

COMPASS -

way to future competencies,
future skills,
future jobs



Erasmus+

COMPASS - competencies supporting
youth innovative entrepreneurship



Leader:



Partners:



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COMPASS- competencies supporting youth
innovative entrepreneurship

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INTRODUCTION

The presented manual was created as a result of the project **COMPASS- competencies supporting youth innovative entrepreneurship** the aim of which was to exchange good practices and experiences in the field of informal education of young people focused on the development of competences of the future innovations, competences conducive to innovative social and entrepreneurship activities. Innovation and entrepreneurship are key pillars of sustainable, inclusive economic and social growth. In European countries innovation and entrepreneurship are evoked as major avenues for achieving economic growth and competitiveness. The role of young people in shaping the world's economy is clear: it is the largest generation of youth in history; and, worldwide, millennials make up almost 50 % of the global workforce. Given this increasingly young labour force, there is a growing need to explore alternatives to traditional job-creation strategies. Focusing on new mega global trends, identifying new professions and competences of the future is a strategy that favors making the right choices in innovative social activity and entrepreneurship. Our manual is a comprehensive publication on contemporary global megatrends that set the directions for economic and social development in the world. In the handbook, youth personnel will also find a description of new growing sectors, a description of new professions and related competences and skills. Thanks to this, it is easier to direct activities related to the development of youth competences to the right directions of personal development, to make the

right choices in setting up your own business, taking up social initiatives, and social economy initiatives that are characterized by a high level of innovation. The manual also includes scenarios for activities and practical educational tools that stimulate innovative and creative thinking of young people and stimulate youth educators to new type of educational activities. We recommend the presented manual and let the quotes of our partners organization will be an inspiration and encouragement to look for new forms of youth education.

Wojciech Odzimek (Executive Director of FRDL MISTiA):

"Innovation is the type of activity that discover new paths and worlds. The role of youth educators is to support young people in such direction that they independently, actively discover new own paths and worlds, their own good future"


Robert's Miskuf (Founder and CEO of PEDAL Consulting):

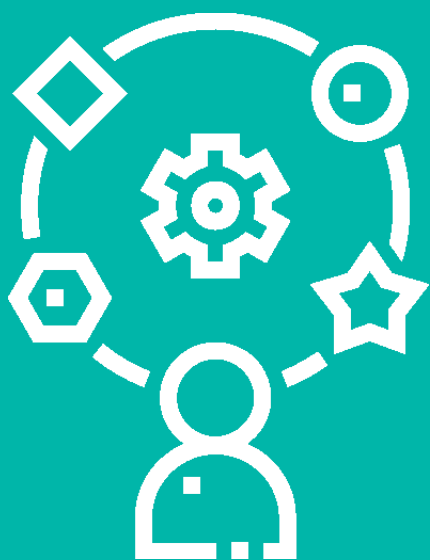
"I believe that the young people should make use of the opportunities available to make a change in favor of a prosperous future. Thanks to the EU, anyone within this arena can now travel, study, work, start business, fall in love... without any restrictions. Your 'playground' is much bigger than you think."

Zdravko's Sechkov (Executive Director of FLGR):

"Entrepreneurs are the engines of development. Be part of those young people who are the bearers of the new, seek change for the sake of creativity and take advantage of the opportunities that entrepreneurship offers!"

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KEY COMPETENCES, FUTURE SKILLS

KEY COMPETENCES, FUTURE SKILLS

Key competences is an concept emphasizes the need for people's personal and professional development in the area of transversal competences, which are transferable between jobs and they are as important as specific competences acquired for specific jobs context. Professional preparation and specific competences are most often developed by a person as part of formal education, which is characterized by formal confirmation of the acquired qualifications. Transversal competences are characterized by the fact that learners can develop them at all levels of learning, i.e. by participating in formal education, informal education, self-directed learning, informal learning. Key competences are transversal, universal competences, regardless of the profession or sector in which one works, they are competences needed by every person in contemporary social, economic and political life.

In a rapidly changing and interconnected world, each person will need a broad spectrum of skills and competences and will need to continuously develop them throughout their lives. The purpose of key competences is to provide people with knowledge, skills and attitudes that are used in social, public and professional life in which there is greater equality. They respond to the need for inclusive and sustainable growth, social cohesion and the further development of a democratic culture.

The goals of key competences are related not only to personal satisfaction, personal and professional development,

but they are an integral part of building and strengthening a democratic, open, equal and solidarity society.

This means that all forms of youth education, especially offered by the civic sector, are important element in building social cohesion, strengthening the economy and realizing human rights, hence the important role of non-governmental organizations in providing the best quality educational services as part of lifelong learning and the implementation of educational programs based on a set of key competences.

The importance of key competences has been particularly emphasized in the European Pillar of Social Rights, which emphasize people's access to education as a human and civil right:

"Everyone has the right to quality and inclusive education, training and life-long learning in order to maintain and acquire skills that enable them to participate fully in society and manage successfully transitions in the labour market.

Everyone has the right to timely and tailor-made assistance to improve employment or self-employment prospects. This includes the right to receive support for job search, training and re-qualification"

Key Competences for Lifelong Learning developed by Council of the European Union², the model is based on combination of knowledge, skills and attitudes.

1 Council Recommendation of 22 May 2018 on key competences for lifelong learning ST/9009/2018/INIT
2 Council Recommendation of 22 May 2018 on key competences for lifelong learning ST/9009/2018/INIT

KNOWLEDGE – concepts, ideas, facts and figures, which already existing and help to understanding specified area of subject;

SKILLS – ability to use existing knowledge in the process to achieve indicated goals and results;

ATTITUDES – disposition and mind sets to act/ react to ideas, persons or situation

SET OF COMPETENCES

LITERACY COMPETENCES – literacy is the ability to identify, understand, express, create, and interpret concepts, feelings, facts and opinions in both oral and written forms, using visual, sound/audio and digital materials across disciplines and contexts. It implies the ability to communicate and connect effectively with others, in an appropriate and creative way.

COMPASS TIPS – focus on:

- ✦ reading and writing skills, understanding of written information, awareness of the main types of verbal interaction, a range of literary and non-literary texts, and the main features of different styles and registers of language;
- ✦ orally and writing communication skills and adapt communication to the requirements of the different situation
- ✦ abilities to distinguish and use different types of sources, to search for, collect and process information, formulate and express oral and written arguments in a convincing way appropriate to the context skills
- ✦ critical thinking and ability to as-

sess and work with information

- ✦ attitude of disposition to critical and constructive dialogue, an awareness of the impact of own language on others, usage language in a positive and socially responsible manner

MULTILINGUAL COMPETENCES

– be able to communicate and decode meanings in a foreign language. This competence defines the ability to use different languages appropriately and effectively for communication. It broadly shares the main skill dimensions of literacy: it is based on the ability to understand, express and interpret concepts, thoughts, feelings, facts and opinions in both oral and written form (listening, speaking, reading and writing) in an appropriate range of societal and cultural contexts according to one's wants or needs. Languages competences integrate a historical dimension and intercultural competences.

COMPASS TIPS – focus on:

- ✦ communicative foreign languages skills, knowledge of societal conventions, and the cultural aspect and variability of languages is important
- ✦ ability to work in an international group
- ✦ ability to analyze facts and data in a foreign language and draw conclusions
- ✦ ability to create reliable information in a foreign language, issue opinions, argue
- ✦ ability to process information in a foreign language
- ✦ respect for other cultures, patterns of local life
- ✦ appreciation of cultural diversity

SCIENCE, TECHNOLOGY, ENGINEERING, MATHEMATIC (STEM)

– mathematical competence is the ability to develop and apply mathematical thinking and insight in order to solve a range of problems in everyday situations. Building on a sound mastery of numeracy, the emphasis is on process and activity, as well as knowledge. Mathematical competence involves, to different degrees, the ability and willingness to use mathematical modes of thought and presentation (formulas, models, constructs, graphs, charts)

Competence in science refers to the ability and willingness to explain the natural world by making use of the body of knowledge and methodology employed, including observation and experimentation, in order to identify questions and to draw evidence-based conclusions. Competences in technology and engineering are applications of that knowledge and methodology in response to perceived human wants or needs. Competence in science, technology and engineering involves an understanding of the changes caused by human activity and responsibility as an individual citizen.

COMPASS TIPS – focus on:

- ✦ basic mathematical knowledge, understanding of mathematical terms and concepts, and an awareness of the questions to which mathematics can offer answers, basic natural knowledge, knowledge of new technologies,
- ✦ skills to apply basic mathematical principles and processes in everyday contexts at work (e.g. financial skills), and to follow and

assess chains of arguments

- ✦ ability to reason mathematically, understand mathematical proof and communicate in mathematical language, and to use appropriate aids including statistical data and graphs and to understand the mathematical aspects of digitalisation
- ✦ understanding process of investigation through specific methodologies, including observations and controlled experiments
- ✦ ability to draw conclusions from observations
- ✦ critical thinking skills
- ✦ ability to combine knowledge from various fields
- ✦ the ability to use logical and rational thought to verify a hypothesis and the readiness to discard one's own convictions when they contradict new experimental findings
- ✦ ability to use and handle technological tools and machines as well as scientific data to achieve a goal or to reach an evidence-based decision or conclusion
- ✦ attitude of critical appreciation and curiosity, a concern for ethical issues and support for both safety and environmental sustainability
- ✦ respect for nature and the environment
- ✦ openness to learning and updating your knowledge
- ✦ be open for innovations and implement changes

DIGITAL COMPETENCES – digital competence involves the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It includes information and

data literacy, communication and collaboration, media literacy, digital content creation (including programming), safety (including digital well-being and competences related to cybersecurity), intellectual property related questions, problem solving and critical thinking.

Digital competences contain 5 areas:

- ✦ Information and data literacy
- ✦ Communication and collaboration
- ✦ Digital content creation
- ✦ Safety and data protection
- ✦ Problem solving

COMPASS TIPS – focus on:

- ✦ knowledge of basic IT function, use of different devices, software, and networks
- ✦ social media knowledge
- ✦ knowledge of digital security rules and regulations
- ✦ data protection knowledge
- ✦ ability to use, access, filter, evaluate, create, program and share digital content
- ✦ ability to use digital technologies to support active citizenship and social inclusion, collaboration with others, and creativity towards personal, social or commercial goals
- ✦ ability to manage and protect information, content, data, and digital identities, as well as recognise and effectively engage with software, devices
- ✦ ability to solve technical problems
- ✦ ability to create digital content
- ✦ ability to engage people for social purposes using new technologies
- ✦ ability to communicate and cooperate using IT tools
- ✦ reflective and critical, yet curious, open-minded and forward-look-

ing attitude to digital evolution

- ✦ ethical, safe and responsible approach to use IT tools

PERSONAL, SOCIAL AND LEARNING TO LEARN COMPETENCES – personal, social and learning to learn competence is the ability to reflect upon oneself, effectively manage time and information, work with others in a constructive way, remain resilient and manage one's own learning and career. It includes the ability to cope with uncertainty and complexity, learn to learn, support one's physical and emotional well-being, to maintain physical and mental health, and to be able to lead a health-conscious, future-oriented life, empathize and manage conflict in an inclusive and supportive context

COMPASS TIPS – focus on:

- ✦ knowledge of different types of learning and understand which one is personally the best
- ✦ knowledge about social participation
- ✦ ability to deal with complexity, critically reflect and make decisions
- ✦ ability to learn and work both collaboratively autonomously and in group as well
- ✦ ability to learn, evaluate and share knowledge
- ✦ ability to seek support when appropriate
- ✦ ability to manage one's career and social interactions
- ✦ ability to be resilient and able to cope with uncertainty and stress
- ✦ ability to communicate constructively in different environments, collaborate in teams and negotiate
- ✦ ability to understand different viewpoints,

- ✦ ability to create confidence and feel empathy
- ✦ openness and tolerance
- ✦ respecting diversity of others and their needs
- ✦ being prepared to compromise

CITIZENSHIP COMPETENCES – citizenship competence is the ability to act as responsible citizens and to fully participate in civic and social life, based on understanding of social, economic, legal and political concepts and structures, as well as global developments and sustainability

COMPASS TIPS – focus on:

- ✦ knowledge and understanding democratic values, rights and responsibilities of citizen in democratic system
- ✦ knowledge and understanding human rights system
- ✦ knowledge about global dependencies
- ✦ knowledge of contemporary events, as well as a critical understanding of the main developments in national, European and world history
- ✦ knowledge about climate changes and its impact for democratic system and human rights all over the world
- ✦ ability to engage effectively with others in public interest
- ✦ skills to develop arguments and constructive participation in community activities
- ✦ ability to decision-making at all levels, from local and national to the European and international level
- ✦ ability to critical understanding of, and interact with both tradi-

- tional and new forms of media
- ✦ ability to understand the role and functions of media in democratic societies
- ✦ support for social and cultural diversity, gender equality and social cohesion, sustainable lifestyles, promotion of culture of peace and non-violence, and responsibility for the environment

ENTREPRENEURSHIP COMPETENCES – entrepreneurship competence

refers to the capacity to act upon opportunities and ideas, and to transform them into values for others. It is founded upon creativity, critical thinking and problem solving, taking initiative and perseverance and the ability to work collaboratively in order to plan and manage projects that are of cultural, social or financial value.

COMPASS TIPS – focus on:

- ✦ knowledge of local and international entrepreneurship law
- ✦ knowledge of principles of economy and business plan creation
- ✦ knowledge of labour law, employees' rights and responsibilities
- ✦ knowledge of responsible consumption and shopping rules
- ✦ ability to project thinking
- ✦ ability to strategic thinking
- ✦ creativity
- ✦ problem solving thinking
- ✦ ability to teamwork and autonomous work as well
- ✦ ability to mobilize resources (people and things) and to sustain activity
- ✦ ability to make financial decisions relating to cost and value
- ✦ ability to effectively communicate and negotiate with others

- ✦ ability to cope with uncertainty and risk as part of making informed decisions is essential
- ✦ sense of initiative and agency, pro-activity
- ✦ being forward-looking
- ✦ courage and perseverance in achieving objectives
- ✦ desire to motivate others and value their ideas,
- ✦ empathy and taking care of people and the world,
- ✦ accepting responsibility
- ✦ ethical approach

CULTURAL AWARENESS AND EXPRESSION COMPETENCES

– competence in cultural awareness and expression involves having an understanding of and respect for how ideas and meaning are creatively expressed and communicated in different cultures and through a range of arts and other cultural forms. It involves being engaged in understanding, developing and expressing one’s own ideas and sense of place or role in society in a variety of ways and contexts.

COMPASS TIPS – focus on:

- ✦ knowledge of local, national, regional and global cultures and expressions, including languages, heritage, traditions and cultural products
- ✦ understanding of one’s own iden-

- tity and cultural heritage within a world of cultural diversity
- ✦ understand how arts and other cultural forms can be a way to see and shape the world
- ✦ ability to express emotions and create experiences due to culture and heritage involvement
- ✦ ability to identify and realise opportunities for personal, social or commercial value through the arts and other cultural forms
- ✦ ability to engage in creative processes, forms, events
- ✦ ability to inspiring from indigenous culture
- ✦ ability to intercultural communication, making decisions in cooperation while respecting local cultures
- ✦ ability to learn on cultural resources, use the achievements of culture and heritage to create new ideas, innovations, and develop their own creativity
- ✦ respect for culture diversity, local culture and patterns
- ✦ ethical and responsible approach to intellectual and cultural ownership
- ✦ curiosity about the world,
- ✦ openness to imagine new possibilities
- ✦ willingness to participate in cultural experiences





CLIMATE CHANGES AND RESOURCES STRESS

MEGATREND

Sustainability entered the public conversation in the 17th century and its importance grew, especially during the 20th century. In 1987, thanks to the Bruntland report, it was possible to define Sustainable Development as “development that meets the needs of the present without compromising the ability of the future generation to meet their own needs.” The main purpose is the mutual reinforcement among the three pillars of sustainability: social, environmental and economic. The Bruntland report paved the way to decades of work by the United Nation that produced in 2015 the “2030 Agenda for Sustainable Development.” At its heart, the 17 goals, which are an urgent call for action by all countries – developed and developing – in a global partnership.

The 13th goal aims to take urgent action to combat climate change and its impact. Climate change in IPCC usage refers to a change in the state of climate that can be identified (e.g. by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. It refers to any change in climate over time, whether due to natural variability or as a result of human activity. Changes observed in Earth’s climate since the early 20th century are primarily driven by human activities, particularly fossil fuel burning, which increase heat-trapping greenhouse gas levels in Earth’ atmosphere, raising the planet’s average surface temperature. The observation collected from the scien-

tists in these years, provides evidence of climate change key indicators, such as global land and ocean temperature increases, rising sea level, together with an increased frequency and severity of extreme weather phenomena.

The transition to a decarbonised economy is not only essential to halt the climate change but it is also a driver to economic growth with the potential to create millions of new jobs. The United Nations Environment Programme (UNEP) defined green jobs as “positions in agriculture, manufacturing, R&D, administrative and service activities aimed at substantially preserving or restoring environmental quality.” To put it in another way, environmental jobs are those aimed at protecting and promoting the environment, or those, which consider their impact on the health of the planet at all times and endeavour to minimise it. Considering that green jobs are not only new types of jobs, but also traditional jobs that have been modified in a green perspective.

Moreover, green jobs will deeply stimulate the global economy. The ILO stated that “changes in production and use of energy to achieve the 2 °C target may lead to the creation of around 18 million jobs in the world economy”³.

3 https://www.ilo.org/wcmsp5/groups/public/---dgreports/--dcomm/documents/publication/wcms_098504.pdf

3 main growing sectors

(Identification of the main, new, developing sectors within the trend)

Zero waste and circular economy.

“[...] Zero waste means designing and managing products and processes to reduce the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them.”⁴ The circular economy is the new standard for sustainable business. In a circular economy, manufacturers deliberately design out waste and pollution at the outset, keeping products and materials in continual cycles of use and reuse, and regenerate natural systems. It offers fresh opportunities for businesses and communities to more effectively compete and function in a resource-constrained and carbon-neutral world. It is estimated that around 700,000 net additional jobs will be created in Europe thanks to the Circular Economy. Including both the job losses and gains within and across all sectors of the economy. The highest level of job creation will be in the waste management sector, including both recycling activities and landfill management. The latter will see a decline but a higher demand for recycled materials will drive up demand for the overall sector.

Bioeconomy and rural development.

According to the European Commission (EC), the bioeconomy includes the production of renewable biological resources (also called “biomass”), and the conversion of these resources and waste streams into value added products, such as food, feed, bio-based products and bioenergy. It is an important economic sector in Europe, employing more than 8% of the workforce, annually adding value to the amount of €614 billion and offering the potential to create 1 million new green jobs by 2030. Most of the growth in employment is expected to take place in non-food sectors (including liquid biofuels and bioenergy), as well as in support services (logistics, equipment and input production, etc.)⁵.

Sustainable tourism.

Tourism is one of the biggest and fastest expanding sectors of the European economy. It impacts almost every other sector. COVID-19 has impacted the tourism sector and will shape the way we will address sustainability in tourism for the upcoming years⁶. Tourism currently accounts for 30% of world exports of services and 6% of world exports of goods and services, with a global contribution to 3-5% of GDP and 7-8% of employment worldwide⁷. Sustainable tourism isn't a business sector or discipline with established procedures and career paths. The key, as Randy Durband, CEO of the Global Sustainable Tourism Council advises, is to “seek careers in any facet of travel and tourism and be an agent of change for greater sustainability.” Fiona Jeffery, founder of water charity Just a Drop, who advises to “listen to your conscience and ensure whatever job you take puts sustainability in the agenda as part of its DNA.” This links to the importance of communication skills, as Rebecca Hawkins puts it, “convince your employer that the sustainability path is the one that will pay dividends (financially, reputationally, morally)”⁸.

4 <https://zerowasteeurope.eu/about/principles-zw-europe/>

5 https://www.allthings.bio/wp-content/uploads/2021/04/JobsCareers_EN_2104.pdf

6 <https://ec.europa.eu/docsroom/documents/43467/attachments/3/translations/en/renditions/native>

7 United Nations World Travel Organisation (UNWTO), 2018

8 <https://sustainability-leaders.com/ten-tips-sustainable-tourism-career/>

Job Positions	Skills	Job description
Zero waste and circular economy^{9, 10, 11}		
Circular economy and Sustainability project manager	<ul style="list-style-type: none"> ✦ Strong knowledge of Circular Economy and sustainability and their application ✦ Strong knowledge of CBA, MCA and LCA. Evaluation method to assess the environmental impact of their decisions ✦ Knowledge of energy, waste, design and raw materials ✦ Knowledge of tools/ techniques to identify customer requirements (Business Model Canvas, the 5 whys, etc.). ✦ Knowledge of data analysis ✦ Knowledge of communication and brand awareness raising techniques ✦ Policy knowledge 	<p>The CESPM participates in the management of the company providing its knowledge and expertise in Circular Economy.</p> <p>The CESPM will provide Circular solutions for the company on different issues (energy, waste, design, raw materials, etc).</p> <p>The CESPM is able to identify the customers' needs creating the best product/ service for the client.</p> <p>The CESPM is able to find sustainable solutions both in social, environmental and economic dimensions thanks to the knowledge of Cost Benefit Analysis, Multi Criteria Analysis and Life Cycle Analysis.</p> <p>The CESPM is able to deliver the added value created by Circular Economy through strong and effective communication campaigns</p>

9 <https://www.circle-economy.com/circular-jobs-initiative/circular-jobs>
 10 <https://www.circulareconomyclub.com/jobs/>
 11 <https://unjobs.org/themes/circular-economy>



Job Positions	Skills	Job description
Bioeconomy and rural development¹²		
21st century Farmer	<ul style="list-style-type: none"> ✦ Strong chemical and agronomic knowledge ✦ Policy knowledge ✦ Strong knowledge of computer science, data analysis and statistics ✦ Strong networking skills ✦ Entrepreneurial skills ✦ Communication skills 	<p>The farmer will contribute to satisfy the growing global food demand through its work</p> <p>The farmer must increase the productivity of the field without damaging the biodiversity and fertility of the soil.</p> <p>The farmer must apply new technologies and techniques in order to reduce the use of pesticides and fertilizers and increase the yields.</p> <p>The farmer must be able to create network and cooperation with neighbouring companies in order to be a price maker on the market</p> <p>The farmer is able to deliver the added value provided by Bioeconomy and Circular economy through effective communication campaigns</p> <p>The farmers must understand the footprint of its production and apply methods to reduce it.</p> <p>The farmer must diversify its business model by creating new sources of revenues (renewable energy production, biomass production, etc) in order to increase the resiliency of the company</p>

12 <https://datam.jrc.ec.europa.eu/datam/mashup/BIOECONOMICS/index.html>

Job Positions	Skills	Job description
Sustainable Tourism¹³		
Sustainable tourism planner and developer	<ul style="list-style-type: none"> ✦ Strong knowledge of CBA, MCA and LCA analysis ✦ Strong knowledge of heritage and natural characteristic of the region/city/location ✦ Strong knowledge of participative methods of decision making ✦ Strong networking skills ✦ Communication skills ✦ Policy knowledge 	<p>The STPD will plan sustainable tours and visits in both social, environmental and economic dimensions</p> <p>The STPD will assess the environmental risks of the region/city/location in order to reduce the impact of tourism</p> <p>The STPD will cooperate with architect, policymakers and urban planners in order to redefine the flows and itinerary of the tourist masses</p> <p>The STPD is able to valorize the region/city/location in order to attract more tourists</p> <p>The STPD is able to increase awareness about the environmental impact of tourism among citizens and tourists</p>

13 <https://hiddenlemur.com/sustainable-tourism-jobs/>





GLOBAL ECONOMY AND ECONOMIC INTERCONNECTEDNESS

GLOBAL ECONOMY AND ECONOMIC INTERCONNECTEDNESS

International trade, the flow of capital, goods, services and people is the result of a constantly developing global economy and many local/regional circumstances which have global impact, like: armed conflicts or climate disasters.

STATISTICS

Global trade as a share of GDP increased from 40% in 1980 to 63% in 2011 and the forecasted trend is approximately 5% annually till 2030.

From consumers point of view free global flow of capital, goods, services, information and people will lead to changes in consumer behaviour which can result in increased innovation, greater consumer awareness and knowledge, and increased product and service customization¹⁴.

GLOBAL ECONOMY AND RELATION TO EMERGING MARKETS:

Micro and macro level: The increase in the world's population has led to emerging markets growing economically, making them one of the primary engines of world economic growth.

Long-term world economy: According to financial and economic projections based on demographic trends and capital productivity models, the GDP in emerging market economies in 2019 are likely to keep increasing at a positive rate. According to an emerging markets

economic forecast for 2019 conducted by Focus Economics, the economy is set to increase by 7.5% in India, 6.6% in Philippines, 6.3% in China, 5.3% in Indonesia, 5.1% in Egypt, 4.9% in Malaysia, 3.8% in Peru and 3.7% in Morocco.

The functioning of the global economy can be explained through one word – transactions. International transactions taking place between top economies in the world help in the continuance of the global economy. These transactions mainly comprise trade taking place between different countries. International trade includes the exchange of a variety of products between countries. It ranges all the way from fruits and foods, to natural oil and weapons¹⁶.

THE CONSEQUENCES OF ECONOMIC INTERCONNECTEDNESS²:

- ✦ Trade and investment continue to increase growth
- ✦ Further job growth in international trade, movement of labour: increased migration of the labour force and refugee immigration
- ✦ Increasingly complex trade and investment relationships
- ✦ Declining barriers in international trade
- ✦ Opportunities for fair trade and direct trade initiatives
- ✦ Opportunities to connect small producers around the world
- ✦ Digital economy demands
- ✦ Greater risk for international economic/financial various contagion events

14 Future state 2030: the global megatrends shaping governments; KPMG International

15 Future state 2030: the global megatrends shaping governments; KPMG International

16 Global megatrends 2022, PMI

3 main growing sectors

(Identification of the main, new, developing sectors within the trend)

Refugee services

The refugee assistance sector is associated with the waves of migration resulting from armed conflicts in various parts of the world, or climate migration resulting from climate changes and the people's search for new, better living conditions with access to drinking water, food, hygiene and medical services, etc. The refugee assistance sector provides new jobs and forms of work related to such tasks as: organization of accommodation, providing meals services, medical care, but at the next stages it is a challenge related to the integration of foreigners and their vocational activation.

Very often the influx of refugees is sudden, uncontrolled and requires the service of a large group of people, often with specific needs, such as psychological and medical assistance, care for children, people with disabilities, the elderly or asylum-seeker.

Innovations & creativity

Innovation and creativity are two interrelated phenomena that play a significant role in the progress of civilization. These phenomena, although often understood as identical or synonymous, differ from each other. Innovation differs from creativity in that it emphasizes the implementation of creative ideas in the environment, economic or social. In the scientific literature (Amabile and Pratt¹⁷), creativity defines "creating novel and useful solutions by an individual or a small group of people working together" and innovation is "the effective implementation of creative ideas / solutions in an organization". Therefore, innovations cannot exist without creative work and creative ideas, and vice versa, creative solutions and ideas have no chance to be tested, implemented and disseminated without innovation.

International fair trade/ direct trade

Fair Trade – an international movement of importing and trading firms, cooperatives of small producers and agricultural producers, NGO, social organizations and customers, which aims to include small producers, farmers, artisans in the economic and social development through practices developed by business, creating an independent trading system with a range global. Fair trade mainly concerns the production and distribution of global products such as coffee, tea, cocoa, bananas, cotton, etc., that are, products that are bought globally but are manufactured and produced in specific parts of the world.

17 Amabile, Teresa M.; Pratt, Michael G. (2016). "The dynamic componential model of creativity and innovation in organizations: Making progress, making meaning". Research in Organizational Behavior.

3 main growing sectors

(Identification of the main, new, developing sectors within the trend)

The development of competences for creativity and innovation is particularly important in relation to the progress of civilization, including not only economic but also social development. Innovations play and will play an important role today because they: provide new, more efficient products and services, introduce improvements and improve the quality of existing products and services, or combine existing solutions in an innovative way, thus creating new features and functions. It should be remembered that innovation is important not only in economic but also social development. Sustainable and ecological innovations, responsible innovations or social innovations are playing an increasingly important role.

Fair Trade aims to eradicate poverty in the countries of the Global South by ensuring that producers in Africa, Asia and Latin America who are marginalized in the process of globalization have equal opportunities to access markets in the countries of the North. The primary goal of Fair Trade is to build lasting, direct relationships between producers in poor countries and consumers in rich parts of the world.

In 2020, 1,9 million farmers and workers in 71 countries are members of 1,880 fair trade certified producer organizations and Fairtrade farmers and workers earned EUR 179, 4 million in Fairtrade premium for the top 7 products¹⁸.



3 main growing sectors

(Identification of the main, new, developing sectors within the trend)

Global economy and global economic connections favor creativity and innovation as they increase access to global resources of knowledge, competences, flow of people, capital, services and information. The trend is conducive to combining what seems impossible to connect, seeing possibilities where they seem to be absent, looking for connections between what seems unconnected. Thanks to this, on a micro scale, new economic or social solutions can be created that are based on global resources, and vice versa, on a global scale, innovative solutions can be created, implemented on a local scale.

Innovative, original, more effective social and economic solutions, responding to contemporary needs, as well as based on a new approach: ecological, sustainable, socially responsible is a new sector of work.

The main principles of fair trade are:

- ✦ Respect and care of people and the environment
- ✦ Creating resources and opportunities for producers to improve their living and working conditions
- ✦ Development of mutually beneficial relations between sellers and customers
- ✦ Customers pay a price that gives producers a fair wage for their work and an acceptable income for the trade organization
- ✦ Raising awareness of the situation of women and men as producers and traders
- ✦ Promotion of equal opportunities for women
- ✦ Protection of the rights of women, children and indigenous peoples



Job Positions	Skills	Job description
Refugee services		
Humanitarian affairs officer	<ul style="list-style-type: none"> ✦ knowledge of a range of humanitarian assistance, emergency relief and related human rights issues ✦ knowledge of human rights system and legal system in particular countries ✦ ability to identify issues and judgment in applying technical expertise to resolve a wide range of problems ✦ ability to evaluate and integrate information from a variety of sources and assess impact on the humanitarian rights situation in specific country/area. ✦ ability to work under extreme pressure, on occasion in a highly stressful environment (e.g. civil strife, natural disasters and human misery) ✦ ability to work in an international group ✦ ability to analyze facts and data in a foreign language and draw conclusions ✦ ability to create reliable information in a foreign language, issue opinions, argue ✦ ability to process information in a foreign language ✦ be open for culture differences and culture expression 	<p>Humanitarian affairs officer is responsible of coordination of humanitarian aid and services , operations and advocacy, information management, humanitarian finance and projects development, also for monitoring, analyses and reports on humanitarian developments, disaster relief/management or emergency situations in assigned countries/areas. Assists the day-to-day management and humanitarian mission planning, organizes and prepares briefs on humanitarian, emergency relief and related issues; organizes follow-up work, including technical review meetings to support policy development work and decision-making on important issues. Works in an international environment, must understand cultural differences, respect human rights and be open to international and interinstitutional cooperation</p>

Job Positions	Skills	Job description
Innovations & creativity		
Innovator (social innovator)	<ul style="list-style-type: none"> ✦ knowledge of how starts-up functions, also social starts-up ✦ extensive knowledge of the world and contemporary phenomena ✦ the ability to combine knowledge from various fields, combine solutions from various fields, search for non-obvious connections ✦ the ability to identify innovative solutions to existing problems or needs ✦ ability to draw conclusions from observations ✦ critical thinking skills ✦ ability to combine knowledge from various fields ✦ the ability to use logical and rational thought to verify a hypothesis and the readiness to discard one's own convictions when they contradict new experimental findings ✦ ability to identified innovations and transfer them to practical projects ✦ ability to project thinking ✦ ability to strategic thinking ✦ creativity ✦ problem solving thinking ✦ ability to teamwork and autonomous work as well ✦ ability to mobilize resources (people and things) and to sustain activity ✦ ability to make financial decisions relating to cost and value ✦ ability to effectively communicate and negotiate with others ✦ ability to cope with uncertainty and risk as part of making informed decisions is essential ✦ futurological interests 	<p>An innovator is a person who deals with identifying new, more effective solutions in the form of products and / or services and / or working methods that respond to contemporary problems / needs, both economic and social. Such a person is responsible for the process of creating new solutions that are based on new resources or combining existing resources in a new way that creates new functions or features. Such a person is responsible for developing prototypes of solutions, testing them and implementing them on a micro scale, creating a friendly start-up ecosystem of operation and functioning, both commercial and non-profit. An innovator can incubate technological, industrial, economic and social innovations related to solving social problems of people with disabilities, dependent people, the elderly, etc. The innovator uses the methods of creative thinking, design thinking and project cycle management in his/her work.</p>

Job Positions	Skills	Job description
Fair trade/ direct trade		
Fair trade and global project manager	<ul style="list-style-type: none"> ✦ knowledge of “fair trade” standards ✦ knowledge of the origin of fair trade global products like for example: coffee, cacao, tea plants, bananas, sugar, cotton, flowers, (producer countries) ✦ general knowledge of the state of the economy of exporting and importing countries ✦ knowledge of costs associated with the production and processing of fair trade global products (from producer to customer) ✦ knowledge of responsible consumption and shopping rules ✦ knowledge of international data related to the UNDP 2030 Sustainable Development Goals ✦ knowledge of international trade regulations and cooperation ✦ strong foreign language skills ✦ ability to draw conclusions from observations ✦ critical thinking skills ✦ ability to combine knowledge from various fields ✦ high digital skills ✦ project thinking skills ✦ respect for human rights ✦ willingness to participate in democratic decision-making process ✦ support for social and cultural diversity, gender equality and social cohesion, sustainable lifestyles, promotion of culture of peace and non-violence, and responsibility for the environment ✦ openness for culture diversity 	<p>The Fair trade and global project manager is responsible for managing international trade initiatives that aim to build conditions for the peaceful development of developing countries and combat poverty in addition to economic profit. He/her is a person who values and understands the principles of fair trade, creates practices and conditions for their implementation in international trade, cares for the rights of producers, is able to promote social values, human rights, and democratic values in the conducted commercial activities. This person is responsible for establishing international contacts between producing and buying countries, negotiating and executing transactions.</p>



SOCIAL ECONOMY & SOCIAL INCLUSIVENESS

SOCIAL ECONOMY & SOCIAL INCLUSIVENESS

In the last decade, global economy was characterized by an annual GDP growth of 3%¹⁹. Yet the economic redistribution remains unequal. Interestingly, income inequality increases in the developed world in particular. As the UN recognizes, “powerful economic, social and environmental forces are affecting inequality. The implications of these global forces – or megatrends – are broad and varied. Some can help equalize opportunities, while others are exerting mounting pressure on income inequality, mainly through their effect on labour markets”²⁰. However, such dynamics have an effect on broader socio-economic structures. For fulfilling the leave-no-one-behind principle, long-term adaptation mechanisms will be needed.

This call for “re-balancing of efficiency and resilience throughout the economy”²¹ was further exacerbated by the global COVID-19 crisis. Together

with the “emergence and progress of digitalisation, blockchain and big data, or the global rise of inequalities and job insecurity”²², the concept of social economy (SE) seems to respond to such challenges.

Traditionally, SE addressed particular socio-economic problems like poverty, lack of job opportunities or state failure in providing social services to the vulnerable. Over time, SE has evolved in “an alternative way to think about and organize the economy and even society”^{23,24}. Moreover, “social economy can develop a much larger role in the post-COVID phase to inspire transformation to a more inclusive and sustainable economy and society,”²⁵ since it serves as a “buffer against the crisis (...) [and] an agent of structural exit from the crisis”²⁵. Examples from EU labour market after the financial crisis in 2008 provide strong evidence: in social economy organizations (SEO), drop in employment rate was 50% lower than in private bodies²⁶.

19 The World Bank. 2021. GDP growth (annual %). Available at:

<https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>.

20 UN DESA. 2020. World Social Report 2020. Inequality in a Rapidly Changing World. Executive Summary. Available at: <https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/02/World-Social-Report2020-ExecutiveSummary.pdf>

21 OECD. 2020. Social economy and the COVID-19 crisis: current and future roles. Available at: https://read.oecd-ilibrary.org/view/?ref=135_135367-031kjiq7v4&title=Social-economy-and-the-COVID-19-crisis-current-and-future-roles&_ga=2.263051593.453267659.1626079163-2017541158.1624524908.

22 Social Economy Europe. 2021. The Social Economy. Available at: <https://www.socialeconomy.eu.org/the-social-economy/>.

23 Youth Employment Magazine. 2019. Social economy as an “ecosystem” for Job creation. Available at: <https://youthemploymentmag.net/2021/01/30/social-economy-as-an-ecosystem-for-job-creation/>.

24 Krlev, G. et al. 2021. Reconceptualizing the Social Economy. Available at: https://ssir.org/articles/entry/reconceptualizing_the_social_economy#.

25 EESC. 2012. The social economy in the European Union. Available at: http://www.ciriec.uliege.be/wp-content/uploads/2015/12/resume_CESE2012_en.pdf.

26 CIRIEC. 2012. Social economy in the European Union. Available at: https://www.eesc.europa.eu/sites/default/files/resources/docs/a_ces11042-2012_00_00_tra_etu_cs.pdf.

Similarly, the EU perceives SE and social enterprises crucial in job creation and promoting sustainable economic and social development^{27,28}, although there is only limited institutional recognition of SE across EU member states. Nonetheless, the need to rebuild labour market and make it more sustainable in the post-covid era is where SE may have a huge role.

In contrast to traditional economic profit-oriented actors, SEO “put social and environmental concerns at the heart of their business model, promoting social impact over profit maximisation.” They aim at serving the community in the first place, stressing democratic decision-making among all stakeholders and equal redistribution. For SEO balancing between public and private sector, the SE is also called a third, non-governmental, independent or voluntary sector, or it could be represented by socially responsible corporate bodies and entrepreneurial initiatives where solidarity and social cohesion are the core principles^{29, 30}.

The EU defines five major types of SEO: cooperatives, mutual societies, non-profit associations, foundations

and social enterprises. In 2021, there are 2.8m SEO (mostly micro, small and medium) with up to 232m individual members. SE employs more than 13m people (6.3% of EU employment), almost 83m volunteers and accounts for 8% of the EU’s GDP³¹.

Potential of SEO is both short- and long-term. First, they can quickly address the urgent social needs reinforced by the Covid-19 pandemic (health care, food provision, other types of assistance). Second, they help to mitigate unemployment, provide jobs in marginalized areas and contribute to social well-being. In addition, SE activities serve as “preventive approach to save future costs or explicitly reduce the negative externalities of economic activities” through developing “collaborative, circular and inclusive practices and models”³ of production that is innovative, sustainable, environmental-friendly and ethical. Evidence from both production and consumption side support this: number of companies reporting on their sustainability impact (though Europe is lagging behind other regions) / number of customers preferring products and services from socially responsible companies is increasing^{32, 33}.

27 EESC. 2016. *Recent evolutions of the Social Economy in the European Union*. Available at: <https://www.eesc.europa.eu/sites/default/files/files/qe-04-17-875-en-n.pdf>

28 European Parliament. 2021. *What future for social economy?* Available at: [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/659336/EPRS_BRI\(2020\)659336_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/659336/EPRS_BRI(2020)659336_EN.pdf).

29 Centre for NNO research. 2005. *Social economy and NNO in the Czech Republic*. Brno: CVNS.

30 Dohnalová, M. a kol. 2009. *Social economy – selected questions*. Praha: VÚPSV.

31 European Commission. 2021. *Social economy in the EU*. Available at: https://ec.europa.eu/growth/sectors/social-economy_en.

32 KPMG. 2020. *The time has come. The KPMG Survey of Sustainability Reporting 2020*. Available at: https://assets.kpmg/content/dam/kpmg/be/pdf/2020/12/The_Time_Has_Come_KPMG_Survey_of_Sustainability_Reporting_2020.pdf

33 Mitchel, Mason. 2020. *Top Corporate Social Responsibility Trends in 2020*. Available at: <https://www.smartrecruiters.com/blog/top-corporate-social-responsibility-trends-in-2020/>.

Yet, SEO face several challenges. Apart from inefficient financial support and administrative obstacles related to complicated business environment, lack of systemic education is the main constraint. Enhancing entrepreneurial and managerial skills and “skills that enable workers to perform new tasks over a lifetime of changing work environments” across positions within SE would strengthen the capacities of SEO in various areas (see Jobs & Skills section below)^{34, 35}. Once-and-for-all education at a young age is no longer sufficient. (...) [It is thus important to] support people through work and life transitions (...) [and in realizing their potential in order to reduce] workforce polarization, and increased wage inequality”.

34 Bencheva, N., Stoeva, T., Todorova, S. 2018. Key Skills and Competences for Social Business Advisors: Views from Experts. *International Journal of Organizational Leadership* 7 (2018), 413-425.

35 European Commission. COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS. *Social Business Initiative. Creating a favourable climate for social enterprises, key stakeholders in the social economy and innovation.* Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52011DC0682>.



3 main growing sectors

(Identification of the main, new, developing sectors within the trend)

Refugees inclusion

Contemporary crises, such as armed conflicts, natural disasters resulting from climate change, climate change, have enormous consequences on a global scale, related to the displacement of civilians, flight from the country / areas affected by war or natural disaster. The refugee crisis is severely affecting Europe, and as a result of the war in Ukraine, this crisis will worsen. Therefore, European societies face the challenge of social integration of refugees, migrants and asylum seekers. The social integration of refugees is a multi-faceted process, starting from the first basic humanitarian aid, to social integration and social coexistence in local communities. It is a long-term process and requires the work of specialists properly prepared for it an also new type of social services development.

Environmental social entrepreneurship

Social entrepreneurship as an inclusive category of socio-economic development is undoubtedly not a new sector, but the sector is undergoing an important transformation that will result in new professions within the sector and a new approach to professional development. First of all, the climate crisis forces us to look for ecological solutions, hence the generation of innovative ideas as part of social entrepreneurship based on models of the circular economy, this is undoubtedly the future. Incubating new innovative green and environmentally friendly services is a must.

Sustainable food production & ethical gastronomy

This is a new growing sector, which is a consequence of a change in lifestyle to a more environmentally friendly, but also many people's expectations that the available food will be high-quality, nutritious and seasonal. Lifestyle changes are the result of several factors, climate changes that force the transformation of agriculture and food production towards a more ecological and planet-friendly, the scale of civilization diseases and their social consequences change people's awareness of healthy eating. In addition, ethical changes and strong vegetarian and vegan trends that promote respect for animal rights and the humane treatment of animals result in a strong consumer demand for ethical gastronomy and sustainable food.

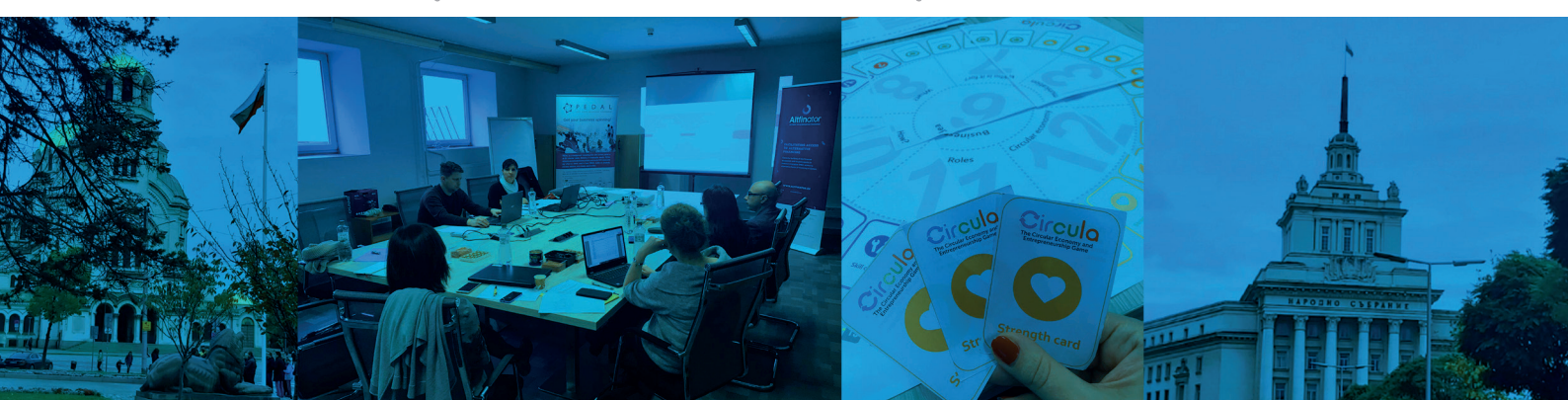


Job Positions	Skills	Job description
Refugees inclusion		
Humanitarian aid coordinator	<ul style="list-style-type: none"> ✦ knowledge of humanitarian aid and regional context ✦ project coordination skills ✦ time management skills ✦ risk management skills ✦ human resources skills ✦ financial resources skills ✦ ability to work under stress and pressure ✦ analytical, coordination and organizational skills ✦ ability to lead and manage teams to achieve demonstrable results ✦ language skills ✦ social skills like team work, building relations, networking ✦ ability to work with fragile contacts ✦ flexibility, stress tolerance 	Humanitarian aid coordinator is responsible for organizing humanitarian aid activities related to the organization of humanitarian aid convoys, identifying needs, organizing resources, establishing contacts with donors and sponsors. It is a person who also coordinates logistic activities related to the organization of accommodation, meals, basic aid services such as first aid, legal, psychological support.



Job Positions	Skills	Job description
Refugees inclusion		

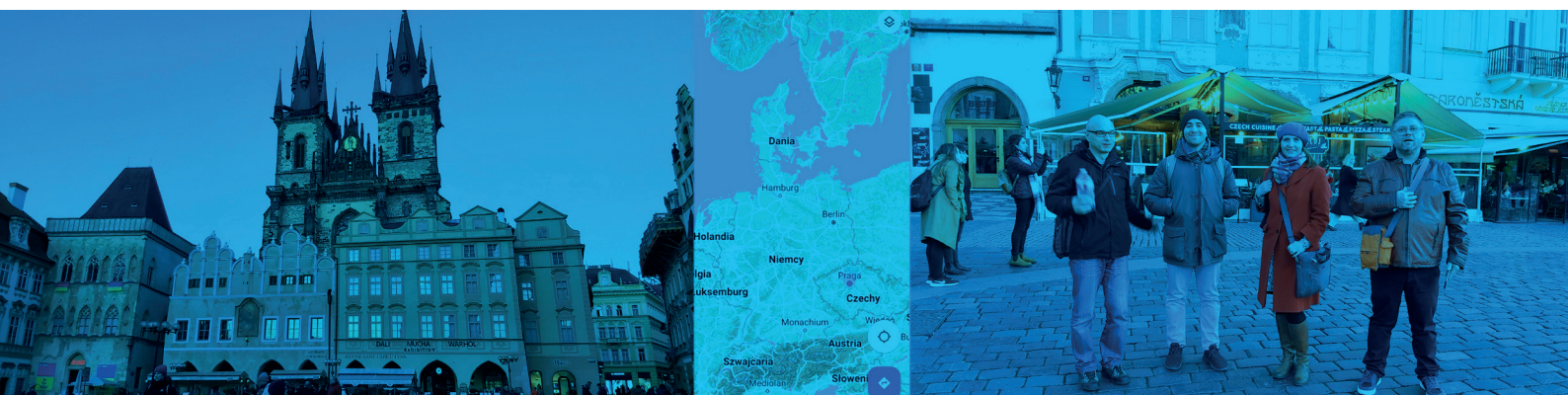
<p>Inclusion and diversity manager</p>	<ul style="list-style-type: none"> ✦ communication skills ✦ problem solving using data ✦ impact evaluation through data and metrics (qualitative, quantitative) ✦ navigating and cultivating strong, collaborative working relationships with stakeholders and external contacts ✦ ability to define a winning business strategy and product road map and gain buy-in from stakeholders at all levels ✦ innovation, inclusion & diversity and employee engagement ✦ ability to thrive in an intercultural team ✦ discussion facilitation skills ✦ facilitation and training development ✦ ability to successfully build and scale DEI solutions for impact ✦ proactive self-starter mentality and comfort working independently and collaboratively ✦ knowledge of societal trends that impact under-represented groups 	<p>Inclusion and diversity manager is responsible of: coaching company’s executives and leaders in shaping their roles as champions and advocates for inclusion and belonging, both internally and externally, working with company’s departments to integrate DEI content and support the facilitation of related learning initiatives, assist in enabling and equipping company’s recruiters, hiring managers, and interviewers with the tools, training, and resources to attract diverse talent and set them up for success in the hiring process, develop, maintain, and monitor metrics on a DEI dashboard, using research and data-driven insights to diagnose and assess the impact of DEI programs and initiatives, establish DEI as a core tenet of our employee value proposition, and elevate our visibility and reputation as an employer of choice, operationalize DEI communications for the area/region/country (content, creative assets), designing transforming solutions, responding to an agile and constantly evolving global environment, identifying and directing cross-regional and cross-functional stakeholder groups.</p>
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Job Positions	Skills	Job description
Environmental social entrepreneurship		
Environmental/sustainability consultant	<ul style="list-style-type: none"> ✦ sustainable strategy and non-financial reporting including sustainable investments ✦ value creation skills ✦ impact measurement skills ✦ risk management and integration of sustainability risks in management frameworks skills ✦ awareness and understanding the spectrum of sustainability (i.e. all elements from an Environmental, Social and Governance) ✦ developing and delivering Innovative Solutions across operations and work streams ✦ knowledge and understanding of materials and their environmental impact ✦ detail-oriented with robust quantitative, analytical and problem-solving skills and a high level of accuracy ✦ enjoys working in a dynamic multicultural business environment ✦ assessing and monitoring environmental and social aspects in projects within any relevant (and other) sectors ✦ networking skills ✦ ability to operate autonomously and to drive engagements as well as teams 	<p>Environmental/sustainability consultant is responsible of: designing and implementation of ESG-strategies, assessing the maturity and define short and long-term Sustainability ambitions, supporting their sustainability journey, from strategy and implementation to reporting, build a carbon roadmap for different types of clients considering their scope 1, 2 and 3 emissions, enhancement of the risk management framework to incorporate ESG risk factors, identify, quantify and prioritize the materiality of ESG factors on the activities of our clients and derive financial risk impacts under different scenarios, advise, prepare and review non-financial reports, following-up of evolving regulatory requirements and expectations in the field of ESG (CSRD, Taxonomy), performing ESG Due Diligence, business development related to ESG (incl. assistance in the deployment of our commercial strategy, organization of workshops, etc.), project management, regularly monitoring of the environmental / sustainable performance, annual collection and preparation of required data and information, preparing action plans with relevant measures and activities to achieve environmental / sustainable targets and supporting its implementation, carry out ESG-related portfolio analyses as well as benchmarking of sustainability / ESG performance, drive selected ESG projects (depending on expertise and business needs), initiate and conduct research on relevant ESG issues, support in the preparation and follow-up of meetings, workshops and presentations as well as Sustainability / ESG guidelines and training material.</p>

Job Positions	Skills	Job description
Environmental social entrepreneurship		

<p>Community engagement manager</p>	<ul style="list-style-type: none"> ✦ cultural competencies and inclusive behaviours ✦ understanding of community and how issues such as poverty, inequity & exclusion impact economic and social opportunity ✦ strategic program design, program management, grant management, execution, and evaluation ✦ creativity and problem solving ✦ communication skills ✦ multi-stakeholder planning and cross-team projects leadership and management ✦ inspiring, enabling and helping others to do their best ✦ knowledge of broad-based community engagement strategies to support programmatic efforts ✦ ability to adapt and brainstorm for new initiatives and support evolving priorities 	<p>Community engagement manager is responsible of: lead company’s philanthropic program investments, and partnerships with a specific focus on digital equity and training for high-demand regional workforce needs, design and deliver programs based on principles of diversity, anti-racism, equity, and inclusion, manage company’s strategic partnerships and not-for-profit grantees, help lead partnerships across education, corporate philanthropy, labor, philanthropy, and nonprofits aimed to improve educational and economic outcomes for citizens of the area/region/country, especially for those that are furthest from opportunity, provide “outside-in” knowledge and insight on societal, economic, community and policy attributes that could help shape relevant company’s business and technology strategies, actively seek out innovative best practices and programs from around the world to help inform strategy, contributes to the formulation of company’s CSR initiatives and/or topics, responds to CSR (e.g., philanthropies, accessibility, sustainability)</p>
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Job Positions	Skills	Job description
Environmental social entrepreneurship		

issues by prioritizing, engaging relevant parties, and escalating matters or contacting a specialist, assesses complex local, regional, or national community and civic engagement needs to determine opportunities for CSR (e.g., philanthropies, accessibility, sustainability) program development and implementation, contributes to the messaging and communications strategy to ensure programs are integrated into internal and external stakeholder messaging, evaluates company's technology to determine how its products can be used to solve societal issues and create opportunities in the community, ensure that strategies and interactions are culturally responsive, respectful and based on the commitment to diversity, equity and inclusion.



Job Positions	Skills	Job description
Sustainable food production & ethical gastronomy		
Local food resilience “officer”	<ul style="list-style-type: none"> ✦ Leadership skills ✦ Communication skills ✦ Fundraising knowledge and skills ✦ Community organization skills ✦ ICT skills ✦ Writing/editing/presentation skills 	<p>Job positions predict such duties as: supporting the development of local farmers and ranchers, such as feasibility surveys and evaluation of technical assistance and infrastructure, working toward equitable access to nutritious, local food by all residents of the area/region regardless of income or location, assisting in increasing local food production and access for local communities, assisting in developing regenerative agriculture, development of local food and agriculture policies at the community, county, and state levels, administrative and logistical support for event planning, organizing meetings, taking and/or distributing minutes, and organizing events, facilitate collaboration among local food-related individuals, organizations, and businesses by sharing information, events, and services and developing the organization’s strategic communications plan, identify and recruit individuals and entities to become members or provide support to local food production and/or consumption, support fundraising efforts through information and data collection for grant funding and reporting, support the implementation of the organization’s strategic plan by facilitating the development and implementation of management plans for the organization’s working groups and evaluating how the organization’s activities match the strategic plan.</p>

Local food resilience “officer”

- ✦ Leadership skills
- ✦ Communication skills
- ✦ Fundraising knowledge and skills
- ✦ Community organization skills
- ✦ ICT skills
- ✦ Writing/editing/presentation skills

Job positions predict such duties as: supporting the development of local farmers and ranchers, such as feasibility surveys and evaluation of technical assistance and infrastructure, working toward equitable access to nutritious, local food by all residents of the area/region regardless of income or location, assisting in increasing local food production and access for local communities, assisting in developing regenerative agriculture, development of local food and agriculture policies at the community, county, and state levels, administrative and logistical support for event planning, organizing meetings, taking and/or distributing minutes, and organizing events, facilitate collaboration among local food-related individuals, organizations, and businesses by sharing information, events, and services and developing the organization’s strategic communications plan, identify and recruit individuals and entities to become members or provide support to local food production and/or consumption, support fundraising efforts through information and data collection for grant funding and reporting, support the implementation of the organization’s strategic plan by facilitating the development and implementation of management plans for the organization’s working groups and evaluating how the organization’s activities match the strategic plan.

Job Positions	Skills	Job description
Sustainable food production & ethical gastronomy		
Sustainable food entrepreneur	<ul style="list-style-type: none"> ✦ Market orientation ✦ Commercial acumen ✦ Business opportunity identification ✦ Business plan making ✦ Financial management ✦ Sales and marketing ✦ Leadership ✦ Resilience ✦ Empathy ✦ Adaptability ✦ Networking & creating partnerships ✦ Value creation ✦ Project management ✦ Self-initiative ✦ Ethical thinking ✦ Time management ✦ Critical thinking ✦ Customers' needs assessment ✦ social impact metrics 	The profile of the job is connecting with: start and manage a business, develop new business ideas that create technology or innovations that support and promote sustainable food practices, generating ideas for products or services, developing business plans and marketing strategies, gathering funding from investors, hiring and training a team of passionate employees



Job Positions	Skills	Job description
Sustainable food production & ethical gastronomy		

Sustainable food policy and advocacy officer

- ✦ Engagement with policy-makers skills
- ✦ Communication with media skills
- ✦ Networking and coalition engagement skills
- ✦ Expertise in food security and sustainability
- ✦ Policy and advocacy

The job positions predict such responsibilities: advocate for marketplace change through comments to regulatory agencies and direct proposals for changes in corporate policy and practice, represent the organization in coalitions and work with other non-profit groups to advance strategic goals, research and analyze facts and law to in order to prepare policy briefs, issue papers, letters to legislators, opinion and media materials , prepare and deliver testimony, and respond to media requests and other public speaking opportunities, design and execute strategy in broad issue areas handling ongoing media requests and responding to new policy developments and opportunities which may arise on short notice, identify marketplace issues, identifying or creating advocacy opportunities in policy forums or in the marketplace.





COVID-19 AND PANDEMIC EFFECTS FOR SOCIETIES

COVID-19 AND PANDEMIC EFFECTS FOR SOCIETIES

The Covid-19 pandemic caused an enormous loss of human lives and affected whole societies, economies, cultures, environment, transportation, education etc. As a result, “the social crisis created by the COVID-19 pandemic may also increase inequality, exclusion, discrimination and global unemployment in the medium and long term”³⁶. It is expected that “\$3000 billion impacts on the world’s supply chain that could last up to two years.”³⁷ “Businesses closed too, leading to an equivalent of 255 million full-time jobs lost,” with those in the informal economy, youth and women affected the most³⁸. Nearly half of the world’s 3.3 billion global workforce are at risk of losing their livelihoods³⁹. The economic recession also increased the rate of extreme poverty and made poor countries of the Global South unable to meet basic needs of their citizens through government measures, compared to huge investments in countries of the Global North

(see Figure 1)⁴⁰. In other areas, nearly half all students around the world are still affected by school closures, putting especially girls at risk⁴¹. Environmentally, clean energy investments dropped for 30%, resulting in further demand for fossil fuels strengthened by countries’ striving for return to growth⁴².

With almost all sectors being affected by the pandemic, The British Academy⁴³ has identified nine areas of societal impact where the pandemic has accelerated existing trends. These are: local communities, citizens-governments relations, geographic inequalities, structural inequalities, health outcomes, mental health, revenue streams across the economy, unemployment and labour markets, and awareness of education and skills. This gives us an indication of what sectors could thrive in the post-Covid future and what jobs may be demanded. Significant growth is expected in online education, health care & pharmaceuticals, public service, e-commerce, logistics, cybersecurity, labour, technologies,

36 UN DESA. undated. *Everyone Included: Social Impact of COVID-19*. Available at: <https://www.un.org/development/desa/dspd/everyone-included-covid-19.html>

37 Ananya, V. 2020. *Impact of COVID-19 on Society and Environment*. Available at: <https://timesofindia.india-times.com/readersblog/myfantasies/impact-of-covid-19-on-society-and-environment-25587/>.

38 Wellcome. 2021. *From equality to global poverty: the Covid-19 effects on societies and economies*. Available at: <https://wellcome.org/news/equality-global-poverty-how-covid-19-affecting-societies-and-economies>.

39 WHO. 2020. *Impact of COVID-19 on people’s livelihoods, their health and our food systems*. Available at: <https://www.who.int/news/item/13-10-2020-impact-of-covid-19-on-people%27s-livelihoods-their-health-and-our-food-systems>.

40 Wellcome. 2021. *From equality to global poverty: the Covid-19 effects on societies and economies*. Available at: <https://wellcome.org/news/equality-global-poverty-how-covid-19-affecting-societies-and-economies>.

41 *ibid*

42 *ibid*

43 The British Academy. 2021. *The COVID Decade: understanding the long-term societal impacts of COVID-19*. Available at: <https://www.thebritishacademy.ac.uk/publications/covid-decade-understanding-the-long-term-societal-impacts-of-covid-19/>.

manufacturing & industrial production, legal service, finance, science & innovation, food service or entertainment.

On the one hand, the pandemic jeopardized many sectors job positions. On the other hand, new opportunities emerged for future development. With the pandemic-caused labour market shift to distant work schemes, digitalization has become a major driver of the transformation across sectors. As a futurist and strategic business & technology adviser Bernard Marr puts it, “one of the best ways to prepare yourself for a post-coronavirus-world is to acquire technology skills. The COVID-19 pandemic is fast-tracking digital transformations in companies as they are trying to become more resilient to future outbreaks and disruptions. The reality is that technologies such as artificial intelligence, big data, the Internet of Things, virtual and augmented reality, and robotics will make businesses more resilient to future pandemics, and anyone that can help companies exploit these technologies will be in a

great position (...) whether you work in a factory or an accounting office in a post-coronavirus world”⁴⁴. This further implies transformation of skills will be essential for future employment. Apart from technology skills, agility and flexibility, social and emotional intelligence, innovation, value creation or communication will be needed the most^{45, 46}.

44 Craig-Bourdin, M. 2020b. Brush up on digital, social and emotional skills and competencies for a post-COVID-19 world. Available at: <https://www.cpacanada.ca/en/news/world/2020-06-03-post-covid-19-future-skills>.

45 *ibid*

46 *Pertemps. 2021. Four in-demand skills to succeed post-COVID-19. Available at: <https://www.pertemps.co.uk/candidates/career-advice/job-search/four-in-demand-skills-to-succeed-post-covid-19/>.*



3 main growing sectors

(Identification of the main, new, developing sectors within the trend)

E-commerce

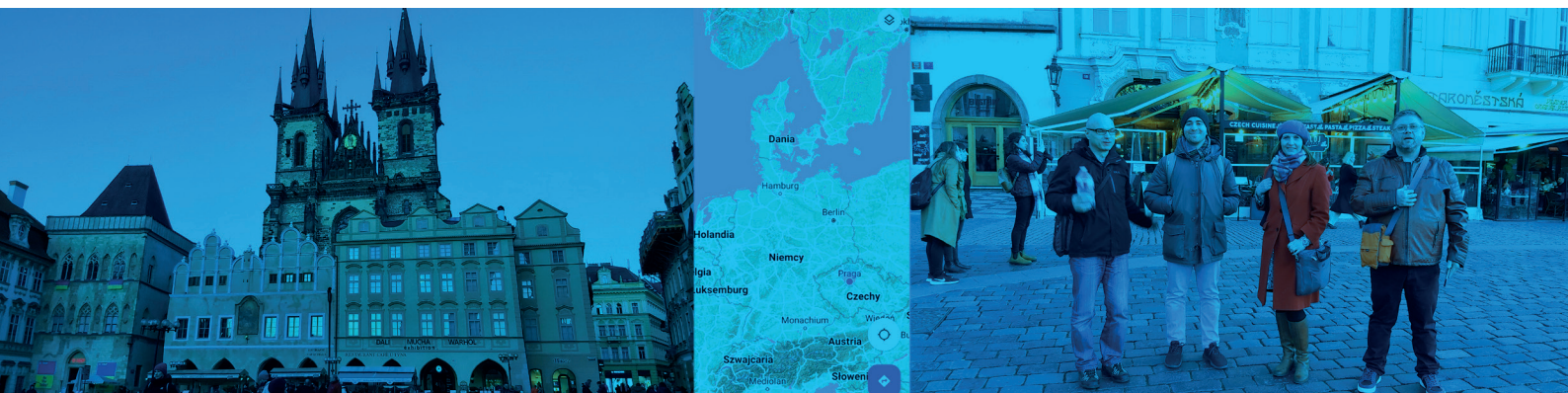
E-commerce is a rapidly growing sector of on-line services related to the purchase and sale of all types of services and goods. It is a sector that creates many opportunities for professional activation and innovative entrepreneurship in terms of creating a new offer of services or products, programming, financial transactions, computer graphics, data security systems, etc.

Virtual healthcare

A developing sector that is a consequence of the COVID-19 pandemic and the provision of medical services while maintaining a sanitary regime and security. A developing sector that is a consequence of the COVID-19 pandemic and the provision of medical services while maintaining a sanitary regime and security. This sector provides new opportunities to create new innovative medical services, especially of a basic nature, which do not require direct medical procedures. The standards of virtual medical work services will develop and generate new needs and professions to respond to the trends related to digitization.

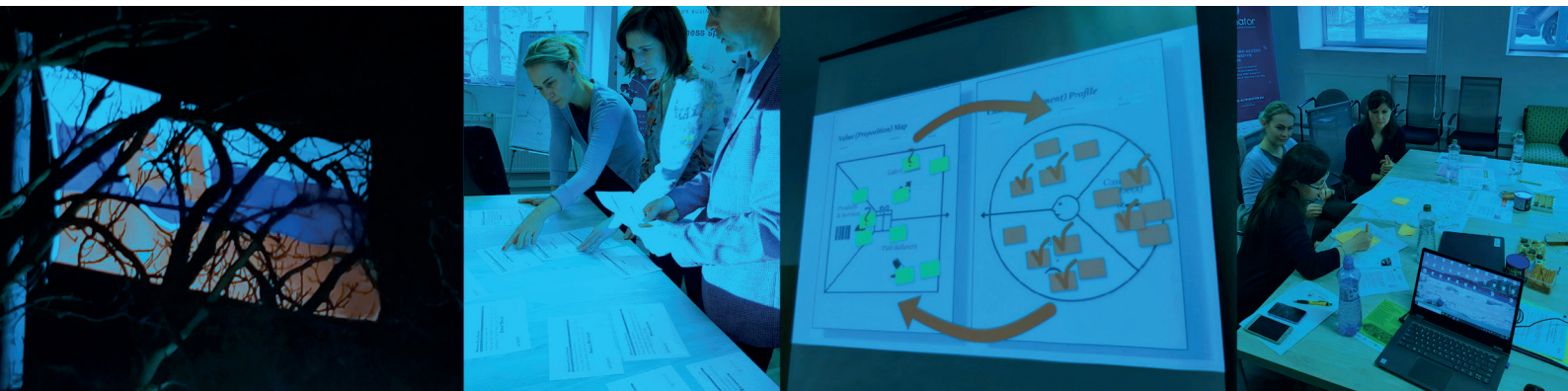
Online education/E-learning

Online education / E-learning is a sector of on-line education services. It is a sector that started to develop as a result of the COVID-19 pandemic and is very promising as it allows for multi-dimensional, cultural and exchangeable education. This sector requires the development of new educational services, forms of virtual education, a new curricular approach, and methods of education, which creates an opportunity for the development of new social and entrepreneurial services and new professions.



Job Positions	Skills	Job description
E-commerce		
Digital Commerce/ Product Manager	<ul style="list-style-type: none"> ✦ Creativity ✦ Innovation thinking ✦ Data management skills ✦ Opportunity-seeking skills ✦ Relationship-building skills ✦ Communication skills ✦ Story-telling capacity ✦ Agility skills ✦ Analytical skills ✦ Project management skills ✦ Social media advertising ✦ Marketing skills ✦ Web analytics skills 	<ul style="list-style-type: none"> Establish and maintain relationships with new and existing stakeholders who are integral to the current supply chain of products which will be for sale online Maintain digital apps and all related payment and promotional platforms and ensure accurate representation of products available Work on media and communications plans and campaign Develop creative digital marketing strategies across all digital channels for projects and events, supporting brand awareness, audience growth, e-commerce, lead generation, subscription sales and registrations Planning and controlling the budget for all digital marketing initiatives Review new technologies and keep the company at the forefront of developments in digital marketing Monitor and optimise user experience and customer journeys Evaluate, analyse, and understand the voice of the customer through a variety of data sources Identify new product opportunities and develop strategies to maximise the business opportunity

Job Positions	Skills	Job description
E-commerce		
Cyber Security Manager/Analyst/Consultant	<ul style="list-style-type: none"> ✦ Creativity skills ✦ Innovation thinking ✦ Data management skills ✦ Communication skills ✦ Agility skills ✦ Analytical skills ✦ Autonomous work ✦ Conflict priorities identification ✦ Organisational skills ✦ Technical problems solution ✦ Customer care ✦ Working knowledge of operation systems ✦ Risk management ✦ Presentation ✦ Excellent judgement and decision-making skills ✦ Teamwork promotion 	<p>Leads cyber security program</p> <p>Technical design of the cyber security solutions to clients</p> <p>Provide support to sales teams</p> <p>Documentation and presentation, reporting, communication with different departments including management</p> <p>Contribute to maintaining high level vendor contacts for the maximisation of business opportunities</p> <p>Teams' coordination to ensure consistency of message and ability to deliver integrated, high value solutions in multi-discipline bids</p> <p>Identification of further opportunities</p> <p>Making sure that the resource is tracked and capacity/utilisation reports are provided to the Head of pre-sales</p>



Job Positions	Skills	Job description
E-commerce		<ul style="list-style-type: none"> Manage, motivate and coach people to facilitate their development and effective performance as members of a motivated and empowered team Provide constructive feedback informally on a regular basis to direct reports, reinforcing the business objectives Motivate and train people, ensuring that product knowledge and skills are developed in line with business objectives and vision in the context of personal achievements Ensure good client relationships Assist in development of case studies



Job Positions	Skills	Job description
Virtual healthcare		
Virtual Nurse Coach	<ul style="list-style-type: none"> ✦ Self-starter mindset ✦ Communication skills ✦ Consultation and training skills ✦ Customer focus ✦ Technical skills & data security understanding ✦ Attention to detail 	<ul style="list-style-type: none"> Welcoming patients to our programs Educating them on the equipment they will be using Near real time review of patient vital signs Obtaining actionable information from patients with abnormal readings Using practice EMR to escalate patient situations to the provider for medical intervention Creating strong patient relationships by engaging patients regularly, (minimum weekly), through calls, automated surveys, and video visits Monitoring notifications and observing trends Creating patient centered care plans as well as reviewing monthly with patients



Job Positions	Skills	Job description
Virtual healthcare		
		<ul style="list-style-type: none"> Monitoring patient compliance with the plan of care and devices Coaching patients on healthier behaviors Partnering with practice office staff to alleviate aspects of office workload Act as first contact for patient in non-emergency situations IE med refills, office appointment and lab scheduling Determine patient motivating factors and leveraging them for best possible health outcomes Proactively managing patients to prevent urgent care or emergency room visits Provides individualized virtual care for high-risk patients as well as ongoing chronic disease management



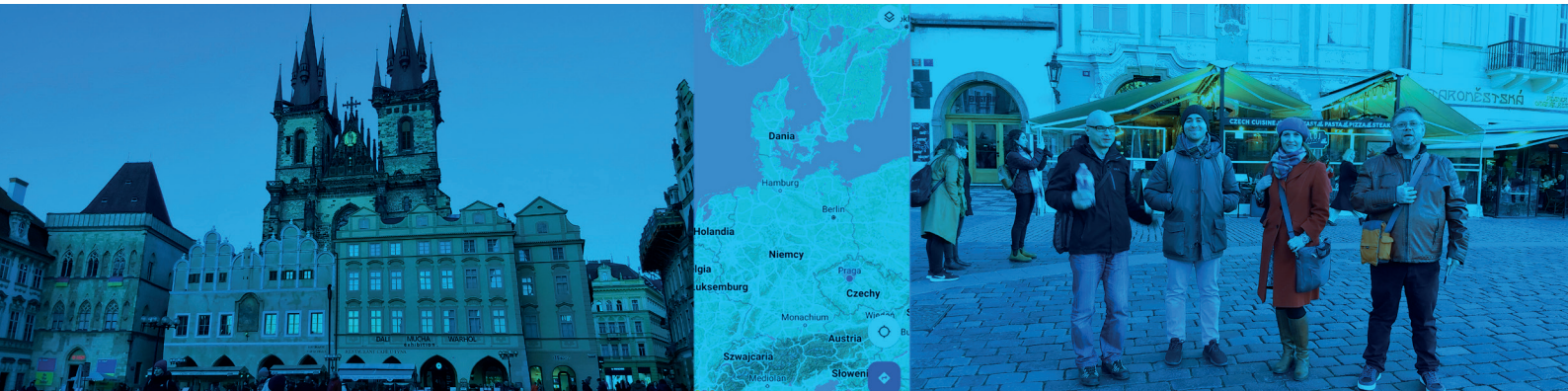
Job Positions	Skills	Job description
Online education/E-learning		
Online mentor/tutor/	<ul style="list-style-type: none"> ✦ Communication skills ✦ Organisation skills ✦ Motivating skills ✦ Leadership ✦ Language skills ✦ Technical skills ✦ Flexibility ✦ Agility ✦ Sense for detail ✦ Time management 	<ul style="list-style-type: none"> Deliver online lessons Be able to plan, prepare and structure lessons in line with current curriculum guidelines Establish positive and supportive relationships with children, parents, and staff Be innovative and creative in techniques to motivate young learners Be patient, calm and resilient with a positive attitude and a sense of humour Engage and enthuse pupils and staff through a commitment to quality learning Providing a safe and engaging environment for your student(s) and to make safeguarding the highest of priorities Provide feedback to students in a positive manner



Job Positions	Skills	Job description
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Online education/E-learning

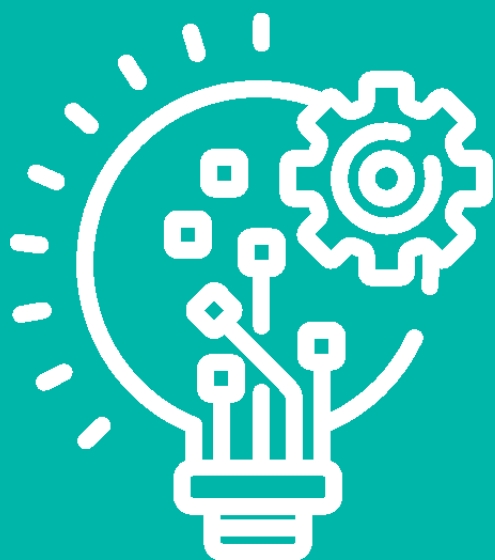
<p>E-learning specialist</p>	<ul style="list-style-type: none"> ✦ Customer focus ✦ Creativity ✦ Multitasking ✦ Innovation ✦ Analytical and problem-solving skills ✦ Organisational skills ✦ Specific technical skills (learning management systems, databases etc.) ✦ Knowledge of methodologies ✦ Communication and interpersonal skills ✦ Documentation and presentation skills ✦ Independent work ✦ Consultation and training skills ✦ Data management 	<p>Be responsible for the YouTube Learning Channel; to create and maintain video content within the Learning Channel, and drive utilization</p> <p>Manage all aspects of eLearning course development including project scoping, storyboarding, building, and revising content based on expert input</p> <p>Take a data driven approach to effectively prioritize projects and continuously improve the content development methodology and design decisions</p> <p>Help develop new metrics to evaluate our eLearning programs and determine usefulness, ease of comprehension, simplicity and ROI</p> <p>Work closely with product launch teams to determine content requirements in alignment with software releases</p> <p>Collaborate with other cross-functional content teams and promote the re-use of materials</p> <p>Implement strategies to maximise value from learning technologies that leverage digital media to instruct and educate</p>
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Job Positions	Skills	Job description
Online education/E-learning		

- Publish online course modules within our Skilljar Learning Management System (LMS)
- Support the Learning Program Managers with any needs for the localization of digital content
- Maintain source control on existing eLearning material
- Stay up to date with, and apply the use of, modern learning tools and adult learning theories
- Coach/instruct others on best courseware design practices
- Develop grant proposals
- Design curriculum
- Train and oversee the work of staff
- Function as workflow gatekeeper, making and/or challenging workflow decisions based on project, scheduling, or resource considerations





ENABLING
TECHNOLOGY,
IT SOLUTIONS,
AUTONOMOUS SYSTEMS
BASED ON ARTIFICIAL
INTELLIGENCE,
AUTOMATIZATION

ENABLING TECHNOLOGY, IT SOLUTIONS, AUTONOMOUS SYSTEMS BASED ON ARTIFICIAL INTELLIGENCE, AUTOMATIZATION

An enabling technology is defined as “Equipment and/or methodology that, alone or in combination with associated technologies, provides the means to generate giant leaps in performance and capabilities of the user. An enabling technology is an invention or innovation that can be applied to drive radical change in the capabilities of a user or culture. Enabling technologies are characterized by rapid development of subsequent derivative technologies, often in diverse fields. Key Enabling Technologies (KETs) – a group of six technologies: micro and nanoelectronics, nanotechnology, industrial biotechnology, advanced materials, photonics, and advanced manufacturing technologies – increase industrial innovation to address societal challenges and creating advanced and sustainable economies.

Artificial intelligence (AI) technologies and their application to autonomous systems (AS) have emerged as one such megatrend that is expected to have wide-ranging influence on human society going forward. Recent advances in AI applications, such as self-driving cars, smart personal assistants, image/video understanding, and game playing, have captured the public’s imagination and the interests of governments, industries, and militaries across the world. AS are machines that operate without the active intervention of a human operator. The technologies used in AS often include sensors, computers, and AI. Sometimes used interchangeably with autonomous robots, AS encom-

pass a large number of computerized machines such as unmanned vehicles on land, at sea, in the air, and in space.

Various factors such as growth of data-based AI and advancement in deep learning and need to achieve robotic autonomy to stay competitive in a global market are expected to drive the adoption of the AI solutions and services. Today, AI, including computer vision and machine learning (ML), is changing the landscape of the robotics industry. To stay ahead in a global market, businesses have started considering fully autonomous robots that can perceive, interact, and conceptualize the world around them. AI is a complex system, and for developing, managing, and implementing AI systems, companies require workforce with certain skill sets. For instance, workforce dealing with AI systems should be aware of technologies such as cognitive computing, ML and machine intelligence, deep learning, and image recognition. The integration of AI solutions with the existing systems is a difficult task, which requires extensive data processing to replicate the behaviour of a human brain. Even minor errors can result in system failure or malfunctioning of a certain solution, and this can drastically affect outcomes and desired results. The growing applications and easy deployment modes have dragged governments’ attention toward the AI technology, which has led to the growing investments by governments in AI and its related technologies. Cloud deployment for NLP and ML tools in AI is expected to grow with the increasing awareness related to the benefits of cloud-based solutions contribution to its growth in the market⁴⁷.

47 Artificial Intelligence Market Published Date: May 2021 | Report Code: TC 7894

3 main growing sectors

(Identification of the main, new, developing sectors within the trend)

Robotic Process Automation (RPA)

Robotic process automation (RPA) is a form of business process automation technology based on metaphorical software robots (bots) or on artificial intelligence (AI)/digital workers. It is sometimes referred to as software robotics (not to be confused with robot software).

In traditional workflow automation tools, a software developer produces a list of actions to automate a task and interface to the back end system using internal application programming interfaces (APIs) or dedicated scripting language. In contrast, RPA systems develop the action list by watching the user perform that task in the application's graphical user interface (GUI), and then perform the automation by repeating those tasks directly in the GUI. This can lower the barrier to the use of automation in products that might not otherwise feature APIs for this purpose.

Sensorization of Things

(Consumer electronics/ personal devices with multi-factor sensory-based trackers - voice, facial, touch, eye and gesture recognition)

Sensorization is a modern technology trend to insert many similar sensors in any device or application. Some scientists believe that sensorization is one of main requirements for third technological revolution. As a result of significant prices drop in recent years there is a trend to include large number of sensors with the same or different function in one device. Today, the technology is very advanced and modernized. Innovations and perceptual devices can be created to monitor, measure, analyse and evaluate data from the information received from the introduction of an intelligent system of evaluation and prediction in terms of safety and risk prevention. The study of intelligent sensor technology that is used to support devices that work on the guidelines of Internet of Things (IoT) leading to the development of real time data collecting applications.

Big Data and Cloud Computing

Data-enabled services

Big Data is used in decision making process to gain useful insights hidden in the data for business and engineering. At the same time it presents challenges in processing, cloud computing has helped in advancement of big data by providing computational, networking and storage capacity. The volume and information captured from various mobile devices and multimedia by organizations is increasing every moment and has almost doubled every year. This sheer volume of data generated can be categorized as structured or unstructured data that cannot be easily loaded into regular relational databases. This big data requires pre-processing to convert the raw data into clean data set and made feasible for analysis. Healthcare, finance, engineering, e-commerce and various scientific fields use these data for analysis and decision making. The advancement in data science, data storage and cloud computing has allowed for storage and mining of big data.

3 main growing sectors

(Identification of the main, new, developing sectors within the trend)

RPA tools have strong technical similarities to graphical user interface testing tools. These tools also automate interactions with the GUI, and often do so by repeating a set of demonstration actions performed by a user. RPA tools differ from such systems in that they allow data to be handled in and between multiple applications, for instance, receiving email containing an invoice, extracting the data, and then typing that into a bookkeeping system.

The first step towards machine inter-connectivity, is sensitization. IoT is leading this charge. This eliminates human monitoring and frees up resources for more critical areas. Sensors are cost-effective ways to measure variables such as temperature, moisture, air quality, motion and vibration, among others. This enables equipment to auto-detect issues, which leads to auto-triggers and auto-configurations from a software and hardware perspective. For example, the implementation of non-contact temperature sensors allows for the auto-adjustment of roller speeds when gluing two pieces of cardboard together at a cardboard manufacturing facility. This data can then be utilized to improve the bonding conditions and durability of the final product.

Despite all the advantages of integration between big data and cloud computing, there are several challenges in data transmission, data storage, data transformation, data quality, privacy, governance.

Big data business applications:
Utilities: Power consumption prediction Utility companies use smart meter to measure gas and electricity consumption. These devices generate huge volumes of data. A big data infrastructure needs to monitor and analyse power generation and consumption using smart meters.

Social Network: Sentiment analysis Social networking companies such as Twitter needs to determine what users are saying and topics which are trending in order to perform sentiment analysis.

Telecommunication: Predictive analytics: Telecommunication provides need to build churn models which depends on the customer profile data attributes. Predictive analytics can predict churn by analysing the subscribers calling patterns.

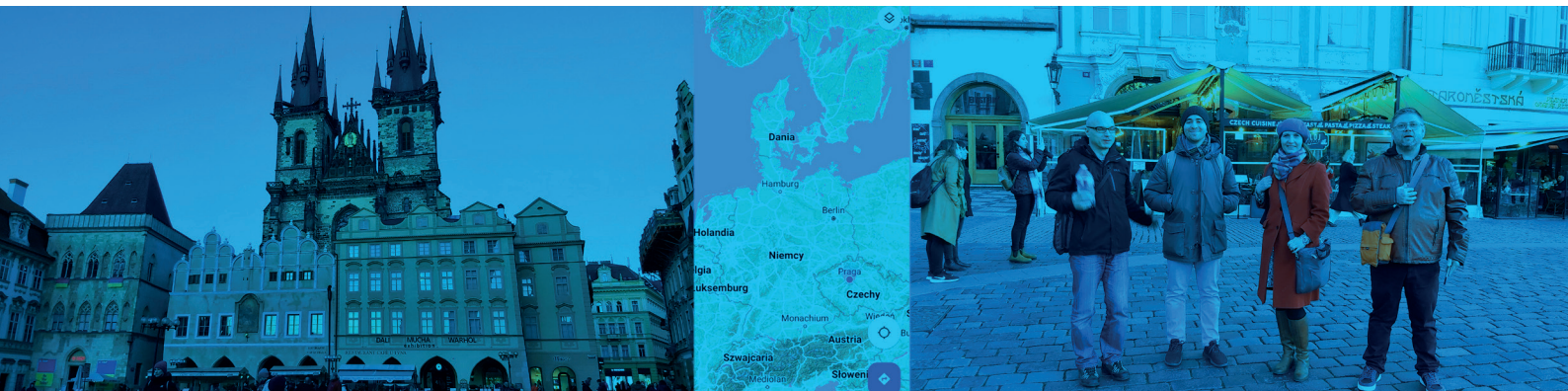
3 main growing sectors

(Identification of the main, new, developing sectors within the trend)

Customer Service: Call monitor Call center big data solutions use application logs to improve performance. The log files needs to be consolidated from different formats before they can be used for analysis.

Banking: Fraud Detection Banking companies should be able to prevent fraud on a transaction or a user account. Big data solutions should analyse transactions in real time and provide recommendations for immediate action and stop fraud.

Retailers: Product recommendation Retailers can monitor user browsing patterns and history of products purchased and provide a solution to recommend products based on it. Retailers need to make privacy disclosures to the users before implementing these applications.



Job Positions	Skills	Job description
Robotic Process Automation (RPA)		
Robotics, Autonomous systems engineer	<ul style="list-style-type: none"> ✦ Hands-on experience developing autonomous unmanned systems ✦ Strong programming skills in ROS, Python, and C/C++ ✦ Familiarity with image processing algorithms including machine learning approaches ✦ Experience with real time software and real time operating systems ✦ Design and layout of custom printed circuit boards ✦ well-versed in computer science ✦ excellent knowledge of CAD/CAM software ✦ knowledge of cost, efficiency, and productivity optimization methods ✦ he ability to develop and evaluate integrated systems ✦ A degree in engineering or computer science is commonly considered mandatory 	<p>A Robotics Engineer is responsible for designing prototypes, building and testing machines, and maintaining the software that controls them. The job description entails researching to find the most cost-efficient and safest process to manufacture robotic systems. A well-written Robotics Engineer Resume mentions the following duties and responsibilities – conducting research to determine the parameters, designing robotic systems from start to finish, developing and implementing software that controls robots, creating prototypes and work on necessary components, applying machine learning techniques, monitoring the use of robotics systems and optimizing their functionality, troubleshooting defects in the robot design, and keeping abreast of advancements in robotics and relevant fields of engineering.</p> <p>Develops new technology concepts with strategic impact focused on robotics, autonomy, robotic perception, mobile manipulation, and human-robot interaction. Leads projects, proposals, relationship building, and the development of new autonomous and robotic systems technology.</p>

Job Positions	Skills	Job description
Robotic Process Automation (RPA)		

Designs and develops robotic prototypes. Constructs, configures, tests, and debugs robots and robotic systems. Installs, operates, calibrates, and maintains robots. Ensures that robotic machines operate safely, dependably, and with precision; identifies and implements modifications.

Defines and develop system-level strategies/requirements needed to establish a safety case for Autonomous Vehicle platforms; supports and contribute to safety & reliability analysis; assists in complex system level development of technical requirements for automated vehicles; develops system level diagnostic and fault mitigation strategies; develop complex vehicle architectures to ensure system safety.



Job Positions	Skills	Job description
Sensorization of Things		
IoT Platform Engineer	<ul style="list-style-type: none"> ✦ Passion for technology & understanding how things work ✦ Knowledge or know-how of fundamental elements of IoT systems and have the skills needed to design and build E2E system propositions ✦ Experience in IoT Platform with one or more of the following: Java SE, java EE, Javascript, Scripting languages, i.e. python, shell scripts ✦ Experience with CDI tools, such as, Jira, Jenkins, Nexus, Sonar, GIT, Confluence et al. ✦ Very Good English languages skills (minimum B2 level) ✦ Experience working on different data platforms ✦ Exposure to one or more data analysis tools desired (R, Python, etc.) ✦ Knowledge of Agile methodology. ✦ Experience in developing & deploying large scale enterprise backend & frontend software systems & web applications. 	IoT Platform Engineer is responsible for IoT ecosystem; working with IoT sensors & devices; learning & building using very modern and market leading application enablement tools; evaluating and providing detailed technical feasibility study of IoT platform suppliers/vendor

Job Positions	Skills	Job description
Big Data and Cloud Computing		
Software engineer/developer	<ul style="list-style-type: none"> ✦ Computer Programming and Coding. ✦ Software Development ✦ Object-Oriented Design (OOD) ✦ Software Testing and Debugging ✦ Problem Solving and Logical Thinking ✦ Written and Verbal Communication ✦ Teamwork 	<p>The job description includes: improving system quality by identifying issues and common patterns, and developing standard operating procedures; enhancing applications by identifying opportunities for improvement, making recommendations and designing and implementing systems; maintaining and improving existing codebases and peer review code changes; Liaising with colleagues to implement technical designs; Investigating and using new technologies where relevant; Providing written knowledge transfer material.</p>





URBANIZATION AND SMART CITIES DEVELOPMENT

URBANIZATION AND SMART CITIES DEVELOPMENT

A smart city is a technologically modern urban area that uses different types of electronic methods, voice activation methods and sensors to collect specific data. Information gained from that data are used to manage assets, resources and services efficiently; in return, that data is used to improve the operations across the city. This includes data collected from citizens, devices, buildings and assets that is then processed and analyzed to monitor and manage traffic and transportation systems, power plants, utilities, water supply networks, waste, crime detection, information systems, schools, libraries, hospitals, and other community services. The smart city concept integrates information and communication technology (ICT), and various physical devices connected to the IoT (Internet of things) network to optimize the efficiency of city operations and services and connect to citizens.

The creation, integration, and adoption of smart city capabilities require a unique set of frameworks to realize the focus areas of opportunity and innovation central to smart city projects. The frameworks can be divided into 5 main dimensions which include numerous related categories of smart city development – technology, human, institutional, energy, and data management framework. Growing urbanization, need for efficient management and utilization of resources, demand for fast and efficient transport and commuting, public safety concerns, and increasing demand

for a healthy environment with efficient energy consumption are expected to be the major factors driving the growth of the Smart Cities market. The reduction in energy consumption and concern over the proliferation of environmental wastes are major driving factors for the adoption of smart city solutions. Increasing concerns over global warming and ozone depletion have accelerated the efforts of governments of developed and developing countries to control their carbon footprint, with governments imposing stricter regulations to limit emissions. The implementation of intelligent infrastructure automation, smart grids, and controlling systems contribute significantly to reducing power consumption and carbon emissions, which minimizes losses and optimizes operations. The rise of 5G technology has brought major changes to the cloud computing world. The low latency connectivity provided by 5G enables smoother communications and faster data transfers. 5G enables quick access to video analytics and AI that makes the city a safer place. This enables city managers, building owners, and facility managers to make informed decisions and provide intelligent public services. The evolution of 5G is yet to realize its full transformational potential and provides a great growth opportunity for the smart cities market.

The Infrastructure Monitoring and Management service of the Smart Utilities segment is expected to have the highest growth rate during the forecast period⁴⁸.

3 main growing sectors

(Identification of the main, new, developing sectors within the trend)

Smart Building(s)

Smart buildings are the enabler of smart cities, cities that use data to generate and realise efficiencies in the provision of services; Smart buildings engineered to use energy more efficiently, for example, can generate vast savings in the running of urban infrastructure. A multitude of technologies has been deployed as part of efforts to create smart cities. IoT and other technologies have been deployed to ease the flow of congestion, monitor the workings of streetlights and measure the cleanliness of public places. Creating clusters of smart buildings that can exchange information between each other in this way will expedite the creation of smart cities and allow developers to redevelop the urban landscape.

A smart building involves the installation and use of advanced and integrated building technology systems. These systems include building automation, life safety, telecommunications, user systems, and facility management systems. Smart buildings, which connect building operations through the Internet of Things (IoT), simplify tasks like controlling building temperature, security and maintenance through mobile devices and computers.

Smart Infrastructure

Smart Infrastructures comprise several operators from different domains of activity, such as energy, public transport, and public safety. They deploy and operate “cyber-physical systems”, that are data-controlled equipment which interact with the physical world. Smart cities use data and technology to create efficiencies, improve sustainability, create economic development, and enhance quality of life factors for people living and working in the city. It also means that the city has a smarter energy infrastructure. Smart infrastructure, enabled by technologies like IoT, offer numerous of advantages bringing serious cost savings and efficiencies. These kinds of data-driven environments, fuelled by connected devices and network connectivity, become a new attack surface for cyber threats.

Smart transportation/mobility

Smart transportation includes the use of several technologies, from basic management systems such as car navigation; traffic signal control systems; container management systems; automatic number plate recognition to speed cameras to monitoring applications, extending to more advanced applications that integrate live data and feedback from multiple external sources.

Smart transportation, by definition, is an approach that incorporates modern technologies into transportation systems. This includes cloud computing, wireless communication, location-based services, computer vision, and other tools to enhance mobility.

A smart transportation network is clean and efficient. Reduced traffic congestion results in cleaner air, less wasted time and reduced energy consumption. And cities that are working to accommodate electric and, eventually, autonomous connected vehicles can expect to realize even greater environmental benefits.

Job Positions	Skills	Job description
Smart Building(s)		
Urban development/ planner specialist	<ul style="list-style-type: none"> ✦ Vision: the ability to envision physical and social alternatives to the existing urban context ✦ Data collection: often in challenging environments over a short period of time, requires not only qualitative or quantitative research skills, but also exceptional organisation skills and adapting to changing circumstances ✦ Analysis: make sense of demographic information to recognize urban trends. Analysis of the overall context, data and stakeholders make up the early stages of the planning process ✦ Understanding social and environmental impact of plans, as well as design and aesthetics ✦ Communication (external): being able to clearly articulate plans, whether one-on-one, with a public presentations or in a report, should not be underestimated ✦ Communication and collaboration (internal): create an environment where information is shared – the more constant and clear communication, the more effective team 	<p>Formulate and articulate policies and strategies on the urban sector. Engage in dialogue with the governments concerning urban development issues including urban planning, urban and municipal management, urban environmental management, and private sector participation in provision of municipal services. Lead in identifying, developing, processing, implementing and administering loans, technical assistance (TAs) projects, and non-lending products and services (NLPS) for the urban sector. Urban planners identify the best way to meet community needs in terms of infrastructure and handling growth. This involves overseeing all aspects of planning, including reviewing research on economic and environmental impacts.</p>



Job Positions	Skills	Job description
Smart Building(s)		

- ✦ Communication and collaboration (internal): create an environment where information is shared – the more constant and clear communication, the more effective team
- ✦ Project management: managing resources (personnel, financial and and IT). Before work commences, it's vital to identify a team with the right mix of skills and realistically estimate the timeframe and budget required to get the job done
- ✦ Lead a multidisciplinary team
- ✦ Stakeholder management: involving and influencing the range of stakeholders. Negotiation, facilitation, mediation and advocacy
- ✦ Delivering despite the constraints



Job Positions	Skills	Job description
Smart Infrastructure		
<p>Chief technology officer & smart cities director</p>	<ul style="list-style-type: none"> ✦ Experience working in the public and/or government sector in a role that involved planning, procurement, deployment, and support of technology solutions ✦ Leading stakeholder engagement processes to work with others to solve problems collaboratively ✦ Experience working with Smart City technologies and data, Internet of Things technologies, and usercentered design approaches ✦ Managing complex projects within a structured reporting framework, on time, to budget and to client satisfaction ✦ High-level communication skills; the ability to convey and impart complex information in an easy-to-understand format, including report writing, slide presentations, diagrams, and data visualizations. 	<p>Position summary: The CTO and Smarter Cities Director collaborates with IT staff, City stakeholders, partners, vendors, and members of the community to develop a Smart City strategy that ensures that technology investments & Smart City projects are well-coordinated; comply with City laws, policies, and standards; are designed and implemented to meet business needs and the goals of the City. The strategy will also ensure that Smart City solutions are supportable and maintainable by the City's IT and appropriate City department staff and are aligned with the community's interests and vision. The CTO is also a resource to City departments who are planning Smart City projects to assist them in developing their projects; help shepherd projects through the project governance and procurement processes; and ensure the projects can be successful. The CTO helps City departments envision "the art of the possible" with regard to technology, helps them research and evaluate potential solutions, and helps them derive insights and intelligence from analysis of data.</p>

Job Positions	Skills	Job description
Smart Infrastructure		

The CTO will also manage teams that partner with city departments to identify opportunities (e.g., revenue, costs, service improvement), performance management/ improvement programs and resilience. The CTO and the CTO's team will ensure accountability and decision making is driven by data across City government. Finally, the CTO develops relationships and conducts outreach with the community by fostering partnerships, stakeholder engagement, internally and externally, establishes broad support for initiatives, and identifies opportunities for collaboration.

Essential functions:
 The Chief Technology Officer (CTO) & Smart Cities Director will:

- ✦ Design and establish technology and data policies to ensure that infrastructure is leveraged across the enterprise and that data is made available to the public per the City's Open Data strategy.

Job Positions	Skills	Job description
Smart Infrastructure		
		<ul style="list-style-type: none"> ✦ Collaborate with City departments to administer performance management and improvement programs ensuring alignment with administration priorities. ✦ Assist departments in identifying and capturing opportunities to improve costs, revenue and or service delivery. ✦ Prioritize and identify funding of “Smart City” infrastructure, programs and projects to drive innovation. ✦ Serve as a resource to help departments ensure that Smart City projects comply with City laws, policies, and standards, and are designed and implemented to meet business needs and the goals of the City. ✦ Work with appropriate IT team to ensure City standards of enterprise architecture, project management, procurement, security, privacy, social equity, data management, and performance are factored into technology strategy.

Job Positions	Skills	Job description
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Smart Infrastructure

- ✦ Maintain a high level of education and awareness of developments in the Smart City technology environment. Attend meetings, demos, conferences, and other events that are relevant to maintaining a current understanding of IT and Smart City technologies.
- ✦ Work with technology, public safety, and water management departments and stakeholders to develop/implement resilience strategy.

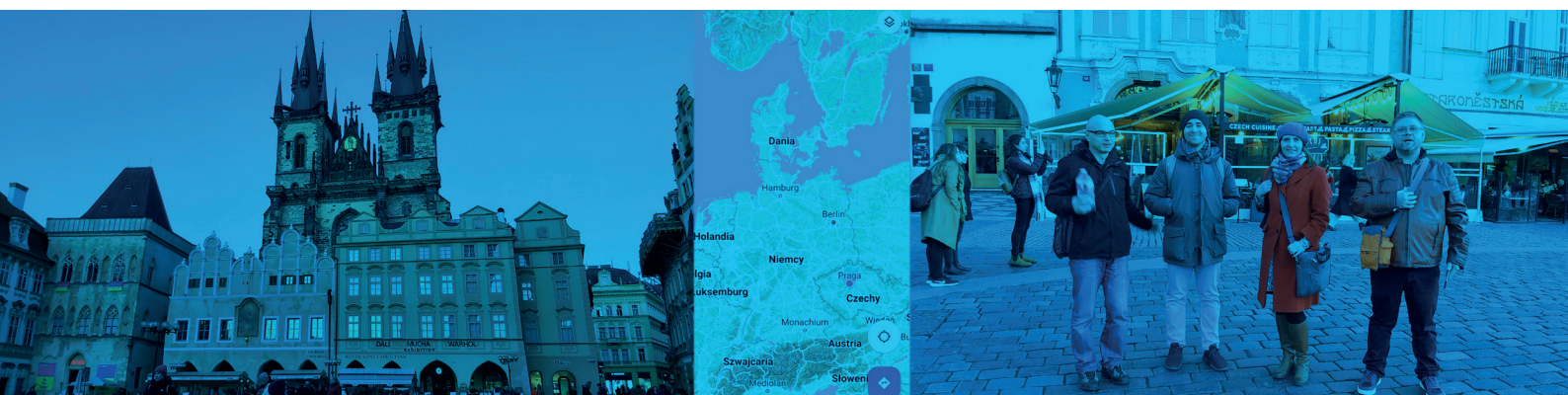
Smart transportation/mobility

Smart Mobility Manager

- ✦ Ability to communicate effectively both orally and in writing. Ability to communicate technical information in non-technical, understandable ways.
- ✦ Ability to present information to a wide variety of audiences including Council, the public and staff.

Essential Duties and Responsibilities:

- ✦ Manages the ITS/Smart Mobility program including traffic data management, citywide fiber optic communications, a complex adaptive signal system and the transportation management center.



Job Positions	Skills	Job description
Smart transportation/mobility		

- ✦ Ability to negotiate effectively with employees, other business units and departments, outside agencies, consultants, contractors and the general public.
- ✦ Ability to plan, organize and monitor the work and activities of self and direct reports.
- ✦ Ability to plan, organize and monitor activities according to priorities, established schedules and deadlines.
- ✦ Ability to provide leadership, coaching, motivation and constructive performance reviews to staff, securing their respective commitments to the department's vision.
- ✦ Ability to take general direction from assistant director or director and implement that direction through division resources.
- ✦ Considerable knowledge of applicable City policies, laws and regulations affecting department activities.
- ✦ Knowledge of Vision Zero initiatives.

- ✦ Leads implementation of the initiatives developed in the Smart Mobility Plan.
- ✦ Coordinates pursuit of public/private partnerships to advance deployment of new mobility technology (autonomous, electric, connected and shared vehicles).
- ✦ Sets the strategic direction for the ITS/Smart Mobility program. Manages routine updates of the Smart Mobility Plan.
- ✦ Establishes and monitors program scope, schedules and budget; defines the program goals, priorities, policies and procedures for program execution; identifies and addresses concerns that may pose technical, schedule or financial risks to projects.
- ✦ Supervises the work of engineering staff, project teams and others; provides guidance, mentoring and evaluates performance.

Job Positions	Skills	Job description
Smart transportation/mobility		

- | | |
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| <ul style="list-style-type: none"> ✦ Ability to use a computer and effectively navigate Microsoft Office Suite, engineering applications and data management software in performing essential duties. ✦ Understanding of traffic signal operations including the use of operational tools such as data collection technologies and traffic surveillance cameras. ✦ Understanding of new mobility technologies such as electric, connected, shared and autonomous vehicles. ✦ Understanding of traffic analysis and simulation. ✦ Experience with fiber optic design and traffic signal communication systems. | <ul style="list-style-type: none"> ✦ Defines and implements standards, guidelines and performance goals for complex and highly technical smart mobility and traffic signal system projects. ✦ Defines the level of traffic operational support for staff during special events, emergencies and routine daily operations. ✦ Oversees the staff that ensures traffic signal operations meets applicable federal, state and city standards and codes. ✦ Collaborates with other divisions, departments and outside agencies. ✦ Responds to complex and politically sensitive customer inquiries and issues; provides technical expertise to resolve issues. ✦ Makes presentations to a wide variety of audiences from Council to the public. Leads responses to traffic related media inquiries including on-camera and radio interviews. |
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Job Positions	Skills	Job description
Smart transportation/mobility		
		<ul style="list-style-type: none"> <li data-bbox="1010 376 1444 801">✦ Attends weekly manager’s meeting with the work-group assistant directors and peer Mobility Management division managers. Coordinate with other division managers to ensure effective and informed decision making and communication on department issues. <li data-bbox="1010 813 1444 1283">✦ Assigns questions and concerns from residents, outside agencies and the general public regarding traffic control facilities and day to day traffic operations. Ensures requests are prioritized and tracked. Modifies staff responses as needed and leads higher profile or politically sensitive responses. <li data-bbox="1010 1294 1444 1843">✦ Develops budget proposals for various staff and programs. Answers budget inquiries from budget reviewers, management and the public. Develops and track performance measures for all programs and functions. Participates with Assistant Director in budget monitoring and implements direction on budget adjustments during the fiscal year.

Job Positions	Skills	Job description
Smart transportation/mobility		
		<ul style="list-style-type: none"> ✦ Assists in the development of work plans to ensure coordination between engineering and our operations and maintenance division. ✦ Serves as the expert witness on the operation of the traffic systems in matters of litigation. Assists in defending the City against tort liability lawsuits relating to traffic operations. ✦ Mentors, develops and evaluates staff. ✦ Maintains regular contact with consulting engineers; construction project engineers; city, state and federal agencies; professional and technical groups; and the general public regarding smart mobility activities and traffic signal operations. ✦ Establishes and maintains a working environment conducive to positive morale, individual style, quality, creativity and teamwork. ✦ Coordinates with Information Technology Department in the operation and maintenance of the city's fiber optic network. ✦ Oversees staff performing traffic operational analyses.



LESSONS SCENARIOS

LESSON SCENARIO 1

“Turn on creativity”

ASSUMPTION: awakening non-standard forms of thinking and stimulating creativity

TIME: 45 min

WORKING METHODS: group work, brain storm, creative work

MATERIALS: A4 paper, pens or flipchart and markers

GOAL: development of the creative thinking of youth

LESSON STEP BY STEP

1. Introduction to the work- secrets of creativity thinking - 3 min
3. Work group- creative work based on **EXERCISE 1- Unexpected connection** – 10 min
4. Exercise 1 results presentation- 10 min
5. Work group- creative work based on **EXERCISE 2- Alternative Use** – 10 min
6. Exercise 2 results presentation- 10 min
7. Conclusions- 2 min

CREATIVE THINKING TOOLS

EXERCISE 1 - Unexpected connection

The exercise is to establish a logical connection between the first and the last word through loose associations

BOOK		
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TIPS:

YOU NEED: open mind

DIFFICULTY SCALE: easy

TIME: 10-15 minutes

GOAL: creativity thinking development

EXERCISE 2- Alternative Use

The exercise consists in finding an alternative use of the indicated item

BUTTON		

TIPS:

YOU NEED: open mind

DIFFICULTY SCALE: easy

TIME: 10-15 minutes

GOAL: creativity thinking development

LESSON SCENARIO 2

“The Worst Possible Idea - The Best One Idea”

ASSUMPTION: Some people clam up in group sessions such as brainstorming. With their peers surrounding them, they may be reluctant to offer input, fearing their ideas will make them look silly or short-sighted. Young people may also hold back on mentioning—and then forget—fragments or beginnings of plans that are actually valuable, fearing someone will humiliate them.

When using the Worst Possible Idea technique, you avoid this by flipping the playing field. The name of the game is to produce the silliest, craziest ideas. Therefore, as nobody can look silly, nobody will worry about losing face. Better still, because the premise of the approach seems ridiculous, the group’s laughter relaxes us further as we proceed.

TIME: 45-60 minutes

WORKING METHODS: group work, brain storm, creative work

MATERIALS: A4 paper, pens or flipchart and markers

GOAL: development of the creative thinking of youth

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LESSON STEP BY STEP

The real power of Worst Possible Idea is what happens after we start to feel more at ease about offering our thoughts. Although you and your team are free to kick back and try for the most ludicrous-sounding notions, there is a method to the madness.

To practice Worst Possible Idea, as group members we should:

- ✦ Define a problem (5 minutes)
- ✦ Form groups (2-5 people)
- ✦ Each group come up with as many bad ideas as they can to solve the problem (10 minutes)
- ✦ List all the properties of those terrible ideas (6 minutes)
- ✦ List what makes the worst of these so very bad (6 minutes)
- ✦ Try to transform the worst idea in a presentable and possible idea (18 minutes)
- ✦ Present the idea to other groups. (2 minutes for each group)

Total time (45-60 minutes)

LESSON SCENARIO 3

“Is my idea/project innovative?”

ASSUMPTION: helping young people to independently evaluate ideas in terms of innovation

TIME: 45 min

WORKING METHODS: group work, discussion, analysis, graphical chart

MATERIALS: A4 paper, pens or flipchart and markers

GOAL: idea/project evaluation profile

LESSON STEP BY STEP

1. Introduction to the work- participants, goals, time- 5 min
2. Idea/projects short presentations- 10 min
3. Work group- idea/project evaluation based on INNOGRAPH ASSESEMENT TOOL- 20 min
4. INNOGRAPH ASSESEMENT TOOL presentations and conclusions- 10 min

INNOGRAPH ASSESEMENT TOOL

It is a tool to be used in educational work with young people, which helps to evaluate youth projects according to criteria related to innovation, innovative entrepreneurship and social innovation.

The idea/project is evaluate according to 7 areas:



CUSTOMERS - is the idea/project addressed to a specific group of recipients, social groups, does it respond to their specific features, social and economic needs?



INTELLECTUAL - whether the project uses new knowledge and / or other new resources?



NOVELTY - does the idea / project create a new solution, e.g. a new product / service, a new improvement of existing services / products and / or a new combination of existing products / services?



SOCIAL - whether the implementation of an idea / project can contribute to a wider social and economic change?

€ **FINANCIAL** - does the idea / project have potential for commercialization?

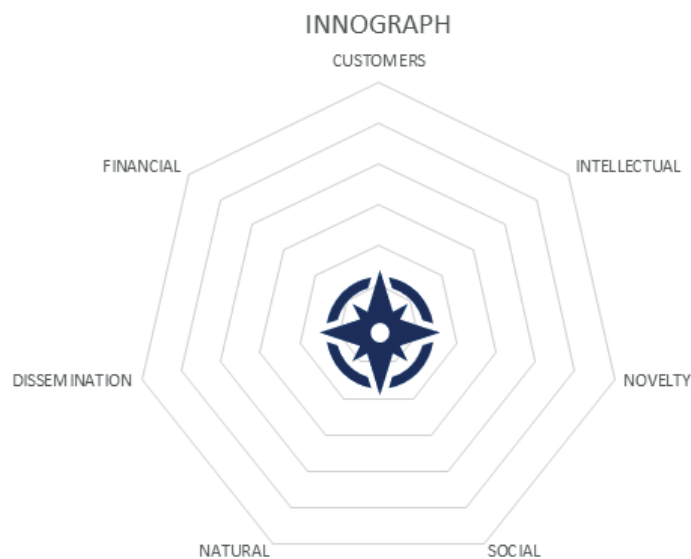
♻️ **NATURAL** - is the idea / project based on the values of environmental and climate protection, or does it use circular economy strategies?

📊 **DISSEMINATION** - whether the idea/project has a chance for wide dissemination?

Participants evaluate their own idea/projects according to a 5-point scale, assessing each of the above-described areas:

- 1 - strongly disagree
- 2 - disagree
- 3 - neutral, neither agree or disagree
- 4 - agree
- 5 - strongly agree

The evaluation is placed on the graph:



The tool helps to assess which areas require work and development, i.e. those that have been rated 1-2, neutral area, and that are already a strong side of the idea!

TIPS:

DIFFICULTY SCALE: easy

YOU NEED: already identified idea/project

TIME: 15-20 minutes

LESSON SCENARIO 4

“What if- think out of the box”

ASSUMPTION: supporting young people in the development of an idea / project to make it more relevant to the needs, innovative, interesting

TIME: 45 min

WORKING METHODS: group work, brain storm, creative work

MATERIALS: A4 paper, pens or flipchart and markers

GOAL: development of the creative thinking of youth

LESSON STEP BY STEP

1. Introduction to the work- ideas/project short presentations – 5 min
2. Work group- brain storm group work based on “What if” questions, to which participants must respond in relation to their idea/project – 20 min

Set of “What if” crazy questions:

1. What if it was in 10 years?
2. What if it for aliens?
3. What if you couldn't access it over the internet?
4. What if it was in North Pole?
5. What if it is during war?
6. What if you can only use it 24 hours?
7. What if you need to involve robots?
8. What if your business idea must target at least three SDGs ([Sustainable development goals](#))?
9. What if your product/service must comply with the principles of [Circular Economy](#)?
10. What if you are working for a [Non-Profit Organization](#)?
11. What if your idea has no business case?
12. What if you want to achieve the impossible thing?
13. What if you lose all your money/bankrupt?
14. What if you find yourself in a situation of too much pressure/of wanting to quit?
15. What if no one/few need(s) your product/service?
16. What if your business idea finds expression/extends in a multi-billion enterprise?

3. Work group- list the worse idea and the best idea- 10 min

4. Work group- choice the best idea and explain what you can adapt it to your project- 10 min



NOTES ABOUT THE AUTHORS OF THE MANUAL

NOTES ABOUT THE AUTHORS OF THE MANUAL



Magdalena Szczudło – Dreamer. 16 years of experience in animating and developing innovative solutions for social problems, creating social innovations for various groups and their human right protection (youth, social leaders, teachers, local self- governments, vulnerable groups- elderlies, refugees, people with disabilities etc.) developing projects and programs for institutional capacity building of CSOs and democratic good practices in Poland, Europe, Africa, Latin America, financed by various institutions. She has extensive experience in training, coaching and consulting. Since 2018 she works as so-

cial innovation and international cooperation specialist in FSLD, she is responsible for Incubator of Social Inclusion program, which support social innovation incubating and testing process in Poland. She is also responsible for international cooperation projects, cross-border projects and such task as: project management, budget management, strategic planning and monitoring, partnership management. She graduated Political Science in Jagiellonian University, Krakow, Poland (MA degree, 2003).



Robert Miskuf – Optimist. Received €8.02M in EU/US grants. Managing two kids and a portfolio of projects worth € 40.1M EUR. Robert is the Founder and CEO of PEDAL Consulting and Tenderio. Robert has been involved in over 50 FP7/H2020 projects and coordinated several international tenders including the \$ 3M USAID contract, which is an unprecedented effort on the EU territory. Frequent speaker at high level events on public procurement organized by the European Commission or under the EU presidencies.



Jana Bielikova – She is an optimist with intrinsic motivation and a strong sense of responsibility towards society and the environment. Jana focuses mainly on implementation of EU funded projects in the field of sustainability. Prior to her current position at PEDAL, she gained more than 10 years' experience at Slovak Business Agency, where she worked in various roles, including the last position as the Head of the Department of International Projects.



Miroslav Polacek – Senior Project Manager at PEDAL Consulting. Miro has more than ten years of professional experience in developing, implementing and managing International and EU funded projects in areas such as innovation in SMEs, start-up support, cluster support and innovative learning. Until recently, Miro has been the Head of the International Projects Department at the Slovak Business Agency where he served also as the H2020 National Contact Point for the Innovation in SMEs.



Marco Rogai – He has a strong passion for complexity, the topics that need time and effort to be completely understood. Environment is one of them and he will always work to defend it, as well as improving the social and economic sustainability of our society. Marco is a Junior Project Manager in PEDAL Consulting with a strong passion and a solid knowledge in several fields of environmental economy (Circular, Bio, and Green).



Zdeňka Havlíková – Zdenka is a project expert, coach and specialist in the field of personal and career development. She holds a Master's degree in Education and Business Economics and Management. She is an experienced project designer and manager. Over the past twelve years she worked across non-profit, private as well as public sectors. She was active as a grant writer, project designer & manager, coach, education expert, trainer, researcher and evaluator. She has been involved in more than 30 national & international projects that sought to solve challenges in our society and built an extensive network of cooperating institutions globally.



Radka Muchová – Radka is an experienced project and process manager with a background in linguistics. She was active as a consultant in the field of vocational education and training and tertiary education. Radka has also experience in managing international relationships in the academic sector and managing internal processes in the corporate sector. Currently, she works as a project manager in private and NGO sector and manages mainly educational projects on both national and international level.



Vojtěch Šmolík – Vojta is project manager and administrator with education background in political science, international relations and African studies. During studies, he worked as a volunteer (Czech Republic, Kenya), team&project coordinator and junior policy officer for several Czech NGOs in the field of development cooperation and humanitarian assistance. His professional experience extends to project leadership in the corporate sector and participation in internationalization (Erasmus, International Credit Mobility, IaH) and life-long education projects in academia, including promotion on social media.



Demir Deyanov – project coordinator at FLGR, has more than 20 years of professional experience in NGO sector, diving deeply in areas as support to local communities, local economic development and strategic planning at the local level. He has been involved in implementation of a number of USAID, ICMA, SDC and EU funded public administration development, good governance and capacity building projects and grant schemes.



PROJECT PARTNERS

PROJECT PARTNERS



POLAND – Foundation in Support of Local Democracy (FSLD)

www.frdl.org.pl

The Foundation in Support of Local Democracy (FSLD) is the largest Polish non-governmental organization supporting the development of civil society and self-governance in Poland. FSLD is non-partisan, independent, and non-commercial entity. FSLD was established in 1989 and over the years FSLD has grown to incorporate a network of local units and education institutions, as well as numerous experts and collaborators. Today, FSLD with 14 Regional Centres with local branches is designed to provide training, consultancy, networking and capacity building services on local level in voivodships outside the capital of Warsaw. Foundation has 125 permanent employees and cooperates with ca. 150 experts and trainers. FSLD's activities and programs cover the territory of the entire country.

FSLD's mission is to promote the idea of civil self-governance as the fundamental form of democracy. To fulfil its mission, the Foundation supports the activity of local authorities and non-governmental organizations, thus contributing to the development and reinforcement of the civil society in the region.

FSLD's activities are aimed at benefi-

ciaries representing 3 sectors including all levels of public administration, CSOs, informal groups and individuals (vulnerable social groups), as well private sector (small and medium-size companies and media). 30 years of Foundation's experience resulted in natural, thematic and special-purpose partnerships established with: the Council of Europe; Ministries – structural programmes and projects; local authorities; media – media patronages, information campaigns, co-organisation of big public events; CSOs.

FSLD REGIONAL CENTRES

FSLD has a network of 14 Regional Centers with local branches. Each Regional Centre is based in voivodship capital and provides services in the region. Every regional centre employs from 5 to 35 permanent staff members. Network-based model of FSLD's functioning and everyday operation on local level allows the most efficient work in regions and rural areas of the whole country, based on good identification of the local communities' needs, challenges and problems. Every year each FSLD's regional centre runs from 100 up to 450 trainings and consultancy services for local self-government units and CSOs.



CZECH REPUBLIC - EDUcentrum, z.ú

<http://www.educentrum.eu/>

EDUcentrum is a non-profit organisation. Its aim is to encourage creative and innovative forms of education, support youth work, employability and entrepreneurship, promote diversity and social inclusion, foster motivation for lifelong learning, increase adaptability and promote a proactive attitude towards further education across various age, social and professional target groups.

Within its projects, EDUcentrum promotes initiatives in the field of support for the development of youth workers' skills and their competences in leadership, social inclusion, diversity, intercultural dialogue and common values of tolerance, democracy and multiculturalism. The organisation strives to support youth employability and entrepreneurship with focus on social entrepreneurship. It also provides support to gifted and talented pupils, teachers and parents and develops related strategies and trainings.

EDUcentrum has long-term experience in research and designing new learning and training tools. Within its projects a wide range of intellectual outputs focused on implementation of innovative methodologies and use of ICT in education have been developed, as well as tools for distance and blended learning. The NGO specialises on design of materials for trainers and youth learners, didactic tools to facil-

itate the application of new methodologies or testing and comparative tools for progress evaluation of youth learners.

Trainers and experts of EDUcentrum have been involved in a number of projects focused on the development of skills and competences of young people, their teachers and youth workers. They always try to implement different strength-based approaches in our work as this proves to bring more efficient results compared to deficit-based approaches. EDUcentrum has implemented several LLP, ERASMUS+ and Visegrad Fund projects.



BULGARIA - Fondatsiya za Reforma v Mestnoto Samoupravlenie

<https://www.flgr.bg/>

Foundation for Local Government Reform (FLGR) is an independent professional resource centre, supporting local democracy, established in May 1995. The Mission of the Foundation for Local Government Reform is to support local democracy and promote effective, partnership-based local development, based on democratic values, social inclusion and prosperity. For more than 25 years of existence the Foundation has successfully implemented pro-

jects and programmes contributing to the development and modernization at local, regional and national level in Bulgaria.

The objectives of FLGR are: Investment in the social capital at local and regional level, Development of the capacity of citizens and NGOs to effectively participate in the decision making process, and local governance based on the 12 principles of good governance; Support for effective, partnership-based local and regional development, based on democratic values, social inclusion and prosperity; Building of vibrant dynamic communities with strong participatory local self-government, with high standards of living, sustainable development and competitive local economy.

The main spheres of expertise of FLGR are:

- Trainings: FLGR has delivered trainings for more than 15,000 participants; incl. in cooperation with Sofia University;
- Innovative Practices: Since 1998 FLGR gathers and disseminates innovative practices from Bulgarian and European communities;
- Good Governance and Integrity: FLGR for many years works on programs and projects, promoting good governance principles;
- Participatory Local Governance: FLGR has worked on several programs and projects that consolidate and mobilize the participatory development of communities;
- Grant Management: In the period 2000 - 2008 FLGR had administered several programmes on local and regional development funded by USAID (3 mln Euro). In the period 2008 - 2011 FLGR administered the Bulgarian NGO Fund under the Financial Mechanism of EEA (2.06 mln Euro);
- Local Economic Development: For a period of 10 years (1998-2008) FLGR supported Bulgari-

- an municipalities in the process of policy formulation and implementation; preparation of municipal long-term strategic economic planning documents, marketing materials, networking and providing international expertise to Bulgarian municipalities;
- Accumulation, guidance and processing of investors' requests;
- Professional economic capacity development, training and certification; "Municipality, Ready for Business" Certification.

FLGR through study visits and exchanges supported the development of local and regional institutions in Albania, Armenia, Bosnia and Herzegovina, Serbia and Montenegro, Georgia, Kosovo, Romania, Kaliningrad Region, Kazakhstan, Kyrgyzstan. FLGR was part of the European network of local authorities for exchange of best practices LOGIN since its creation in 1999 until its closure at the end of 2011. FLGR was part of the Mayors Making the Most of EU Funds for Roma Inclusion Network (MERI) 2013 - 2014. FLGR is a founding member of Donor Fund Bulgaria.



SLOVAKIA - PEDAL Consulting s.r.o.

<https://pedal-consulting.eu/>

PEDAL Consulting (www.pedal-consulting.eu) is an innovation and management consulting company, with the origins in 2010, that focuses its activities in: (i) The provision of business and innovation support services to entrepreneurs, start-

ups and SMEs (more than 100 clients) as well as public authorities; (ii) The design, management and implementation of European innovation support and research projects, support actions and policy studies in various sectors, including Renewable Energy, Air quality, Finance, Bioeconomy, Agriculture, Environment, etc. and their related vertical and horizontal business networks and value chains; and (iii) The development and implementation of International Tenders according to respective requirements—pan-European market leader through its TENDERIO service (www.tenderio.com).

PEDAL holds thorough experience and deep knowledge concerning the attributes and specific characteristics of renewable energy and finance at European, national and regional level. The company not only participated as a key partner in relevant EU projects but also provided highly customised services to SMEs and leading companies of the broader agricultural sector to enhance their research and innovation capacities. On top of this, PEDAL promotes social and open innovation supporting regional authorities to design strategies, roadmaps and action plans properly adjusted to their characteristics, thus enhancing their capacity to efficiently exploit their resources and seize emerging opportunities for the benefit of their community as a whole. Furthermore, through the above mentioned activities, the company has obtained an extensive network of stakeholders involved in the broader bioeconomy sector and the related value chains.

It should be also noted that since 2010, the company has participated in more than 40 successful research and innovation

projects and studies as well as support actions funded by the EC (FP7, H2020, COSME, LIFE Plus, EEA Grants, Green Climate Initiative, Climate Pact, etc.), in some cases as Project Coordinator or Work Package Leader. In the framework of these projects, it has successfully carried out numerous awareness raising/ knowledge transfer/ networking and collaboration/ innovation support activities and services, as well as large and small-scale surveys (utilising several techniques) with a view to mapping perceptions (needs, concerns, preferences, etc.) of targeted audiences and mining meaningful market insights to fuel qualitative and quantitative analysis and translate the collected data into business intelligence.



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