

# CURRENT STATUS REVIEW REPORT

Completion date of the report: 31.01.2020

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## ADMISSION:

This document was developed in the framework of the implementation of the project entitled “SAVE - Stimulating and Validating digital Entrepreneurship as the best way to increasing the quality of start-ups” under the Erasmus+ Programme, Action 2: Strategic Partnerships.

Current Status Review Report has been prepared by all project partners from Poland, Slovakia, Lithuania, Spain, Portugal and Cyprus. This Report is a summary of the current information on the issues related to Industry 4.0 and the related launch of start-ups. This internationalism and wide cross-section of information allows for a new and interesting look at the current topic.

### **In the Report four issues are presented:**

- 1) What are training programs for start-uppers related to Industry 4.0 topic ‘Digital start-ups’ vs. ‘Digital scale-ups’ offer by VET providers?
- 2) What are the examples of good practices dealing with digital entrepreneurship competences with a focus on innovative ways of outreach and delivery of learning activities?
- 3) What are the strategies of validation of start-uppers skills and abilities?
- 4) What are the models of recognition and validation of the competencies gained in formal and non-formal education in partner countries?

### **The Current Status Review Report is based on:**

- 1) Secondary research on existing materials, strategic documents, regulation in the area of educational services provision and offers;
- 2) Focus group meeting which was held December 2019 and January 2020 in Cala D’or, Kaunas, Kosice, Lisboa, Nicosia and Rzeszow.

During the focus group the basic information has been provided on SAVE START-UP project using kick-off meeting files and project proposal.

This document is the basis for the development of the Curriculum for VET providers entitled “Digital, Modern Entrepreneurship it’s your best chance!”

## DEVELOPMENT OF THE TOPIC:

- 1) What are training programs for start-uppers related to Industry 4.0 topic 'Digital start-ups' vs. 'Digital scale-ups' offer by VET providers?

## POLAND

### RZESZOW REGIONAL DEVELOPMENT AGENCY

In Poland, the training programs for start-ups are closely interconnected to general entrepreneurial support training. There are training programs in Topics:

- ✓ *Digital start-ups' vs 'Digital scale-ups'* At the national level, examples of good training programs available to trendy entrepreneurs / start-ups are:

#### **Network of Innovation Mentors** (implemented by PARP)

is a mentoring program targeted at start-ups and young companies seeking support in working on the most important business competences. The program will give them access to valued and experienced experts from various fields who will share their knowledge and support in working on specific challenges. The mentors participating in the program are experienced entrepreneurs and managers who have achieved business success.

#### **SME Manager Academy** (implemented by PARP)

The goal of the SME Manager Academy project is to support raising the competences of managers of micro, small and medium enterprises, i.e. persons who already hold managerial positions in these companies or are to be promoted to such positions.

Both programs are programs aimed at individualizing the education process in the field of new technologies, entrepreneurship, business modelling, leadership in times of uncertainty (digital), etc.

- ✓ *Cybersecurity in your start-up*

**Cyberlaw.pl** - a website that is a compendium of knowledge for start-ups in the field of cybersecurity on the web. The site has free access to guides, applications, checklists, code fragments, and cyber security vulnerability analyzers. In addition, start-ups dealing with this topic are described. Furthermore, the blog of the site owner also describes the latest news on cybersecurity on the web from around the world.

## DANMAR COMPUTERS

In recent years, Polish start-ups have changed their focus from domestic to global markets. Local start-up scenes have emerged in Warsaw, Krakow and other cities, mostly thanks to collaborative spaces. There are some special initiatives directly focused on start-ups:

- **Start-up Hub Poland** - Start-up Hub Poland is a non-profit foundation. Based in Warsaw, it is start-up ecosystem builders with Poland at the centre. The vision is to

create a hub where international and Polish start-ups work with corporate and experiment on the pilots that can be scaled globally.

- **Academic Business Incubator** - it is a proposal for start-up projects that are looking for support for further development
- **Poznan Science and Technology Park** - partner of Merlin ICT, an European programme which helps researchers create enterprises. Merlin ICT will support market-oriented researchers, SMEs and start-ups across Europe, to consider the full potential of their research and to shape ideas and outputs into innovations to be ready for market validation and commercialisation, by using modern needs-first, market-led methodologies.

#### The existing programs:

1. **'Digital start-ups' vs. 'Digital scale-ups'**: no special training in this area exists in Poland
2. **Circular economy in your start-up**: no special training in this area exists in Poland
3. **Digital lifestyle entrepreneurship**: Industrial Development Agency - dedicated IDA programmes for specific sectors of industry. The Industrial Development Agency has created a comprehensive development plan for industries such as: space technologies and video games. Currently, the IDA is in the process of defining more sectors in which a long-term support programme needs to be developed for growth of the Polish economy.
4. **Internet of Things in entrepreneurial practice**: Transition Technologies PSC - Internet of Things system is a platform which will allow achieving goals related to a project. It is a kind of connector which makes cooperation between all the elements included in the IoT system easier. It is the thing that makes it possible for communication, management, analytics, visualisation or databases to be used by means of only one tool - IoT platform.
5. **Infrastructures of sensors in daily business usage**: Infrastructure for development (PARP)
6. **Analytics algorithms for customers Big Data**: Data school - e-learning course with data visualisation
7. **Cybersecurity in your start-up**: Samsung Inkubator Lublin

## SLOVAKIA

### TECHNICAL UNIVERSITY OF KOSICE

In Slovakia, the training programs for start-ups are closely interconnected to general entrepreneurial support training. There are some special initiatives directly focused on start-ups. The most important are as follows:

**The Slovak Business Agency**: It offers a program specifically aimed at support start-up businesses called Start-up Sharks. The program aims to increase the chances of promoting innovative and viable ideas Slovak entrepreneurs in the market through the provision of assistance in the appropriate setting of their business plans. Support in progress through a component called Start-up pool that offers thematic seminars and workshops, training and business training education, professional individual counselling by experts and mentors,

practical advice to support the creation and launch of start-ups, including online consultancy and participation in international start-ups events.

**Club of Business Angels of Slovakia** - is an initiative of the Youth Association entrepreneurs of the SR with the support of the Slovak Business Agency and private equity and venture capital associations.

**Neulogy Ventures** - a company providing initial capital, necessary to start a business as a non - financial support (including training) for an innovative start-up business project with the ambition to succeed in world markets.

#### **The existing programs:**

1. *'Digital start-ups'* vs. *'Digital scale-ups'*: no special training in this area exists in Slovakia

2. *Circular economy in your start-up*:

The Training developed under H2020: The ORCERIS training (funded by EIT RawMaterials) aims at increasing the success rate of new business ideas for the circular economy and raw materials. It does so by an introduction to the circular economy and use of the serious game Risk & RACE, using the Opportunity recognition and ideation techniques; Network formation: assessing implications for collaboration and network forming with Circulator and TOV tool.

3. Digital Lifestyle entrepreneurship:

The Slovak Business Agency, together with the Slovak capital, Bratislava, joined the CERlecon project - "CENTRAL EUROPE Regional Innovation Ecosystems Network" aimed at creation of a "Playpark" - a system for increasing the skills of start-ups in new technologies, innovative products, services, processes or social innovation.

4. Internet of Things in entrepreneurial practice: no special training in this area exists in Slovakia

5. Infrastructures of sensors in daily business usage: no special training in this area exists in Slovakia

6. Analytics algorithms for customers Big Data: no special training in this area exists in Slovakia

7. Cybersecurity in your start-up no special training in this area exists in Slovakia. It creates the part of curricula for university students studying informatics.

## **LITHUANIA**

### **SOCIAL INNOVATION FUND (SIF)**

Lithuanian VET institutions do not provide any programmes or trainings for start-uppers related to Industry 4.0. We have collected few examples of the courses on IT and Engineering:

**Vilnius Business College** (<http://www.kolegija.lt/mokymai/it-kursai/>):

- IT courses
- programming courses)

**Marijampolės College** (<http://www.marko.lt/studiju-programos/>):

Information Technologies:

**Kaunas College** (<https://www.kaunokolegija.lt/en/study-programmes/>):

- Software systems (NEW)
- Multimedia technology
- Computer Network Administration
- Information Finance Systems
- Industrial Design Engineering (NEW)
- Smart Systems
- Geodesy
- Automation and Robotics
- Business Management

**Kaunas Technical College (University of Applied Sciences)**

<http://www.ktk.lt/studies/electronic-engineering/>:

*Electronic Engineering.* The aim of the study programme is to train specialists who had necessary knowledge and skills to analyze and select electronic devices and systems, were able to design, install and adjust electronic devices and systems, understood the standards and directive particularities of electronic device and systems manufacturing and operation, were able to organize the activity of electronic sector enterprise (division).

**Klaipėda State College** (<https://www.kvk.lt/lt/studiju-programos/>):

- IT technologies
- Electronics and automation engineering

**Vilnius State College** (<https://www.viko.lt/inzinerijos-mokslai/>)

- Electronics engineering
- Computer systems
- Telecommunication systems

**Kaunas College of Social Sciences** (<https://www.smk.lt/en/study-here/>):

- Computer Games and Animation

**Vilnius Technology College** - "Your hobby here becomes profession!" (<https://vtdko.lt/>):

- Electronics and automation engineering

## SPAIN

**Sea Teach S.L.**

The Report provides information on the existing situation in Spain on the development of digital entrepreneurship competencies needed for the implementation of the concept of 'Industry 4.0'. The module chosen for Sea Teach was 'Analytics algorithms for customers Big Data', hence, there was particular focus on this topic.

In Spain, training programmes related to Big Data and analytics for start-uppers are mainly master's degrees, offered by both public and private organizations. These masters do not

require a specific qualification; hence, it is highly recommendable being a start-upper or an entrepreneur to follow the programme.

The organizations offering Big Data and Analytic algorithms programmes for Start-uppers are as follows:

- **Spanish chamber of commerce (Cámara de Comercio):** The Spanish chamber of commerce offers a course of Big Data focused on start-uppers and entrepreneurs. There is web for start-uppers available, where they can read important information regarding their companies (i.e. how to innovate, how to accelerate the company...).
- **UNED (National University of Distance Education):** UNED is the Spanish distance learning and research university founded in 1972 and is the only university run by the central government of Spain. Big Data and business master's degrees are offered by this institution, and there are no pre-qualifications requirements to enrol the course.
- **Escuela de Organización Industrial:** Established in 1955, Spain's School of Industrial Organisation was the first business school in Spain and is one of the oldest in Europe. It was a pioneer in developing specialised training programs on business skills and improving companies.
- **Private Organizations:** IMF Business School, IEBS school, Universitat Oberta de Catalunya.

#### Training programmes

Programme	Institution	Location
<b>Curso Superior en Big Data</b>	<b>Cámara de Comercio</b>	<b>Madrid</b>
Fundamentos en Big Data	La Salle Barcelona	Barcelona
Introduction to Data Science and Big Data	Universitat de Barcelona	Barcelona
Inteligencia de Negocio y Big Data Analytics	UOC	Spain (online)
<b>Master's in Big Data and Business Analytics</b>	<b>UNED</b>	<b>Spain (online)</b>
Master's in Digital Business Analytics & Big Data	IEBS School	Madrid
Executive programme in Big Data & Business Analytics	Escuela de Organización Industrial	Madrid

Two programmes, offered by public institutions, are explained more in detail in the table below.





<b>Programme</b>	Curso Superior en Big Data	Master's in Big Data and Business Analytics
<b>Institution</b>	Cámara de Comercio	Universidad Nacional de Educación a Distancia
<b>Location</b>	Madrid	Spain (Online)
<b>Goals</b>	<p>-Knowing and understanding Big Data as a tool for decision making strategies.</p> <p>-To Launch initiatives for implementing Big Data in new departments within the company. - To Understand what machine learning is, as well as deep learning and cloud computing.</p> <p>-Knowing and applying the concept of "Customer intelligence".</p>	<p>-To provide training on the main technological platforms and tools.</p> <p>-To be able to develop algorithms of Data Mining and Machine learning (Big Data Analytics).</p> <p>-To encourage professionals to develop their innovative activity in the implementation of these technologies and BigData</p>
<b>Methodology</b>	Masterclasses, presentation of success stories, discussions, final project.	Lectures, masterclasses, multimedia resources, discussions with professionals and a final project/exam.
<b>Duration</b>	180h	600h
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. An introduction to Business intelligence.</li> <li>2. Global vision of Big Data</li> <li>3. Advanced analytics</li> <li>4. Business interest</li> <li>5. Clouding computing</li> <li>6. Internet of things</li> <li>7. Blockchain and cryptocurrency</li> <li>8. Tools</li> <li>9. Masterclasses</li> </ol>	<ol style="list-style-type: none"> <li>1. An introduction to Big Data</li> <li>2. Databases: SQL</li> <li>3. Big Data Technologies</li> <li>4. Data Mining &amp; Analysis</li> <li>5. Business analytics</li> <li>6. Business applications for the companies</li> <li>7. Data Science for Companies</li> <li>8. Text Mining in social media</li> <li>9. Open Data</li> </ol>
<b>Target Group</b>	Entrepreneurs/Start-uppers, Executives.	Entrepreneurs/Start-uppers, Executives and graduates.



## PORTUGAL

### Mindshift Talent Advisory Ida

The programme *Industria 4.0* is the outcome of a protocol signed, in January 2017, between the Portuguese government and COTEC - the leading Portuguese business association for the promotion of innovation and business technology cooperation. Aiming to enhance the digital capital of the Portuguese economy, one of the *Industria 4.0* programme strategic axes is precisely the training, capacitation and readjustment of the work force to face the challenges posed by the digital revolution.<sup>i</sup> There are several training programmes offered by VET providers related to Industry 4.0, but they do not exclusively target start-uppers:

1. The *Open Days 4.0* (COTEC and IAPMEI - Competitiveness and Innovation Agency) promote the sharing of experiences, as well as the presentation and exchange of good practices within the field of industry 4.0.<sup>ii</sup>
2. The *Ubbu - Code Literacy project*: allows students of the Fundão municipality elementary school to learn computer programming. The project aims to bring computer science to schools in the early years of schooling and enables teachers to work on digital literacy skills with students from the 1st cycle syllabus, reinforcing their readiness for a digital society.<sup>iii</sup>
3. The *SI Qualificação Projecto Individual* (Incentives System Qualification Individual Project) targets SMEs; under the wing of the *Capacitar i4.0*, which integrates the initiatives from Industry 4.0 and INCoDe.2030 (sponsored by FCT the national funding agency for science, research and technology), this initiative encompasses training to qualify human resources and organizations to face the challenges of the 4<sup>th</sup> Industrial Revolution.<sup>iv</sup>
4. The *Qualifica IT* (InvestBraga, Minho University and IEPF - the National Institute for Employment and Vocational Training), provides training to young graduates in the area of computer programming. The main objective of this course is to reskill graduates coming from non-IT areas, to increase the supply of talent for IT companies, as well as to accelerate the attraction of IT investment in the Minho region. This course provides training in the area of software development.<sup>v</sup>
5. *SwitCH* (Oporto Tech Hub and ISEP, the Oporto Institute of Engineering), is a requalification programme for those who are interested in acquiring competencies and skills on software development “for a full and fast integration into the job market as an IT professional”. Its target public is young graduates (with a bachelor’s degree), with or without STEM background.<sup>vi</sup>
6. The *Programa Formação-Acção* (Training-Action Programme) for SMEs, involves several Portuguese institutions and it is an innovative methodology that combines training in classroom, action in the companies and individualised consultancy, aiming at the development of the managers competences to enhance internationalisation and HR qualifications.<sup>vii</sup>
7. The *Qualifica Programme* (sponsored by the National Agency for Qualification and VET), targets low educated adults.<sup>viii</sup>

## CYPRUS

### GRANTXPERT CONSULTING LIMITED

In Cyprus there are no training programs at the moment that can be directly related to Industry 4.0. There are training options where Industry 4.0 as a topic can be implied, but there is no explicit program at the moment. The focus group participants, highlighted the fact that Cyprus does not have a real heavy industry, hence there is obviously no need to develop such course or programs that focus on Industry 4.0. There is a gap between what is described in theory about Industry 4.0 and how it really translates into practice. The focus participants emphasized that training programs on Industry 4.0 are, and should be related to the development of skills that are transferable in the actual industry. A start-upper might have the need to follow a program like the one that our consortium is developing, but this will not get them to the industry necessarily.

The participants suggested that our consortium needs to define better the connection between digital skills and Industry 4.0 as now this connection is not that obvious. Moreover, there should be an umbrella module amongst the modules we will be developing, who will explain the entire Industry 4.0 concept and why a start-upper should become interested in this.

As for following the VET training route, it needs to be noted that this is also not an option in Cyprus, as most programs occur through universities or accelerator/incubator programmes. Unless you have a start-up business idea that you wish to develop through an incubation/accelerator programme, or being a university student with a would-be entrepreneur aspiration, there are no real options for the training of start-uppers.

Therefore, this is a major gap in Cyprus that needs to be addressed immediately. Relevant to the course that we will be developing, i.e. Circular Economy in your start-up, there is only one organisation in Cyprus who is developing relevant content at the moment. Chrysalis Leap (<https://chrysalisleap.com/>) develops content and cases, and although there is no structured program at the moment, discussions and early training material are provided to interested start-ups. Our expert invitee referenced the availability of EU and international programmes, which can be discovered online and attended either online or physically. Yet, he highlighted that since there is no ecosystem/community that promotes Circular Economy on a country level, dissemination of these programmes, becomes even more difficult. From our project's perspective, this can be a good opportunity to promote our module amongst the start-uppers community in Cyprus, thus impacting the creation of this Circular Economy hub.

Lastly, the focus group participants agree that as a consortium we need to show the real connection between Circular Economy and Industry 4.0, as they believe that the connection is not so evident.

2) What are the examples of good practices dealing with digital entrepreneurship competences with a focus on innovative ways of outreach and delivery of learning activities?

## POLAND

### RZESZOW REGIONAL DEVELOPMENT AGENCY / DANMAR COMPUTERS

In the context of starting a business (innovative or not), which in any way is subsidized from public funds, it usually requires going through various training paths.

#### **A. Academy of Managerial Education** - educational cafeteria for high school students

a. Cafeteria is a free economic education project addressed to 1,000 students from all over Poland. As part of the program offer, high school students can take part in 50 educational events implemented in such forms as: multimedia films, e-learning lectures, discussion forums, chats, competitions and online business consulting. All classes are conducted online by SGH experts.

b. Cafeteria participants will be able to gain and deepen their knowledge within five thematic areas: financial business activities, strengthening competitive advantages, building the company and product image, human capital management and international business relations. For participation in classes students receive points, and the most active have a chance to win prizes. Participants who complete the project will receive diplomas.

c. The opportunity to gain valuable knowledge, make contacts with students from all over Poland who are interested in entrepreneurship, contact with experts and SGH academic teachers - these are just a few reasons why you should participate in the project.

#### **B. Starting platform: Start in Podkarpackie**, Financing goal: Developing your idea into an innovative product or service in cooperation with experts.

a. Support is the incubation program, which consists of two types of services - basic and specialized. Specialized services relate to the specific technological and business needs of individual start-ups. They are not limited by a closed catalogue, therefore the start-up has a chance to receive tailor-made services. The result of this process should be a prototype and business model of the enterprise.

b. Incubation is a period of intensive work on developing your idea for the MVP phase. The Start Platform: Start in Podkarpackie is divided into several stages:

c. At the end of the assessment, the start-up will receive a set of recommendations from the Panel of experts that will be used when preparing the individual incubation plan.

d. Each start-up will cooperate with the Incubation Manager with whom they will jointly develop an individual incubation plan. The plan may be modified during its implementation.

Details of the incubation plan will also be discussed with industry experts who will help tailor the work to the specifics of the industry.

f. As part of incubation, work will be carried out to create MVP, but other services will be offered, e.g. Start Link - connecting start-ups with people who would like to work in a start-up, or consulting created advertising materials.

g. After the process is completed, the Incubation Manager will prepare a report from incubation. This report is a record of the start-up's development history from the beginning of incubation to its end and the progress that has been made by the team.

h. Who can receive funding?

i. Each originator (team of originators) who will set up a business in one of the voivodships of Eastern Poland: Lublin, Podkarpackie, Podlasie, and Świętokrzyskie and Warmian-Masurian Voivodeship

**C. PARP Academy project** - online training portal of the Polish Agency for Enterprise Development with free e-learning courses for start-ups, small and medium-sized companies. The most popular courses (in terms of the number of enrollments) are 'How to set up your own business', 'GDPR in SMEs' and 'Sales management'. Among the courses that are still awaiting launch, the most enrolled are "Managerial Skills", "Interpersonal Skills" and "Personal Skills". Users can also propose the launch of new courses not yet planned at the Academy. The proposals include "Marketing communications", "Sales techniques" and "Business plan". Users vote in great numbers for new courses, which shows that the Academy has great potential for further development. As planned, new trainings are systematically added. The site is easy to use and available to all users after logging in.

a. The learning process at the PARP Academy does not end with the closing of the course. The portal is supplemented with numerous support materials, and in the future is to enable contact with the expert community.

b. In the future a mobile application will be created that will allow you to play courses in off-line mode. To create an account, only the first name, last name, e-mail address and password are required.

## DANMAR COMPUTERS

### Internet of Things in entrepreneurial practice

**Good practice 1. IoT Application with ThingWorx Training Course** - PTC ThingWorx is one of the largest application development platforms for the Internet of Things (IoT).

In this instructor-led, live training, participants will learn how to use ThingWorx to rapidly develop an application for use in smart, connected sensors, devices, and products.

**By the end of this training, participants will be able to:**

- Model, connect, analyze, and build an IoT application
- Enable devices to communicate with you and each other through RESTful web services
- Analyze data related to an IoT application

*Source: <https://www.nobleprog.pl/en/cc/thinkworx?participants=1&how=public>*

**Good practice 2. Industrial IoT (Internet of Things) for Manufacturing Professionals Training Course** - An advanced training program covering the current state of the art in Internet of Things in Smart Factories. Main objective of the course is to introduce emerging

*Programme: Erasmus+*

*Key Action: Cooperation for innovation and the exchange of good practices*

*Action Type: Strategic Partnerships for vocational education and training*

*Project Number: 2019-1-PL01-KA202-065209*

technological options, platforms and case studies of IoT implementation in smart factories for manufacturing sectors.

This training is intended for a technology and business review of an emerging industry so that IoT enthusiasts /entrepreneurs can grasp the basics of IoT technology and business.

Source: <https://www.nobleprog.pl/en/cc/iotmp?participants=1&how=public>

**Good practice 3. IoT (Internet of Things) - Technology Overview** - The aim of the training is to provide participants with knowledge about IoT, development trends and to show them what and how to collect data and what they can use it for.

#### Course Outline:

- **Introduction - IoT (Internet of Things)** - outline of the concept, area of application trends; smart phone, smart home, smart city, smart world
- **IoT** - security, power supply type, data collection - cloud, communication protocols (HTTP, MQTT), global benefits, scalability, threats
- **Hardware** - 8 bit - AVR, PIC, ARM and related, Raspberry PI/BeagleBone, Arduino
- **Example implementation of a temperature sensor** - Description of the components, connection + software, sending data to a remote server, analysis of data from the sensor network

Source: <https://www.nobleprog.pl/en/cc/iottech?participants=1&how=public>

## SLOVAKIA

### TECHNICAL UNIVERSITY OF KOSICE

#### *Cybersecurity in your start-up:*

**Good practice 1:** Courses offered by LogRhythm, USA: How to build a SOC with limited resources:

The suggested syllabus:

- Cyber-attack life-style
- What makes a SOC effective (people, processes, technology)
- How to estimate SOC costs and savings
- Cost comparisons of various SOC staffing models
- Steps for building a SOC with limited resources (develop a strategy, design the solutions, create procedures, processes and training, prepare the environment, implement the solutions, deploy end-to end-use cases, maintain and evolve).

**Good Practise 2:** Sfridoo's training on the Circular Economy, Italy

The suggested syllabus:

- what Circular Economy is;

- Circular and Linear Economy model;
- principles and advantages of the Circular Economy;
- European and international best practices;
- industrial symbiosis;
- methods of collaboration for Circular Economy projects;
- Europe and the policies supporting the Circular Economy;
- closure of the cycles;
- Circular Economy as a competitive advantage for star-up.

**Good Practise 3: Internet of Things (IoT) Entrepreneurship offered by ITU Academy, Switzerland**

- Introduction to IoT: basic principles of entrepreneurship, innovation and digital transformation;
- Business features and users' benefits: the role of IoT within the digital transformation of society and start-up companies;
- IoT business models/selling;
- IoT solutions: the differences between IoT and non-IoT businesses;
- IoT - ethics, privacy, and regulations

## LITHUANIA

### SOCIAL INNOVATION FUND (SIF)

#### *A Unique Entrepreneurship Programme in Kaunas*

Promotion of new ideas and attention to the community of local start-up businesses is one of the priorities of Kaunas city. Therefore, the biggest start-up program in Kaunas region was created and now is known as Kaunas Startups. A unique program aims to raise the level of entrepreneurship, provide necessary skills to launch and operate one's business, consolidate different parts of the start-up ecosystem, and prepare start-ups for funding rounds. Also, to increase the attractiveness of Kaunas city as a destination for startups from other regions of Lithuania and abroad. All of this is possible because of funding from Kaunas municipality and "Kaunas IN" organizational skills.

The program consists of two parts: various networking events like lectures, workshops, discussions, hackathons, experience sharing sessions, etc. taking place all year long, and intensive accelerator (October-December). Together, these two parts of the program allow innovative ideas of all sorts to grow and make this a perfect place to start a career in your start-up. Kaunas is the rising star among start-up ecosystems. It is the only municipality in Lithuania offering pre-acceleration programme and a series of networking events to start-ups free of charge. Kaunas IN has officially launched the 2019 Kaunas Start-ups programme today, which aims to help start-ups and entrepreneurial individuals develop new businesses. This year the programme focuses on early-stage ventures.

"Support for start-ups in Lithuania is growing, but it is crucially important to support early-stage companies. Professional consultations and experts' advice help entrepreneurs build scalable products and create global companies from day one", says Tadas Stankevicius, the



Head of the Business Division at Kaunas IN, the organisation behind Kaunas Startups programme.

#### **A unique programme to develop business skills**

Fresh and upgraded Kaunas Start-ups programme is aimed both at start-ups that are already seeing traction in their businesses as well as beginning entrepreneurs. Kaunas Start-ups will help participants avoid the most common mistakes that lead young companies to failure and will equip with the required skills to build successful businesses. Based on their priorities and time availability, teams can choose to either attend a number of training and networking events or join an 8 week long pre-acceleration programme, where they will receive professional mentorship.

The pre-accelerator's teams will have access to more than 40 mentors with international experience, such as Wallace Green, who has more than ten years of experience in helping strategic projects grow, also Patrick Collins, the head of Prospect Labs, leading sales services provider for start-ups, and others.

#### **The start-up oasis**

Kaunas is becoming internationally recognized as an attractive destination for start-ups. Among the city's advantages is the developed infrastructure, available co-working spaces, a talent pool of students with a tech background able to answer nowadays technological challenges and offer innovative solutions. Coupled with the support available to start-ups, these conditions create a huge potential for the growth of Kaunas ecosystem.

This is the fifth year that Kaunas city municipality is providing support to the start-up ecosystem. Noticeably it was one of the driving factors behind Kaunas taking an 114th place from 1028 cities from all over the world in StartupBlink's Global 2019, the global start-up city ecosystem ranking.

#### **Last years' achievements**

Kaunas city municipality's entity Kaunas IN responsible for tourism, business promotion and marketing projects, hosted the first acceleration activities programme for the local start-ups in 2018. In 8 weeks, 11 teams received over a 100 hours of mentorship by an international team of experts. The alumni of the accelerator have already received over 60 thousand Euros of investments. The initial success of the last four years of the programme has led to its continuation in 2019.

Kaunas will be hosting more than 15 open events during the Kaunas Start-ups programme and more information can be found by following this link: <http://kaunasin.lt/kaunas-start-ups/>.

The reference: <http://kaunasin.lt/kaunas-start-ups/>

### **1. Business pre-acceleration program Evolut 4.0 in Kaunas Kaunas Science and Technology Park**

*Evolut 4.0 program is designed for early stage startups to develop an innovative product, increase sales and prepare for investment phase. The knowledge and experience gained through the pre-acceleration program will help accelerate business growth.*

*The program consists of a methodology developed by combining worldwide recognized and widely used business value, customer profile refinement, development strategy, sales*

Programme: Erasmus+

Key Action: Cooperation for innovation and the exchange of good practices

Action Type: Strategic Partnerships for vocational education and training

Project Number: 2019-1-PL01-KA202-065209



activation and other business process enhancement tools: Business Model Canvas (CANVAS), Value Proposition Under NABC, Technology Development Plan, Design thinking and others.

The practical training cycle consists of 9 practical training sessions which are carried out in the period of two months. They analyze various aspects of business development, including a minimum viable product (MVP) proposition and financial strategy. At the end of the training cycle, members of startup teams define their customer profile, the market in which they will operate and their main competitors. Teams also prepare Pitch Deck presentations and future steps to attract investments: venture capital, business angel funds, or other financing instruments. Startups are supported by business mentors who provide valuable insights and experience. Promising teams already entering the market are accompanied by innovation experts working with both major Lithuanian businesses and university researchers taking the first steps in inventions commercialization.

The reference: <http://kaunomtp.lt/evolut>

## 2. Kaunas Technology University Startup Space

Active work with innovative start-ups, discovering a potential of young entrepreneurs and encouragement for them to make their dreams come true.

**Offer for start-ups:**

- Team coordination, consultations, mentorship
- Office
- Training, events
- Assistance in search of partners

**Incubation program as tool of training and mentoring consists from 4 stages:**

- Development of business idea
- Development of prototype
- Development of the company
- Growth of the company

**Areas:** biomedicine, IT, chemistry, education, **electronics**, physics, **engineering**, mechanics, social busines, etc.

The reference: <https://startupspace-en.ktu.edu/>

## 3. Vilnius University (consulting):

Vilnius University encourages the members of academic community to establish companies for the development of R&D solutions that were created when performing R&D activities at Vilnius University.

May you consider establishing innovative enterprise to commercialize R&D based idea, contact the Innovation Office of Science and Innovation Department. Innovation Office provides consultations on:

- intellectual property protection and management,
- licensing of technologies,

- *start-up team formation,*
- *partner search,*
- *raising of investments and funding,*
- *innovative business development,*
- *science-business collaboration issues.*

The reference: <https://www.vu.lt/215-bussiness/services/6567-consulting-on-business-start-up-and-development-issues>

#### 4. Industry 4.0 Driver License (paid course)

- *Public Institution InTechCentras is the official training representative of German Innovation Center for Industry 4.0 in Lithuania. It is a three-level training course that culminates in a final knowledge assessment exam and an Industry 4.0 driver license.*
- *During the course, you will systematically understand digitization processes;*
- *You will become familiar with specific accesses for your business;*
- *Learn about industry 4.0 projects already implemented;*
- *Participate in intensive exchanges with other participants and lecturers;*
- *Attend an interactive workshop; I - KURSAS - Skaitmeninės industrijos sąvoka*

Course price 950 Eur + VAT.

More useful links and references:

<https://digitalacademy.lt/produktu-kategorija/startuolis/>

[https://www.enterpriselithuania.com/uploads/media/568a4ffd0ac6c/Mokym%C5%B3%20programa%20Nr.%20A-VD-15-1\\_Startup%20school.pdf](https://www.enterpriselithuania.com/uploads/media/568a4ffd0ac6c/Mokym%C5%B3%20programa%20Nr.%20A-VD-15-1_Startup%20school.pdf)

<https://www.enterpriselithuania.com/en/services/export-leaders-programme-sparnai/>

<http://kaunasin.lt/solutions-dictated-need-professionals-non-formal-education-corporate-academies/>

<http://pathwaysforemploy.eu/wordpress/?p=106>

[http://www.kidventure.eu/uploads/1/6/2/1/16214540/kidventure\\_framework\\_may2017.pdf](http://www.kidventure.eu/uploads/1/6/2/1/16214540/kidventure_framework_may2017.pdf)

<https://springboardcourses.ie/details/7105>

<https://www.canadalearningcode.ca/digital-skills-for-entrepreneurship/>

## SPAIN

### Sea Teach S.L.

There are plenty of good practices all around Spain. The most relevant are carried out by local administrations.

**A. Course: Strategic positioning on the internet. Offered by Palma Activa. Location: Palma.**

The aim is to provide an introductory and global vision of marketing and positioning on the Internet, especially on the actions that any professional or SMEs can carry out to promote and consolidate its start-up. Contents:

- Online Marketing plan: strategy and goals

Programme: Erasmus+

Key Action: Cooperation for innovation and the exchange of good practices

Action Type: Strategic Partnerships for vocational education and training

Project Number: 2019-1-PL01-KA202-065209

- Web positioning (SEO)
- On-line advertising: Google Adwords (SEM)
- Content Marketing
- Social Networks
- Google Analytics

**B. Course: An introduction to Big Data. Offered by Madrid Emprende. Location: Madrid**

The goal of this course is to provide training on how to use Big Data as a basic tool in the start-ups businesses. Methodology is based on the presentation of basic theoretical concepts, problem solving, lab practices and case studies. Contents:

- Business strategy based on Big Data
- Phases in the introduction of Big Data in the business strategy of organizations
- Concept, strategies and management of the Customer Relationship Management (CRM) process.
- KPI's analysis associated with the implementation of a business strategy based on Big Data.

**C. Programme: ProAcció 4.0: Take advantage of Industry 4.0. Offered by Acció. Location: Barcelona.**

A programme for helping SME's to find a pathway for the digital transformation of their companies. The organization provides training and funding for start-uppers and entrepreneurs from all over Catalonia. They also organize informative sessions and events for start-uppers to guide them in a short-term period. Users can also benefit from a digital self-diagnosis tool that evaluates their level of digital competences.

## PORTUGAL

### Mindshift Talent Advisory Ida

1. **The Project I9G** is the result of a partnership established, in February 2019, between the Minho University and several local companies. Its aim is to create an Industrial Academy that work in areas as research, development and innovation, human potential, productive capacity and industrial property, aiming at promoting knowledge transfer from the academia to the economy.<sup>ix</sup>
2. **The Siemens i-experience Centres 4.0** (Alfragide and Oporto) are digital solutions incubators and learning factories devoted to testing and development of projects in the Industry 4.0 area.<sup>x</sup> The intention is to boost the liaison amongst companies, research entities and local start-ups.<sup>xi</sup>
3. **The IDC Executive Insights Programs** is the tangible outcome of a partnership established between the IDC company and several Portuguese universities to support executives to face the challenges of the 4<sup>th</sup> Industrial Revolution. It provides several courses to provide training and advise to executives on Digital Transformation issues.<sup>xii</sup>

## CYPRUS

### GRANTXPERT CONSULTING LIMITED

Below we present the national examples of good practices of digital entrepreneurship competences building, as these have been discussed by our focus group participants. The focus group participants also agree that EU Funded projects are perhaps amongst the most successful example of developing digital entrepreneurship competences with a focus on innovative ways of outreach and delivery of the learning activities, and should be reinforced. To date, the whole Erasmus+ community cannot transform projects into real programs after their funding duration completion, and perhaps EU is missing a whole new opportunity

to have a real impact through these projects.

1. **ARIS Incubation & Acceleration Programme:** through a 26-week programme, start-uppers can gauge on ideas proposing the development of products and services in the fields of Artificial Intelligence and Machine Learning, the Internet of Things, Cybersecurity, Blockchain, Cloud and Open Data (horizontal priorities).
2. **IDEACy - The start-up Programme:** with its accelerator and incubator programme, IDEA hosts start-ups for a period of 9 months, offering them the highest quality of training, workshops, mentorship, consultation and professional services so as to turn their innovative ideas into viable businesses. Through promoting entrepreneurial activities and supporting the establishment and growth of start-up companies, it contributes to job creation for youth and facilitates their transformation into innovative, international and sustainable businesses. While giving great emphasis on the entire spectrum and peripheral activities that support innovation in general, IDEA is a strong part of the work that promotes innovation on the national level.
3. **Gravity Ventures** - although Gravity does not have a structured programme, it facilitates each start-up for a period of 24 months to receive a pre-seed funding, access to working space and technical infrastructure for the whole duration of their stay, mentoring from their resident and guest mentors as well as the opportunity to travel and participate to a number of international start-up events, i.e. Websummit, Slush etc. Gravity is also impacting the development of digital skills and digital entrepreneurship in Cyprus.
4. **C4E** - the role of the Centre for Entrepreneurship (an initiative from the University of Cyprus) is to promote the culture of entrepreneurship in the academic community of the University of Cyprus: students, young researchers, academics, administrative staff and graduates. The overall goal is the development of a healthy, innovative business ecosystem in Cyprus that can exploit research results, infrastructure and expertise available in the University, in order to compete with the international business environment.

### 3) What are the strategies of validation of start-uppers skills and abilities?

#### POLAND

##### RZESZOW REGIONAL DEVELOPMENT AGENCY

No such confirmation of knowledge and skills - only training completion certificates.

##### DANMAR COMPUTERS

Every entrepreneur, when setting up a start-up, has to think carefully about what legal form of activity he should take. There are several possibilities, e.g. using the Entrepreneurship Incubators, civil partnership or limited liability company.

The most popular organisational and legal forms of conducting business activity for start-ups:

- partnerships
- private limited company
- co-partnership
- public corporation

All aspects of the start-up law must be carefully considered and planned so that we can be sure that we are operating legally and that our idea will not be used by others who are not authorized to do so.

There is also a new act introducing the Prosta Spółka Akcyjna (PSA) - Strengthening the development of start-ups in Poland, increasing their competitiveness and inhibiting the "export" of Polish ideas abroad. The amendment to the Commercial Companies Code, which establishes a new type of company, is to make it "easier for Polish innovative entrepreneurs to set up a company that meets their specific needs and obtain the capital needed to develop their business". The Act is the last solution from the package of 100 changes for companies. It will take effect on 1 March 2020.

The main features of PSA are: no entry barriers, fast electronic registration, simplification and electronicisation of company procedures, great freedom and flexibility in determining the types of shares and company rules.

#### SLOVAKIA

##### TECHNICAL UNIVERSITY OF KOSICE

There is no special strategy for the validation of skills and abilities. In general, The Ministry of Education is the single national level authority essentially responsible for education. The ministry is responsible for the elaboration of all education policies making

use of the services of directly managed institutions of which the most important ones are as follows:

- The National Institute for Education,
- The State Institute of Vocational Education,
- The Institute of Information and Prognoses of Education,
- The Research Institute for Child Psychology and Pathopsychology,
- Five Methodological and Pedagogical Centres.

Other ministries play a limited role, e.g. in support of specific secondary VET schools (health, police, justice/warder, military) within their professional scope.

## LITHUANIA

### SOCIAL INNOVATION FUND SIF

Validation in Lithuania is an integral part of the lifelong learning system and is covered by national strategies and programmes. Qualifications at all levels of the national qualifications framework may be acquired either through formal education programmes or through gaining professional experience or by independent study (Lithuanian Government 2010). Lithuania has multiple legal frameworks covering validation. In vocational education and training (VET) and higher education (HE) any learning or working experience may be assessed and recognised. There is no evidence that validation is used in general education. The main changes since 2016 can be grouped into two categories:

1. Amendments in legislation. The main ones are as follows:

- the amended law on employment (the Lithuanian Parliament 2016) for the first time introduced validation of non-formal and informal learning as one of the measures supporting learning<sup>1</sup>;
- the amended law on VET introduced validation of non-formal and informal learning as one of the key aims of the VET system (Lithuanian Parliament 2017);
- the amendment of the procedure for recognition of prior learning attainments (Ministry of Education and Science 2018).

2. The implementation of different projects, mainly Erasmus+, aiming at creation of online validation instruments (e.g. open digital badge systems), raising awareness on validation, supporting validation practitioners.

Since 2012 significant progress has been achieved in validation of non-formal and informal learning. Lithuania has put in place validation arrangements which make it possible to assess non-formal or informal learning in VET and HE. The skills and competences acquired outside formal education are assessed against standards or programmes used in formal education. The results of validation are recognised by the education system and lead to formal qualifications which are linked to the national qualifications framework. Persons wishing to formalise their non-formal and informal learning must apply to an appropriate VET or HE provider. Each of them has an internal quality system which also applies to the assessment of learning outcomes.



The arrangements for validation of non-formal and informal learning in VET and HE include all elements (i.e. identification, documentation, assessment and certification) as specified in the Council recommendation<sup>2</sup>.

However, there is still room for improvement. The validation arrangements do not cover all sectors of the education system. Although the level of awareness about the validation of non-formal and informal learning amongst the public is rather poor, it is not currently among strategic priorities and lacks necessary funding.

Resources: Beleckiene, G. (2019). *European inventory on validation of non-formal and informal learning 2018 update: Lithuania*.  
[http://libserver.cedefop.europa.eu/vetelib/2019/european\\_inventory\\_validation\\_2018\\_Lithuania.pdf](http://libserver.cedefop.europa.eu/vetelib/2019/european_inventory_validation_2018_Lithuania.pdf)

## SPAIN

### Sea Teach S.L.

The general overview of validation procedures is well known in Spain. With the RD 1631/2006, in the first additional disposition, it was established that the educational administrations have the responsibility to develop procedures for recognition of prior learning acquired through work experience or non-formal education.

Some exemptions for (part of) VET programmes are possible by means of validation of competencies acquired through work experience. The Government, in agreement with the authorities of the Autonomous Communities, established conditions for the recognition of competencies acquired through experience towards some modules of training, for those who wish to follow formal VET courses (both medium and higher levels).

In Spain there are two strategies concerning Start-uppers knowledge/skills/competences and its legal status.

**A. Industria Conectada 4.0:** A strategy promoted by the General Secretariat of Industry and SMEs (SGIPYME) of the Ministry of Industry, Commerce and Tourism. The aim is to increase the added industrial value and the level of qualification of employees within the sector. It also promotes a new tailored model for the Industry 4.0 by developing digital solutions in local companies and supporting the Spanish Industry to increase exportations. The strategy provides a toolset that aims in validating the digital knowledge, skills and competences of start-uppers. These tools are as follows:

- HADA: An advanced digital self-diagnostic tool
- Industria Conectada 4.0: a program that provides a digital transformation plan to companies.
- Collaborative Environments: Digital Innovation Hubs, Innovative Business Groups and a Connected Industry Platform 4.0.
- Plant 4.0 Start-up incubator
- Technology Demonstration Reference Center 4.0.

**B. Draft Bill ‘Anteproyecto de “Ley de fomento del ecosistema de Startups” 26.2 de la ley 0/1997 de 27 de Noviembre’:** This draft Bill aims at giving the start-ups companies an



adapted legislation and at converting the Spanish entrepreneur structure into an innovative ecosystem. The document also notes the need of providing technological training to start-uppers in order to run a successful company. It is also mentioned the need of providing grants to big companies in order to integrate the start-up activity in their production-chain.

## PORTUGAL

### Mindshift Talent Advisory Ida

Portugal launched, in 2005, the *New Opportunities* programme to introduce a new methodology for the recognition, validation and certification of non-formal and informal learning.

In 2017, the *Qualifica* programme succeeded to the *New Opportunities*, equally valuing lifelong learning and the recognition of educational and/or professional competences acquired by adults throughout their life in formal, informal and non-formal contexts

Currently, across the country, the RVCC (Recognition, Validation and Certification of Competences) processes are carried out by the *Qualifica Centres*, integrated in the National Qualifications System.

At the end of the process, every candidate must produce a portfolio, gathering biographical, curricular, professional and any other evidences to highlight the knowledge and skills relevant for the RVCC.

For the RVCC professional, students must demonstrate technical knowledge in the professional profile that they intend to apply for a certification, in accordance with the related qualification referential available in the National Catalogue of Qualifications.<sup>xiii</sup>

## CYPRUS

### GRANTXPERT CONSULTING LIMITED

The current validation process is limited to the official process of training programmes validation, running

under the responsibility of the Human Resource Development Authority of Cyprus. There should be a better

strategy for non-formal learning on a country level, but it is not existent at the moment.

4) What are the models of recognition and validation of the competencies gained in formal and non-formal education in partner countries?

## POLAND

### RZESZOW REGIONAL DEVELOPMENT AGENCY

The mere issue of a certificate or certificate is not unequivocal with qualification. In order for a participant to obtain qualifications, what he has learned must be validated, e.g. with an exam confirming the acquired qualifications. Unfortunately, entrepreneurship-related courses are not certified in Poland. Only validation of competences is carried out. Most often it occurs according to the following diagram - according to the Guidelines in the scope of monitoring the progress of material implementation of operational programs for 2014-2020, i.e.

- Stage I - Standard - a standard of requirements should be defined, ie learning outcomes that will be achieved by participants as a result of carried out training activities;
- Stage II - Assessment - after completing the support given to a project participant, the learning outcomes should be verified on the basis of developed assessment criteria (eg external examination, test, assessment conversation);
- Stage III - Comparison - after completing the support given to a participant, the obtained results of Stage II (assessment) should be compared with the adopted requirements (learning outcomes specified at Stage I).

Conducting training in accordance with the above stages will lead to confirmation of the participants' acquisition of competences.

### DANMAR COMPUTERS

Validation of learning outcomes achieved in non-formal and informal education is related to mechanisms applied in formal education. Intensive work has been underway in Poland for several years to introduce changes in these areas. This involves not only the development of a system for validation, certification and transfer of learning outcomes and, consequently, of qualifications, but also the revision and standardisation of terminology.

The fundamental rule in the validation process is assessing whether a person knows, understands and is able to do what is specified in the description of a qualification.

In Cedefop's 'European guidelines for validating non-formal and informal learning' (2009) (updated in 2015), several perspectives are presented: individual, organisational, national, and European.

The validation process includes the following elements:

- identification of learning outcomes (LOs);
- documentation of LOs;
- assessment; and certification of the LOs achieved in the form of a qualification, credits (ECTS, ECVET) leading to a qualification, or in another accepted form.

Poland does not yet have a single coherent system for the validation of LOs achieved in non-formal and informal education. Existing mechanisms are applied in various sectors and related to various practices and validation processes. Some of them have been in place for many years now, others are innovations adopted from abroad, and still other have been introduced on a pilot basis.

Between 2011 and 2012, the Educational Research Institute (Instytut Badań Edukacyjnych) carried out a 'Study on the procedures applied for the validation of LOs achieved in non-formal and informal education' (commissioned to Coffey International Development). The study covered 5 areas: construction industry, ICT services, service industry, automotive industry and financial services. The procedures applied in this area were presented from the perspective of participants and their employers.

*Source:* [https://eacea.ec.europa.eu/national-policies/eurydice/content/validation-non-formal-and-informal-learning-52\\_pl](https://eacea.ec.europa.eu/national-policies/eurydice/content/validation-non-formal-and-informal-learning-52_pl)

## SLOVAKIA

### TECHNICAL UNIVERSITY OF KOSICE

An overview of the system for evaluating the results of non-formal education in Slovakia is available on the Eurydice website. National Qualification Framework in the Slovak Republic is one of the outputs of the project „Creation of National qualifications system“ (ESF, 2013 - 2015 ). National Qualifications System contains 1,000 qualifications that have a defined qualification standard (knowledge, skills, competencies), evaluation standard and methodological guidelines. Strategy for Lifelong Learning 2011 and Action Plan for Lifelong Learning 2011 are the basic frameworks for validating the results of non-formal education in Slovakia.

MESRS has established Information system for Further Education where the eligible institutions for verifying professional competences in the framework of individual qualifications are listed. Currently there are 29 qualifications. Competencies acquired in the youth work are confirmed in the framework of the Act on Youth Work Support.

The responsible institution is the MESRS through the Accreditation Committee for Youth Work (Akreditačná komisia pre špecializované činnosti v práci s mládežou).

Accredited educational establishments issue a certificate of acquired professional competence for the participants in the educational programs, upon successful completion of the examination.

Professional competence to perform specialized activities in the field of youth work is a set of expert knowledge, skills and habits obtained by study at an educational establishment or by a professional practice.

National Qualifications System is the basis for assessing the quality of competences acquired in the process of non-formal education and informal learning.

- a public register of 1000 qualification cards with a description of qualification and evaluation standards,
- qualification and evaluation standards will allow comparison of learning outcomes achieved through different learning pathways,
- facilitate comparisons of qualification levels in the Slovak Republic with other EU countries,
- the links between formal and non-formal education,
- qualifications in the system are described in a form of standardized learning outcomes.

## LITHUANIA

### SOCIAL INNOVATION FUND (SIF)

In vocational education, the procedure for competences assessment (Ministry of Education and Science, 2015) defines that a person wishing to formalise learning outcomes relevant to qualifications at EQF level I-V shall apply to an appropriate VET provider. The applicant must submit a portfolio, which includes documented evidence of learning outcomes acquired outside formal education. The VET provider assesses the skills and knowledge of the applicant based on VET standards and relevant formal VET programmes. Furthermore, the applicant and VET provider agree on a timetable of additional training if necessary and a final qualification exam. Final assessment of the qualification is the responsibility of specifically-accredited institutions. Individuals who successfully pass the exam are awarded a formal qualification certificate (from 2015 - VET diploma).

There is no specific awareness raising campaigns in Lithuania. Generally, awareness raising and recruitment is the responsibility of formal VET and HE providers. However, the publicly available information on validation options is rather poor. In the case of HE, the procedures for the validation of non-formal and informal learning are placed on the website of the Ministry of Education and Science. In addition, individuals can find this

information on the websites of HE providers. Concerning VET providers, there is almost no publicly available information with regard to the validation process.

Usually information, advice and guidance are delivered to validation users after they apply to a VET or HE provider. The VET or HE provider informs the applicant about the validation process. The validation process in HE includes four stages, namely: information, consultation, assessment and decision (Ministry of Education and Science, 2017). The first stage is intended to familiarise the applicants with the validation principles, procedures, possible assessment results, and studies according to individual needs. Information is free of charge. If the applicant further decides to undertake validation, then the consultation stage starts. The HE institution appoints a consultant who helps the applicant to prepare for the validation of non-formal and informal learning. The cost of consultation is included in the fee for validation.

Usually, applicants are required to pay a certain fee for the validation process. The education provider (VET or HE) decides on how much to charge for the validation. According to the overview on VET status (KPMPC 2017) VET providers have difficulties in the taxation of validation services. The conversation with VET providers reveals that validators do not receive any additional money for the validation process.

*The data on validation users is fragmented and currently is not collected on a national level. Some available information suggests that one VET provider delivers validation services for at most 3-4 individuals per year. Most often these are the persons aged between 25-40 years old, and have HE qualifications and working experience abroad (e.g. waiters).*

*Since 2017 according to the data from the labour exchange, 60 unemployed people participated in the validation of non-formal and informal learning and 30 of them received qualification recognition.*

**Some efforts to raise awareness on validation matters could be observed at project level.** For example, under the Erasmus+ project, ACE - Lifestyle Entrepreneurship (2015-2017). Lithuania together with partners from United Kingdom, Bulgaria, Poland and Cyprus developed training material and ICT tools for adult educators-practitioners including the module 'Creating awareness on validation of the acquired competences':

<http://www.ace-erasmusplus.eu/modules/5/index.php?lang=en>

The aim of *Module V Creating awareness on validation of the acquired competences* is to provide insights concerning the European context for implementation of validation and recognition of non-formal learning achievements, with a special emphasis on validation of the competences obtained by LSE's learners.

### **ERASMUS+ Programme Project ADUNOOC**

Created training program to develop competences of low skilled and qualified adults.

The main aim of this outcome is to develop competencies of low skilled and qualified adults in order to help them to improve learning outcomes of their training programs (social and civic, entrepreneurship and digital).

Pre-testing and post testing with possibility to receive the Certificate is implemented.

The reference: <https://adunoo.ndma.lt/open%20courses>

Lithuanian Universities and Colleges provide possibility to validate knowledge and skills acquired through non-formal and in-formal education:

**Vytautas Magnus University (VMU)** from Kaunas, Lithuania, implemented procedures for the validation and recognition of non-formal and informal learning.

*Procedure for the assessment and recognition of competences:*

- The candidate completes the registration form on the VMU website;
- The candidate will be contacted by a specialist;
- After talking to the specialist and the consultant and finding out whether their aspirations and capabilities match, the candidate writes a request for a procedure and a contract is signed;
- The candidate prepares a portfolio of competences in consultation with a specialist and expert;
- The prepared portfolio of competences is evaluated and the final decision on the recognition of competences is made by the lecturer-expert of the chosen study subject;
- In the event of a positive decision, the candidate shall be issued an academic certificate.
- Participation in the competence assessment and recognition procedure is free for VMU students and students who intend to study at VMU. Other candidates are paid for the procedure.

The assessment and recognition of non-formal and informal competences of candidates is carried out according to the procedure approved by Vytautas Magnus University.

The reference:

<https://www.vdu.lt/lt/studijos/neformaliuju-kompetenciju-pripazinimas/>

**Vilnius College of Technology and Design** offers services in the following areas of competence recognition:

- experiential learning acquired through work activities;
- experiential learning acquired through unpaid or voluntary work;
- experiential learning acquired during leisure;
- non-certified learning acquired through self-study;
- certified study abroad (internships, courses);
- certified on-the-job training

The reference:

<https://vtdko.lt/index.php/visuomenei/kompetenciju-pripazinimas/1679-kompetenciju-pripazinimas>

More references and useful links:

<http://www.cambridgeblog.org/2019/02/digital-innovation-entrepreneurship-skills-gap/>

[https://uzt.lt/prof\\_mokymas/neformaliojo-svietimo-ir-savisvietos-budu-igytu-kompetenciju-pripazinimas/](https://uzt.lt/prof_mokymas/neformaliojo-svietimo-ir-savisvietos-budu-igytu-kompetenciju-pripazinimas/)

[https://www.smm.lt/uploads/documents/tyrimai\\_ir\\_analizes/Savi%C5%A1vietos%20pripa%C5%BEinimas\\_GALUTINIS.pdf](https://www.smm.lt/uploads/documents/tyrimai_ir_analizes/Savi%C5%A1vietos%20pripa%C5%BEinimas_GALUTINIS.pdf)

## SPAIN

### Sea Teach S.L.

Following the Spanish strategy, the models of recognition can be divided into 2 big groups.

#### A. Self-diagnostic tools for digital competences

- **Hada:** An advanced self-diagnostic tool designed by the General Secretariat of Industry and SMEs. It allows the free evaluation of the situation/level of digital maturity of a company compared to other organizations in relation to the new industry paradigm 4.0. This tool evaluates the following aspects: • Business and marketing strategy: • Processes • Labour management • Infrastructure • Products and services

- **ACTIVA Industria 4.0:** This program provides a digital situation diagnostic and a transformation plan able to identify digital needs in the transformation process and setting the roadmap for implementation. Demonstration workshops on these technologies are also available.

Link: <https://www.industriaconectada40.gob.es/programas-apoyo/Paginas/HADA.aspx>

#### B. Self-diagnostic tools for start-uppers attitudes

- **Autodiagnostico de actitudes emprendedoras:** An interactive tool that allows start-uppers to complete a questionnaire and then offer them a list of recommendations that will help them be prepared to start their project.

- **DAFO (SWOT analysis):** A tool that enables the entrepreneur to analyse the reality of the company, brand or product in order to make future decisions.

- **Autodiagnostico para acceso a nuevos mercados:** An interactive tool that provides a diagnosis to small and medium enterprises about their situation to start trading abroad (internationalization).

Link:

<http://www.ipyme.org/es-ES/DecisionEmprender/Paginas/DecisionCrearEmpresa.aspx>



## PORTUGAL

### Mindshift Talent Advisory Ida

Created in 2017, the *Qualifica Passport* is an online tool for recording qualifications and competences acquired or developed throughout life, as well for guiding adult learning pathways.

Based on the capitalisation of the learning outcomes already achieved and the competences acquired by the adult, the *Qualifica Passport* simulates several possible qualification pathways for obtaining new qualifications and/or educational and professional progression.

Being a priority of the National System of Qualifications to increase the level of qualification of adults, it prioritises paths for completion qualifications and/or upskilling of adults, as well for the double certification processes. VET courses are suggested according to the highest possible capitalisation of already certified training units and also of credits obtained by the adult in previous training courses.

The *Qualifica Passport* is structured in 5 stages: (i) Registration; (ii) Diagnosis; (iii) Possible paths; (iv) Choose a path; (v) Research VET offer.

The *Qualifica Passport* is a dynamic tool and can be modified, updated and printed at any time.<sup>xiv</sup>

## CYPRUS

### GRANTXPRT CONSULTING LIMITED

There is no valuable feedback from the Cyprus case that answers this question.

## SUMMARY:

- ✓ In some countries, the training programs for start-ups are closely interconnected to general entrepreneurial support training.
- ✓ Some programmes are focused on mentoring activities dedicated for start-uppers by offering them the valuable, expert knowledge and advisory to support them in working on specific challenges.
- ✓ Some programmes are an essential compendium in the chosen area of knowledge (ex. cybersecurity, Digital lifestyle entrepreneurship, digital databases, Internet of Things and many others). The programmes are not the coherent learning system and they exist separately. Many of them concern the digital topics, while in others (important for start-uppers - there are not available).
- ✓ Some of existing courses are offered with using various learning tools: thematic seminars or workshops, training, business training education, professional individual counselling by experts and mentors, practical advice to support the creation and launch of start-ups, online consultancy, participation in international start-ups events, etc.
- ✓ Support for future start-uppers or - more common - future entrepreneurs - is offered with using digital tools of exchange information, mobile devices, modern ICT technologies, Launch initiatives on e-platforms, etc. In this case, the courses not differentiate the start-uppers and entrepreneurs, what would be crucial from the point of view the type of business and its character (start-ups are more risky challenge, operates in high-tech sectors or with a predominance of ICT).

## RECOMMENDATION

- ✓ The offered programme should be focused on better explanation the connection between digital skills and Industry 4.0, but with developing business skills.
- ✓ The programme should be addressed to start-uppers what means that the courses take into consideration the specificity of this kind of work.
- ✓ The programme should consist a coherent path for increasing the knowledge and development concrete skills for start-uppers<sup>1</sup>. Depends on the topic, the programme should enable to take a course at different levels (for various users) or - at minimum - to underline what is important (basic level) and what could be add/ additionally explained (higher level).
- ✓ Due to the target group requirements, the planned course should be enrich with various types of using ICT tools (ex. video, audio, mobile, etc.) ensuring the attractiveness for the user.
- ✓ The programme should be also available on mobile and standard devices and its form should ensure of using it also as in e-learning or blended learning.

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<sup>1</sup> The programme could be a support part of the Startups Acceleration Models available in the Partner's countries. See: Czyżewska M (2018), *Conditions for Creating Effective Startup Acceleration Models to Support Innovative Entrepreneurship in Poland*, „PRZEDSIĘBIORCZOŚĆ I ZARZĄDZANIE” Vol. XIX, Issue 10, part 2, pg. 189-202.

- ✓ Each course should be finished by the certificate with detailed description of learning outcomes, learning path with hours, qualifications and credits (ex. ECTS, ECVET).
- ✓ The programme should ensure the possibility to conduct the digital self-diagnosis that evaluates the level of digital competences.
- ✓ The documents for validation should be adapted to the national requirements.

## Links

- <sup>i</sup> <https://www.iapmei.pt/Paginas/Industria-4-0.aspx> [retrieved: 2020/01/07]
- <sup>ii</sup> <https://www.iapmei.pt/PRODUTOS-E-SERVICOS/Empreendedorismo-Inovacao/Inovacao-e-Competitividade/Programas-e-iniciativas/Open-Days-i4-0.aspx> [retrieved: 2020/01/07]
- <sup>iii</sup> [https://www.cm-fundao.pt/municipionews/mun\\_fnd\\_vence\\_iscte](https://www.cm-fundao.pt/municipionews/mun_fnd_vence_iscte) [retrieved: 2020/01/07]
- <sup>iv</sup> <https://www.iapmei.pt/PRODUTOS-E-SERVICOS/Incentivos-Financiamento/Sistemas-de-Incentivos/Incentivos-Portugal-2020/SI-Qualificacao-Individuais.aspx> [retrieved: 2020/01/07]
- <sup>v</sup> [https://www.eng.uminho.pt/pt/Estudar/Formacao-Continua/Cursos-de-Formacao-Especializada/Paginas/Programa%C3%A7%C3%A3o-de-Computadores-para-Reconvers%C3%A3o-de-Licenciados-\(Qualifica-IT\).aspx](https://www.eng.uminho.pt/pt/Estudar/Formacao-Continua/Cursos-de-Formacao-Especializada/Paginas/Programa%C3%A7%C3%A3o-de-Computadores-para-Reconvers%C3%A3o-de-Licenciados-(Qualifica-IT).aspx) [retrieved: 2020/01/07]
- <sup>vi</sup> <https://portotechhub.com/switch/> [retrieved: 2020/01/07]
- <sup>vii</sup> <https://www.iapmei.pt/PRODUTOS-E-SERVICOS/Assistencia-Tecnica-e-Formacao/Academia-de-PME/Programa-Formacao-Acao.aspx> [retrieved: 2020/01/07]
- <sup>viii</sup> <http://www.anqep.gov.pt/aaaDefault.aspx?back=1&f=1&lws=1&mcna=0&lnc=6215AAAAAAAAAAAAAA&codigono=6759AAAAAAAAAAAAAAAAAAAAAA> [retrieved: 2020/01/07]
- <sup>ix</sup> <https://maisguimaraes.pt/projeto-i9g-momento-singular-na-economia-portuguesa/> [retrieved: 2020/01/07]
- <sup>x</sup> <https://jornaleconomico.sapo.pt/noticias/siemens-da-as-boas-vindas-a-empresas-que-querem-testar-projetos-e-produtos-271357> [retrieved: 2020/01/07]
- <sup>xi</sup> <https://www.dinheirovivo.pt/economia/siemens-inaugura-incubadora-de-solucoes-digitais-no-porto/> [retrieved: 2020/01/07]
- <sup>xii</sup> <https://www.idcdx.pt/insights/idc-executive-insights-programs/> [retrieved: 2020/01/07]
- <sup>xiii</sup> <https://www.insignare.pt/pt/1387/o-que-e-o-processo-de-rvcc> [retrieved: 2020/01/07];  
<http://www.anqep.gov.pt/aaaDefault.aspx?back=1&f=1&lws=1&mcna=0&lnc=6215AAAAAAAAAAAAAA&codigono=6759AAAAAAAAAAAAAAAAAAAAAA> [retrieved: 2020/01/07];  
<https://eacea.ec.europa.eu/national-policies/en/content/youthwiki/64-validation-non-formal-and-informal-learning-portugal> [retrieved: 2020/01/07]
- <sup>xiv</sup> <https://www.passaportequalifica.gov.pt/>