><br>**MITIGATION STRATEGY FOR RISK 2:**<br><br>RE:Lab and CNA have solid and complementary knowledge of technologies and SMEs' approach to them, so the topics proposed will be elaborated considering the requirements/ perspective of the final users |

## 2.2 Bielsko-Biala (POL)

| **Selected instrument / intervention / service (e.g. workshops, matching, training, coaching, improvement groups and business networking) to be implemented by Digital Innovation Hub (DIH) and its max 250 characters summary** | **Key parameters and processes of the service to assure fast and effective application** | **Highest risks / obstacles identified and their mitigation strategy** |
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| Access to a creative space, innovative 3D scanning, 3D printing, reverse engineering and robotics technology and related technological events through FabLab | KEY PARAMETRES OF SERVICE:<br>• 24h daily access to FabLab with a remote security systems and remote supervision of the use of the equipment (eg. FabMan)<br>• Technology available: 3D scanning, 3D printing, reverse engineering, robotics<br>• presentations of specific technology/implementation model/case study<br>• Invitations to relevant technology related events<br><br>KEY PROCESSES:<br>• Setting up the security access system for 24h remote access<br>• Technology support people assigned<br>• Mapping of relevant technology related events and their promotion<br>• Organization of monthly demodays for presentations of case studies and technology | RISK 1:<br>• No possibility of physical events due to COVID-19<br><br>MITIGATION STRATEGY FOR RISK 1:<br>• Live transmission from showroom via virtual events<br><br>RISK 2:<br>• Lack of time of fablab manager<br><br>MITIGATION STRATEGY FOR RISK 2:<br>• Allocation of other person for publicity and promotion activities |
| Webinars and events (physical if possible) to raise awareness about digitalisation - both for the community and tailored for specific industrial sectors | KEY PARAMETERS OF THE SERVICE:<br>• layout/graphic design/topics of the webinar series<br>• equipment/software for providing professional webinars<br>• Plans of the events and webinars according to the gathered case studies (IoT, | RISK 1:<br>• No possibility of organisation of physical events due to COVID-19 restrictions<br><br>MITIGATION STRATEGY FOR RISK 1:<br>• Organisation the on-line webinars |

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| | software programming, AR/VR) and technologies in-house: 3D printing, 3D scanning, robotics<br><br>KEY PROCESSES:<br>• Gathering of case studies of Industry 4.0 leaders<br>• Mapping of local industrial ecosystem - preparation of matchmaking services<br>• Preparation of the plan of transmission of the webinars/organization of physical events | RISK 2:<br>• Low will of cooperation from the industrial companies and Industry 4.0 service providers<br><br>MITIGATION STRATEGY FOR RISK 2.<br>• Preparation of promotional plan and list of possible benefits of the cooperation with DIH and being a part of 4STEPS project<br>• Preparation of communication strategy - indicating the leaders and direct contact with them |
| 3D printing, additive manufacturing and 3D scanning, reverse engineering - services for companies and for makers | KEY PARAMETERS OF THE SERVICE:<br>• portfolio of projects implemented in FabLab<br>• Promotion campaign - in terms of raise awareness and demonstration of the potential of the technology<br>• Content plan of the services: 3D printing and rapid prototyping as a facilitator of bringing innovation to companies<br><br>KEY PROCESSES:<br>• Preparation of the visibility plan of the FabLab actions<br>• Communication strategy - contact with local companies - direct and on-line (newsletter); contact with local media | RISK 1:<br>• Lack of interest<br>• Low visibility of actions<br>• Low level of knowledge in terms of usage of 3D printing technology<br><br>MITIGATION STRATEGY FOR RISK 1:<br>• Communication strategy<br>• Preparation of trainings and workshops on different level of advancement |
| Showroom with robotic arms | KEY PARAMETERS OF THE SERVICE:<br>• Purchase of thematic equipment planned in the 4STEPS project<br>• training scheme and demo day presentation<br>• Cooperation with technology | RISK 1:<br>• No possibility of organization of physical events due to COVID-19 restrictions<br><br>MITIGATION STRATEGY FOR RISK 1: |

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| | providers in terms of organisation of common events<br><br>KEY PROCESSES:<br>• Preparation of the procurement procedure of the purchase of equipment<br>• Training of fablab manager in terms of the usage of equipment<br>• Preparation of the showroom activities - programming the robots | • Preparation of the virtual showroom study tour<br><br>RISK 2:<br>• Lack of interest due to very specialised technology<br><br>MITIGATION STRATEGY FOR RISK 2:<br>• Contact with local industry - preparation of the promotional materials in terms of the usage of robotic arms |
| Case study tour - presentation of Industry 4.0 implementation in practice | KEY PARAMETERS OF THE SERVICE:<br>• presentation of Industry 4.0 implementation in practice<br>• visits in DIH's partners facilities, presentations made by people who are working with Industry 4.0 on a daily basisi<br>• On the base of case studies already collected in companies we plan to prepare a study tour/demo days about the practical usage of the Industry 4.0 technologies: VR/AR, 3D scanning, big data, machine learning<br>• Target groups: end users and suppliers of Industry 4.0 but also for labour force, students and pupils who plan to relate their careers with these technologies<br><br>KEY PROCESSES:<br>• Signature of cooperation agreement with companies to work together under the umbrella of DIH<br>• Preparation of the tour plan | RISK 1:<br>• No pissibility of organisation of study vistis due to COVID-19 restrictions<br><br>MITIGATION STRATEGY FOR RISK 1:<br>• Alternative plan of virtual events<br>• Postponement of the activity |

## 2.3 Vorlarlberg (AUT)

| **Selected instrument / intervention / service (e.g. workshops, matching, training, coaching, improvement groups and business networking) to be implemented by Digital Innovation Hub (DIH) and its max 250 characters summary** | **Key parameters and processes of the service to assure fast and effective application** | **Highest risks / obstacles identified and their mitigation strategy** |
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| Artificial Intelligence scientific and industrial projects for manufacturing SMEs and associations within the area of modeling, simulation and optimization including research and connections with stakeholders | KEY PARAMETERS OF SERVICE:<br>• Research and knowledge transfer (dissemination) within the fields of Artificial Intelligence, especially in modeling, simulation, optimization as well as Machine Learning, Evolutionary Algorithm design and robots<br>• Connection and networking with stakeholders from RIS3 strategy (intelligent production), business, industry, government and research<br>• Strategy development for intelligent production<br><br>KEY PROCESSES:<br>• Research data publications and knowledge transfer<br>• Industrial project cooperation<br>• Matchmaking and consultation on needs of interested parties | RISK 1:<br>- Weakened SMEs resources (financial, human, …) to cooperate and collaborate<br><br>MITIGATION STRATEGY FOR RISK 1:<br>- finding cascading funding (funding sub-projects within specific industry) opportunities<br>- building up students´ academic/research projects together with industry (students-SMEs, students-university, literature review and empirical part including development of solutions for SME´s problem) |
| System Collaboration & Ecosystem Collaboration: the research, design and development of targeted and tailored services for stakeholders to break down system borders | KEY PARAMETERS OF SERVICE:<br>• (Literature-driven and Field) Research into the academic of Service Science and Information Systems<br>• Transfer of gained knowledge into field of business, industry, government and society | RISK 1:<br>• Missing interest and participation from business, industry and society to launch research into the academic field of Service Science |

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| for interaction and value co-creation and to reject island mentality | • Development of case studies and best practices for dissemination into the academic and empirical field of Service Science<br>• development of models for increased value co-creation between systems<br>• Development and introduction of tailored Management, Engineering and Design approaches for system & ecosystem innovation<br>• Increased system collaboration and interaction by development of (business) models to break down of organizational borders and organizational island mentality (internal & external)<br>• Use-cases for end-user: Circular economy, Supply chain- and value chain management & planning, Human-Machine collaboration, Cyber-physical systems<br><br>KEY PROCESSES:<br>• Research and the development of an ontology of service, systems, ecosystems, service interaction and value co-creation<br>• Interaction, cooperation and collaboration with and among stakeholders from the field of business, industry, government, society and academia | MITIGATION STRATEGY FOR RISK 1:<br>• Awareness raising and foster of behavioral change in business and industry about the benefits from goods- to service-dominant thinking |
| Resilience Engineering: development of a dynamic field of system innovation; increase of organizational flexibility and agility: further engineering of system | KEY PARAMETERS OF SERVICE:<br>• (Literature-driven and empirically driven) Research into the concepts of organizational robustness and resilience<br>• Research into and conceptualization of | RISK 1:<br>• Due to the negative impacts of Covid19, stakeholders from business and industry are busy with “organizational survival”: the prevention of |

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| resources and design and development of capabilities for system innovation and evolution | measures for preparedness-, preparation, response and the cope with risk and organizational crisis<br>• Research into methods, e.g. disaster response management, business continuity management, etc.<br>• Research into the academic field of resource-based view and the dynamic-capability based view to increase organizational abilities to design, develop and engineer VRIN resources and capabilities<br><br>KEY PROCESSES:<br>• Ontology development about organizational robustness and resilience - review and exploration of heterogeneous perspectives about organizational robustness and resilience for business, industry, government, society, etc.<br>• Conceptualization of organizational robustness and resilience (incl. the involvement of stakeholders from business, industry, government and society)<br>• Design and (re-)engineering of organizational capabilities (at operational level) and dynamic capabilities (at strategic level) | financial bankruptcy instead of research into the emergence of organizational resilience within their organizations<br><br>MITIGATION STRATEGY FOR RISK 1:<br>• Persuasion of stakeholders that the concept of organizational robustness and resilience deal with organizational sustainability, survivability and profitability<br><br>Use-cases for end-users:<br>• Resilience engineering on resource level, incl. technologies, system participants, information, processes & activities, product & services, customers and the system's external environment: infrastructure, strategies, environment (e.g. culture, etc.)<br>• Resilience engineering on operational, tactical and strategic management level: development of skills and capabilities (organizational & dynamic) |
| Innovation Research & Disruptive Innovation: shift from static systems towards a culture of adoption, change and renewal. Performance of innovation workshops Strategy development. | KEY PARAMETERS OF SERVICE:<br>• Workshops and seminars about innovation engineering, workshops on innovation theory, workshops on IP strategies, workshops on technology impact assessment, Plan - Do - Check - Act Workshops<br>• Scientific innovation research based upon, for example, Schumpeter, Kirzner, etc. (the "dynamic entrepreneur", | RISK 1:<br><br>• Missing resources (human, finance, knowledge, time, etc.) of target groups and stakeholders<br><br>MITIGATION STRATEGY FOR RISK 1:<br>• Development of tailored plans to perform the workshops, seminars, |

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| | creative destruction, etc.)<br>• Digital Transformation and innovation research<br>• Cooperation with bachelor- and master study programs: “Digital Innovation” and Co-Creators: Blickpunkt Wirtschaft, Business Summit & startupstube<br><br>KEY PROCESSES:<br>• Dissemination of (best) practices<br>• Education, training and lectures about innovation and innovation theory | projects (e.g. in the evening, weekends, etc.) |
| Methods & Tools; research into and provision of methods and tools for target groups and stakeholders to launch workshops on system change and innovation | KEY PARAMETERS OF SERVICE:<br>• Development and design of tailored approaches for innovation engineering and co-creation of innovation<br>• Design and development of tailored innovation engineering toolkits for innovation engineering for business, industry, government and society<br>• Provision of knowledge and expertise about the conduction of innovation engineering workshops and seminars - either physical, digital and/or hybrid<br><br>KEY PROCESSES:<br>• Scientific guidance in application of innovation engineering methods<br>• Conduction of workshops and seminars about innovation engineering | RISK 1:<br>• Missing interest of target groups and stakeholders<br><br>MITIGATION STRATEGY FOR RISK 1:<br>• Development of Best Practices to convince the stakeholders |
| Co-Creators - the hub on Business Intelligence & Innovation composed of active regional and national stakeholders; networking and the co-creation of value is a | KEY PARAMETERS OF SERVICE:<br>• Networking, collaboration and cooperation with S3 Stakeholders: business, industry, academia, government, society | RISK 1:<br>• Missing resources and interests of the co-creators<br><br>MITIGATION STRATEGY FOR RISK 1: |

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| major pillar in dissemination of knowledge and expertise | • Networking, collaboration and cooperation with befriended initiatives and projects at regional, national, Interreg and European Level<br>• Design and Development of innovative project ideas and project proposals for business, industry, government and society<br><br>KEY PROCESSES:<br>• Conduction of tailored networking events for stakeholders out of business, industry and governance<br>• Participation at regional and transregional events incl. the presentation of the HUB's endeavors | • Awareness raising campaigns for co-creators and hub stakeholders<br><br>RISK 2:<br>• Saturation of hub co-creators and stakeholders<br><br>MITIGATION STRATEGY FOR RISK 2:<br>• Development of unique selling propositions of the Hub |

## 2.4 Liberec region (CZE)

| **Selected instrument / intervention / service (e.g. workshops, matching, training, coaching, improvement groups and business networking) to be implemented by Digital Innovation Hub (DIH) and its max 250 characters summary** | **Key parameters and processes of the service to assure fast and effective application** | **Highest risks / obstacles identified and their mitigation strategy** |
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| FabLab workshops for SMEs demonstrating exploitation of rapid prototyping using advanced manufacturing (Pilot) | KEY PARAMETERS OF SERVICE:<br>- 2 full-day workshops - 1 for 3D printing and machining and engraving and 1 for PCB and IoT printing and delivery<br>- each for 10 SME managers<br>- in DEXIC µFabLab - innovative one-stop-shop for rapid prototyping laboratory in 3D printing, PCB, IoT and robotics<br>- aiming at demonstrating cheap and flexible 3D and PCB printing for delivery of digital innovation<br>- with support from internal and external mentors specializing in 3D printing, PCB and IoT<br><br>KEY PROCESSES:<br>- defining end users and specifying possible prototypes<br>- further equipping DEXIC µFabLab to be able to cover all relevant needs in 3D, PCB, IoT and machining and engraving<br>- allocation of mentors to workshop sessions<br>- promotion among SME managers | RISK 1:<br><br>- low conversion of SME managers to workshops based on timing, format, COVID-19 related SME challenges etc.<br><br>MITIGATION STRATEGY 1:<br><br>- personal invitations to SME managers, partnering with networkers and associations, vouchers for the use of DEXIC µFabLab, matching with interesting potential employees or external experts<br><br>RISK 2:<br><br>- impossibility of a physical workshop due to COVID-19 restrictions<br><br>MITIGATION STRATEGY 2:<br><br>- division of workshops into smaller groups or individual courses |
| Provision of FabLab space for SMEs and startups for own rapid prototyping | KEY PARAMETERS OF SERVICE:<br>- rental of FabLab premises with available on-spot 3D design/print, PCB, IOT and robotics equipment<br>- providing consumables for working with FDM, SLS, SLA | RISK 1:<br>Equipment damage<br><br>MITIGATION STRATEGY 1:<br>Anyone interested in using the equipment will need to receive introductory training, including safety instructions |

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| | and PCB printers<br>- providing on-spot support<br>- assistance in arranging training seminars for companies, for training employees - complete provision of equipment<br><br>KEY PROCESSES:<br>- defining end users and specifying possible prototypes<br>- assigning key personnel to run the services<br>- creating methodology flow for all rentals to follow<br>- promotion of service among target groups<br>- support during rental of space | |
| Expert technical consultation and support with using the 3D print, PCB, IOT and robotics equipment | KEY PARAMETERS OF SERVICE:<br>- training in the field of SLS, FDM, SLA and PCB printing.<br>- training in the field of machining - work on the plotter<br>- consultation of prototypes and assistance in their design, programming, final modifications.<br>- consultation of designs, possible solutions and feasibility of prototypes and products.<br><br>KEY PROCESSES:<br>- defining end users and specifying possible prototypes<br>- assigning key personnel to run the services<br>- creating methodology flow for all trainings to follow<br>- promoting the service among the target group | RISK 1:<br>Insufficient capacity of professional consultants, insufficient expertise in some areas.<br><br>MITIGATION STRATEGY 1:<br>Getting more internal experts on board to spread technical expertise among more internal people<br><br>MITIGATION STRATEGY 2:<br>Support of external experts by the Technical University in Liberec and other territorial experts.<br><br>RISK 2:<br>Lack of capacity to support testing in some areas of I4.0<br><br>MITIGATION STRATEGY 3:<br>Support of external experts by the Technical University in Liberec. |
| Talent scouting and match-making events organization such as hackathons, workshops and thematic events | KEY PARAMETERS OF SERVICE:<br>- scouting support and assistance in acquiring new employees, external staff and talents for SMEs. | RISK 1:<br>Low interest of talents and potential employees in thematic events<br><br>MITIGATION STRATEGY 1: |

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| | - talent search within the organization of Hackathons, workshops and thematic events within the activities of DEX IC and FabLab<br>- presentation of activities of cooperating companies on organized events<br>- matchmaking events connecting teams/companies and investors<br><br>KEY PROCESSES:<br>- defining set of key events to organize<br>- planning events and inviting cooperative SMEs<br>- setting up process how to organize events withing FabLab and in other premises<br>- individual scouting of people to invite to events<br>- mass promotion of events to relevant narrow subsegments of target groups<br>- gathering interesting event people to lead/inspire/matchmake on the events | - Online campaigns aimed at specific target groups<br>- support from contacts at the Technical University and CTU (professors and students).<br>- Cooperation with local governments and educational institutions.<br>- individual scouting activities<br><br>RISK 2:<br>- Too specific interest of companies in the specific skills of potential employees<br><br>MITIGATION STRATEGY 2:<br>- Advanced scouting of students and young people from the Technical University, CTU, and other universities, as well as high schools<br><br>RISK 3:<br>- Competitive struggle for employees among various organizations and the resulting conflicts.<br><br>MITIGATION STRATEGY 3:<br>- Creating official rules which describe how to help find talent, share these contacts with companies and redistribute these contacts. Controlling of strict adherence to these rules. |
| Educational workshops for managers of SMEs on transformation towards Industry 4.0. (Pilot) | KEY PARAMETERS OF SERVICE:<br>-workshops on strategy, risk management, transformation and new business models<br>- support from technology and business mentors<br><br>KEY PROCESSES:<br>- creation of educational concepts<br>- allocation of mentors to workshop sessions | RISK 1:<br>Low interest from SMEs-<br><br>MITIGATION STRATEGY 2:<br>- training targeting the most needed subtopics in transformation, online campaign, direct communication with companies, support of communication towards companies<br><br>RISK 2: |

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| | - promotion among SME managers<br>- workshop agenda<br>- preparing of training materials<br>- provision of training facilities | Impossibility of physical meetings due to the persistent pandemic situation<br><br>MITIGATION STRATEGY 2:<br>- Transfer of the two-day workshop to the online environment while maintaining the maximum possible quality of the program<br><br>RISK 3:<br>Poor satisfaction from workshops<br><br>MITIGATION STRATEGY<br><br>- Interesting and experienced expert lecturers, Interactivity, demonstrations, group work, enough space for your own creativity and retrospective |

## 2.5 Nyugat-Dunántúl (HUN)

| **Selected instrument / intervention / service (e.g. workshops, matching, training, coaching, improvement groups and business networking) to be implemented by Digital Innovation Hub (DIH) and its max 250 characters summary** | **Key parameters and processes of the service to assure fast and effective application** | **Highest risks / obstacles identified and their mitigation strategy** |
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| Technical development of autonomous warehouse store for a regional company with the help of indoor (semi)-autonomous drone | KEY PARAMETERS OF SERVICE:<br>• consultation + technical development of setting up drone technology (equip the drone with mobile phone to take photos of the products in the warehouse)<br>• technical development of a guidance information system by custom-made camera system<br>• technical development of connecting to the company´s system<br>• consultation on data integration into ERP<br><br>KEY PROCESSES:<br>• Check of profile of company for the service<br>• Introduction consultation with the company on their specific needs<br>• Matching technology + data integration solution<br>• Technical development<br>• Case study description | RISK 1:<br>• lack of GPS signal in the indoor warehouse<br><br>MITIGATION STRATEGY FOR RISK 1:<br>• Development of a guidance information system by custom-made camera system (equip the drone with mobile phone to take photos of the products in the warehouse)<br><br>RISK 2:<br>• data integration with the company<br><br>MITIGATION STRATEGY FOR RISK 2:<br>• Integration with ERP through individual interface. |
| Usage of Augmented Reality application for sales purpose (demonstrate product features in a non-conventional way. | KEY PARAMETERS OF SERVICE:<br><br>-consultation with the company to design the concept prototype | RISK 1:<br>• Large computing power is required in order to run the application in a |

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| | - 3D printing of the prototype<br><br>- integrate the prototype into AR application<br><br>KEY PROCESSES:<br><br>-PBN's DIH, called am-LAB's staff has been working on the AR visualization of different plans of a start-up company.<br><br>-Start-up company developed concept prototype with am-LAB.<br><br>-The prototype was 3D printed and utilised for sales purpose via an Augmented Reality application.<br><br>-This app enables the company to demonstrate product features in a non-conventional way. | sufficient way. Cost of HPC (High Performance Computing) is also significant, therefore the customer may have concerns.<br><br>MITIGATION STRATEGY FOR RISK 1:<br><br>• Purchase a computer in the most-cost effective way ( able to run the app, but not with the best computing power) |
| Real time data visualisation of the production line of a local manufacturing SME | KEY PARAMETERS OF SERVICE:<br><br>-Sensor data directly from the machines, is transmitted to a local server via API(application programming interface). Following that it is processed in a database, then visualised on smartphone<br><br>KEY PROCESSES:<br><br>- Receiving sensor data of the machines of the production line of the company<br><br>-Transmit all the data to a local server<br><br>-The data are processed and then visualised on smartphone<br><br>-Analyse the data of the machines | RISK 1:<br><br>• In some cases APIs are not open for external usage<br><br>MITIGATION STRATEGY FOR RISK 1:<br><br>• In case this would be the case it is needed to find an alternative way to process the real time data from machines.<br><br>RISK 2:<br><br>• The processed data are not sufficient to analyse<br><br>MITIGATION STRATEGY FOR RISK 2:<br><br>• Equip further sensors to the machines to gain further and more precise |

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| | | data |
| Data Science: Utilisation of real-time operational data in the agricultural field | KEY PARAMETERS OF SERVICE<br><br>-The objective is to combine real-time operational data from various sources with better productivity goals.<br>-The data originates from tractor, combine harvesters, chemical (fertiliser) dispenser etc.. which are confronted with management information system information.<br><br>KEY PROCESSES:<br>• Gain real-time operational data from the machines of the company operating in the agricultural field-<br>• Process/Analyse the machines' data to help the the company to have more profit (optimization calculation based on the received data)<br>• Confront the machines' data with the management information system information<br>• Check the data in the management information system,<br>• Based on the comparison, optimise the machines in order to operate in a more efficient way<br>• | RISK 1:<br>• Data from different sources cannot be integrated.<br><br>MITIGATION STRATEGY FOR RISK 1:<br>• The integration of data will have to be solved in an alternative way, in order to gain a complex database.<br><br>RISK 2:<br>• Weather is also playing important role: extreme weather conditions may result false data<br><br>MITIGATION STRATEGY FOR RISK 2:<br>• The weather data (dry, extent of rain, speed of wind..) will have to appear in data analysis in order to gain reliable data and compare it in an efficient way |
| Raising awareness/Eye-opening trainings about the new opportunities of business developments thanks to I 4.0 (Pilot) | KEY PARAMETERS OF SERVICE:<br><br>-Trainings about Industry 4.0 tools for triple-helix stakeholders (policy-makers, academia and business actors.) e.g: new business models, supply needs, the utilisation of I4.0 tools.<br><br>Customised offers will be developed and shared with different actors based on their needs and preferences | RISK 1:<br>• lack of interest of stakeholders due to operational pressure<br><br>MITIGATION STRATEGY FOR RISK 1:<br>• Emphasise the advantages and utilisation solutions of I4.0 tools/services/solutions in |

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<td>The first customers from each sector are expected to request orders for technology maturity audits, resulting in at least one order in each industry for application of digital transformation service.<br><br>KEY PROCESSES:<br><br>• Prepare the trainings about Industry 4.0 tools (clarify the agenda, time, and place<br>• The different I4.0 services and solutions of am-LAB will be demonstrated in the framework of trainings to the stakeholders by experienced engineering staff in a kind of “show room” way in the lab of am-LAB. ( The following technological areas are planned to be demonstrated by am-LAB staff to stakeholders: Additive manufacturing; 3D scanning, AR technology, Robotics, sensor development, drone utilisation in industry, business animation, advanced data analytics)<br>• Based on the needs of the stakeholders, customised offers will be developed<br>• The first customers from each sector are expected to request orders for technology maturity audits<br>• Implement these orders<br>• Preparation of a SWOT analysis of the pilot implementation of the customers who participate in the maturity audits</td>
<td>the most appropriate way-->preparation an action plan for certain stakeholders and persuade them why the planned action is beneficial for them<br><br>RISK 2:<br><br>• Stakeholders will not be able to utilize I4.0 tools in a sufficient way<br><br>RISK 3:<br><br>• Not sufficient labourforce and/or competence and/or financial source to utilize I4.0 tools.<br><br>MITIGATION STRATEGY FOR RISKS 2+3:<br><br>• Know-how exchange in connection with I4.0 services, in order to better exploit the benefits of these tools.</td>
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<td colspan="2">The above mentioned actions are in connection with robotics; Augmented Reality and Data Science. The aim of these actions is to enhance the level of digitization of the regional stakeholders, and optimise their progress, which might result higher profit for them. On the other hand, targeted stakeholders will widen their knowledge in the field of I4.0, which might be further utilised.</td>
<td>GENERAL / COVID-19 RISKS<br><br>• because of COVID-19 innovation and technologies as a less central issue<br>• competitors catch-up</td>
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| | • PBN's DIH's (am-LAB) organizational capacity limit to carry out the planned actions<br><br>MITIGATION STRATEGY FOR GENERAL / COVID-19 RISKS:<br><br>• Communicate the advantages of innovation for economic growth<br>• the planned actions will be specific to each company, in order to implement it in the most advantageous way |

## 2.6 Zahodna Slovenija (SLO)

| **Selected instrument / intervention / service (e.g. workshops, matching, training, coaching, improvement groups and business networking) to be implemented by Digital Innovation Hub (DIH) and its max 250 characters summary** | **Key parameters and processes of the service to assure fast and effective application** | **Highest risks / obstacles identified and their mitigation strategy** |
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| Analytical assessment and individual coaching of SMEs on the topic of sustainable value chain reporting | KEY PARAMETRES OF SERVICES:<br>• Analytical assessment of existing traceability system in SME<br>• Coaching on sustainable value chain reporting with the aim of producing non financial report<br><br>KEY PROCESSES:<br>• Assigning responsible experts on traceability and sustainable value chain and reporting<br>• Promoting service among SMEs<br>• Initial assessment and coaching on non financial reporting | RISK 1:<br>- COVID-19 restrictions impacting possibility of on-site assessment and coaching<br><br>MITIGATION STRATEGY 1:<br>- online assessment moved to online delivery (although coaching would need to remain physical) |
| Series of workshops for manufacturing SMEs on understanding the importance of customer experience | KEY PARAMETERS OF THE SERVICE:<br>• Design thinking workshops with the aim to identify user needs<br>• Mapping user journey workshops<br>• Pilot testing theory on the SME´s selected product/service<br><br>KEY PROCESSES:<br>• Engagement of SMEs (meeting them min 2x before)<br>• Selecting the correct product/service of SME to | RISK 1:<br>- no possibility of physical workshop due to COVID-19<br><br>MITIGATION STRATEGY FOR RISK 1:<br>- organization in the on-line collaboration tool MURAL, but with limited level of workshops<br><br>RISK 2:<br>- engaging SMEs to miss 5 people for 3 days<br><br>RISK 3:<br>- SMEs not taking this seriously |

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| | pilot<br>• Assuring 2 facilitators with design thinking knowledge<br>• Having a space for the workshop allowing for high interactivity (walls to write on, etc.) | MITIGATION STRATEGY FOR RISKS 2+3:<br>- have decisions with management of SMEs to encourage employees to go via e.g. free allocated days etc. |
| Series of Workshops on Best practice exchange between companies and diving deep into key I4.0 concepts | KEY PARAMETERS OF THE SERVICE:<br>• 3 Workshops held in different production companies (on production shopfloor) on the topic of different levels of implementation of Industry 4.0 (explaining the concepts of TRANSPARENCY, PREDICTABILITY, AUTONOMY in I4.0)<br><br>KEY PROCESSES:<br>• Best practice exchange between host company and between attendees<br>• Knowledge transfer between large companies and SMEs<br>• Workshops aiming at top level production managers and development managers in production companies (especially SMS) | RISK 1:<br>- COVID-19 restrictions impacting the on-site organization of workshops (production shopfloors in companies)<br><br>MITIGATION STRATEGY FOR RISK 1:<br>- organization of on-line workshop on the development of key concepts<br>- the visit to company shop floor would follow later |
| Pilot platform for the e-life cycle of products | KEY PARAMETERS OF THE SERVICE:<br>• Development of a pilot platform for e-life cycle of products (with the help of digital twinning)<br>• Offering the services of ETIM International and the national point ETIM Slovenia<br>• Promoting service to SMEs<br><br>KEY PROCESSES:<br>• Workshops on promoting the service and key concepts<br>• Show-casing the advantages | RISK 1:<br>- no possibility of physical workshop due to COVID-19<br><br>MITIGATION STRATEGY FOR RISK 1:<br>- organization of on-line workshops explaining key concepts<br><br>RISK 2:<br>The problem of the introduction of the digital twin is expected in the decision-making of manufacturers to fully digitize their products. |

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| | of a fully digitized e-product - case examples presented<br>• Individual coaching on offer of the international standardization organization ETIM | MITIGATION STRATEGY FOR RISK 2:<br>- Show-casing the advantages of a fully digitized e-product (case examples)<br>- active promotion/ workshops/ webinars. |
| Access to finance | KEY PARAMETERS OF THE SERVICE:<br>• raising awareness of SMEs where they can get co-financing for digitalization activities<br><br>KEY PROCESSES:<br>• presentation with SME's where they can find additional funding for digitalization activities: tenders, grants, vouchers and loans with a favorable interest rate in Slovenia and EU<br>• Best practice exchange between host company and between attendees<br>• Consulting 1/1 which each SME according to their needs of digitalisation | RISK 1:<br>- no possibility of physical workshop due to COVID-19<br><br>MITIGATION STRATEGY FOR RISK 1:<br>- organization of on-line workshops explaining key concepts<br><br>RISK 2:<br>• Financial perspective is ending at the end of the year, so their will be a gap before new tenders/grants/loans will be published<br><br>MITIGATION STRATEGY FOR RISK 2:<br>• Presentation of tenders/grants/loans which will be published in year 2020 and 2021 |

## 2.7 Stuttgart (DEU)

| **Selected instrument / intervention / service (e.g. workshops, matching, training, coaching, improvement groups and business networking) to be implemented by Digital Innovation Hub (DIH) and its max 250 characters summary** | **Key parameters and processes of the service to assure fast and effective application** | **Highest risks / obstacles identified and their mitigation strategy** |
|---|---|---|
| Operator 4.0 approach: evaluate and demonstrate wearable devices to be used in industrial context (Pilot) | KEY PARAMETRES OF SERVICE:<br>• Create an overview of use cases of wearable technology in industrial context<br>• Assess the current state of maturity of wearable technology<br>• Publish report<br><br>KEY PROCESSES:<br>• Define a method of assessing the maturity level<br>• Research of wearable hardware and software market<br>• Research of current forms of application of the technology<br>• Communicate with SMEs regarding the problems they face in using wearables and their solutions to the problems<br>• Evaluate suitability of wearable technology for specific tasks<br>• Define structure of the report | RISK 1:<br>• Lack of cooperation from SME side due to their economic situation<br><br>MITIGATION STRATEGY FOR RISK 1:<br>• Communicate benefits of cooperation (e.g. mention in report) |
| Innovation application events (Pilot) | KEY PARAMETRES OF SERVICE:<br>• Organize 3 events for innovation application directed at specialists from certain application fields<br>• Covered topics are logistics/virtual production/factory planning, maintenance or wearables<br>• Target groups are SME employees (management | RISK 1:<br>• Restrictions for physical events due to Covid-19<br><br>MITIGATION STRATEGY FOR RISK 1:<br>• Alternative plans and concepts for an online event |

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| | and technical), research<br><br>KEY PROCESSES:<br>• Recognize specific needs of SMEs to be covered in the program<br>• Set up agenda<br>• Get keynote speakers for best practice applications<br>• Perform marketing activities to reach target groups | |
| VR/AR Hardware Assessment | KEY PARAMETRES OF SERVICE:<br>• Testing VR/AR hardware<br>• Comparing VR/AR hardware<br><br>KEY PROCESSES:<br>• Identification of needs of SMEs on which hardware is interesting for them and which aspects to look at (e.g. high resolution)<br>• Monitoring the hardware solution market<br>• Getting hardware for testing<br>• Establishing process for testing from 2 internal colleagues<br>• Publishing results to SME via publishing platform to be decided | RISK 1:<br>- Limited availability of VR/AR headsets from some manufacturers<br><br>MITIGATION STRATEGY FOR RISK 1:<br>- having strict documentation of testing procedure (for producers who are not happy with results) |
| Marketplace and matchmaking for XR (extended reality) | KEY PARAMETRES OF SERVICE:<br>- online-event for XR with matchmaking, agenda with different parallel sessions<br>- online marketplace and matchmaking platform for XR<br><br>KEY PROCESSES:<br>- decision on functionality of the platform<br>- gathering profiles for startups and participants<br>- invitation to event and platform<br>- moderation of the event and platform<br>- setting up agenda for the event<br>- promotion of event and platform | RISK 1:<br>- long-term commitment of participants<br><br>MITIGATION STRATEGY FOR RISK 1:<br>- permanent communication activities and community events<br><br>RISK 2:<br>- high costs for running the platform<br><br>MITIGATION STRATEGY FOR RISK 2:<br>- having viable business model |
| Working Group: Big Data | KEY PARAMETERS OF SERVICE: | RISK 1: |

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| Technology Screening | • Show the technological development to the participants<br>• Identify possible applications to harness the development<br>• Develop a technology roadmap within the working group.<br><br>KEY PROCESSES:<br>• Organize a kick-off event to initiate the working group<br>• Identify and invite relevant participants<br>• Deep Dive analysis of patents and research papers on this topic by using specific keywords<br>• Discuss the results of the deep dive analysis within the working group<br>• Conduct further analysis based on the discussion in the working group | • Wrong initial keyword search<br><br>MITIGATION STRATEGY FOR RISK 1:<br>• Conduct a mini deep dive analysis to get an idea of the available data before the working group starts |