GELECEĞİN YENİLİKÇİ KADIN GİRİŞİMCİLERİ
INNOVATIVE WOMEN ENTREPRENEURS OF THE FUTURE
INNO WOM ENT

Experiences of Innovative Women Entrepreneurs of the Future

edited by

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The Erasmus+ Project
"InnoWomEnt - Innovative Women Entrepreneurs of the Future"
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1. Introduction

THE PROJECT

"InnoWomEnt - INNOVATIVE WOMEN ENTREPRENEURS OF THE FUTURE"

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Study on 'Statistical Data on Women Entrepreneurs in Europe' by European Comission (September 2014) shows that women entrepreneurs constituted 31% of total entrepreneurs and 26% of all employers in European Union in 2012. The percentages of women entrepreneurs varied considerably between countries. Liechtenstein with 43%, had the highest percentage of women entrepreneurs, followed by Poland with 34% and Italy with 29%, while Turkey's score was limited to 15%. To create successful businesses, companies must adhere to customers' unstated future needs and adopt new technologies to develop innovative products to get a share in the global market. Unfortunately, women entrepreneurs mostly prefer to set up businesses in the fields of health, social-work activities, services or education, and they constitute only one third of all entrepreneurs in scientific and technological sectors. Another report published by European Commission back in 2008 shows that only 8.3% of patents awarded by the European Patent Office are awarded to women. Unfortunately, in 2018 these statistics on women entrepreneurship seem to persist. Moreover, women entrepreneurs score less than men when assessing the level of their ventures' innovation.

Eurostat Database (2017) shows that many women, like men, hold undergraduate degrees, but they make up only about one third of all **STEM** (Science, Technology, Engineering and Mathematics) degree holders in the European Union (EU-28). This ratio reflects to the ratio of female entrepreneurs in technological fields. Female STEM students constitute only 30-35% of all STEM students and very few of these students have the transversal skills which could enable them to innovate and create businesses. The 2011 EU Modernization Agenda lists; stimulating the development of entrepreneurial, creative and innovation skills in all disciplines, promoting through more interactive learning

environments, strengthening the knowledge-transfer infrastructures and enhancing their capacity to engage in start-ups, as priority areas for higher education institutions.

InnoWomEnt Project, cofunded by the European Commission and Turkish National Agency, is a strategic partnership of Bursa Technical University (Bursa, Turkey), Politecnico di Torino (Torino, Italy), I3P - The Innovative Companies Incubator of Politecnico di Torino (Torino, Italy), Silesian University of Technology (Gliwice, Poland), Technopark Gliwice (Gliwice, Poland) and KOSGEB - Small and Medium Enterprises Development and Organization (Bursa, Turkey) established with the following objectives:

- Raise awareness about the gender gap in technological fields and encourage female students to study Science, Technology, Engineering and Mathematics,
- Improve transversal skills (critical thinking, risk taking, digital literacy, foreign langauage speaking and problem solving) of students through curricular courses, seminars, workshops and teaching/learning mobilities,
- Develop an e-learning module for all prospective entrepreneurs, and
- Create a roadmap for an efficient Entrepreneurial Ecosystem where prospective entrepreneurs could reach the network, training, mentoring and support that they strive for.

The 'InnoWomEnt' project has been conducted transnationally to emphasize the need for internationalization in every aspect of life to succeed in the information age and to ensure that fact is embraced by all potential entrepreneurs. This project not only aims to create the future entrepreneurs but also would like to guarantee their sustainability in business. The companies taking a share in global market possess a better chance of growth and survival, therefore small start-ups must place a great emphasis on internationalization as this will allow them to expand their market.

The project activities have been planned to have an impact on the work habits of the university and the community as they provided exchange of ideas and mobility of experts. These activities, by bringing people from different backgrounds together, have allowed penetration of the undirected energy of the novice in the rooted systems of the experienced. Thus, the synergy among the trainers and the trainees has accomplished more than it was aimed for.

The 'InnoWomEnt' Project Logo

The InnoWomEnt Project Logo was designed by Assoc.Prof. Mete Yılmaz and implemented by the Press and Public Relations Department Specialist Alper Keskin at Bursa Technical University. The logo is a combination of a female figure and a Tulip which is considered the symbol of paradise on earth for Turkish people who originally bred the flower. Orange petals of the Tulip with a cup shape symbolizes arms of a women figure in victory pose with the blue colored center symbolizing her wisdom and the seeds ready to prosper.

Project Activities and Outputs

InnoWomEnt Workshops: At these workshops focusing on 'Innovative Entrepreneurship' experts from partner organizations gave seminars on; invention, innovation, women in STEM (Science, Technology, Engineering, and Mathematics) fields, technology transfer, and intellectual property rights, business plan, status of women in society, leadership and entrepreneurship. The event agendas, speakers' backgrounds and seminar videos can be reached at www.innowoment.org.

Transnational Entrepreneurial Internship Program: The Program that took place concurrently at I3P - Incubatore Imprese Innovative del Politecnico di Torino S.c.p.a., Technopark Gliwice and Politecnico di Torino. Twelve female engineering students from Bursa Technical University have been placed in international start-ups for an internship period of 6 weeks. At the end of the internship the students have been awarded ECTS credits by Bursa Technical University for having completed the program successfully. The details of the program are covered at the last chapter of this book.

A curriculum proposal 'Basics of Innovative Entrepreneurship': The course targeting potential entrepreneurs from STEM disciplines has been offered at Bursa Technical University. In line with the protocol signed between Bursa Technical University and KOSGEB (Small and Medium Enterprises Development and Organization) the course was counted equal to KOSGEB's 'Applied Entrepreneurship Training'. The students who succeeded the course were granted certificates by KOSGEB and right to apply for KOSGEB's Entrepreneurial Funding which normally requires about 38 hours of training.

A book titled 'A Roadmap to Successful Incubator': The book aims to function as a manual not only for prospective entrepreneurs but also for organizations willing to support start-ups. All the information gathered through this project is covered in the book. The book can be reached at www.innowoment.org.

A book titled 'Experiences of the Innovative Women Entrepreneurs of the Future': This book aims to reach a wider audience and give instructions on how to improve their transversal skills and plan a business. As all the knowledge and experience attained through this project is covered in the book, it presents a comprehensive guideline to not only women but everyone who is willing to set up their own enterprises. All the information gathered through this project is covered in the book. The book can be reached at www.innowoment.org.

E-learning module called 'InnoWomEnt Tools Kit': The outputs of this project are compiled and shared by the society without any limitations at www.innowoment.org.

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Ece Ünür Yılmaz, the coordinator of the InnoWomEnt Project, acts as the founding head of Energy Systems Engineering Department at Bursa Technical University. She is an Assoc. Prof. of Chemical Engineering and received her PhD. degree from University of Florida. She had gained industrial experience working as a researcher at BASF, New York. She has led or taken part in a number of international collaborative and national projects. She had served as the founding director of University-Industry Collaboration Development Application and Research Center (BTU-SAN) of Bursa Technical University, which functions as an interface between the industry and researchers to convert ideas into proposals and then to innovative products. Her research focuses on materials and their energy storage and optoelectronic device applications. She is devoted to establishing initiatives that help more women engage in scientific and technological workforce and encourage them to start their ventures.

2. Entrepreneurial Ecosystems

ENTREPRENEURIAL ECOSYSTEMS: EUROPE

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Abstract:*In Europe the number of startup founded by women is low, but many initiatives are providing incentives to this side of the European innovation ecosystem. These initiatives are focused on the European Commission providing many tools and projects for supporting young women entrepreneurs.*

Introduction

Even if women constitute 52% of the total European population, only 34.4% of women are self-employed and only 30% are startup entrepreneurs. This is a well-known problem: it is now clear that female creativity and entrepreneurial potential are under-exploited, in particular as a source of potential economic growth and jobs (EU, 2017a). According to the Global Entrepreneurship Index 2018, Europe has a high average score on Startup Skills (66%), Technology Absorption (63%), and Internationalization (63%) (GEDI, 2017). This is probably due to the high level of average education and it looks like that the skills for starting a new business is largely available. The Europe's lowest score is in Networking (45%). The Global Entrepreneurship Index is measured in terms of attitudes, abilities, and aspiration towards entrepreneurship in general (GEDI, 2017). At global level, among the top 20 countries of the world, 13 of them are in Europe: Switzerland (2nd with 80.4%), United Kingdom (4th, 77,8%), Denmark (6th, 74.3%), Iceland (7th, 74.2%), Ireland (8th, 73,7%), Sweden (9th, 73.1%), France (10th, 68.5%), Netherlands (11th, 68.1%), Finland (12th, 67.9), Austria (14th, 66.0%), Germany (15th, 65.9%), Belgium (17th, 63.7%), and Luxembourg (20th, 58.2%). At global level, Poland is ranking 30th with an index of 50.4%, Turkey is 37th with 44.5%, and Italy is 42th with 41.4%.

Despite this good innovation climate at European level, there are still several challenges for female entrepreneurs like: access to finance, access to information, training, access to networks for business purposes, and reconciling business and family concerns (EU, 2017a). European studies show that women entrepreneurs constitute 29% of entrepreneurs (11.6 million) in Europe even if, since 2008, there has been an increase of +3% of women entrepreneurs. Among one-person enterprises, 78% are women, and their preferred area

of business are health, social-work activities, services or education (EU, 2017b).

European Innovation Ecosystem

Supporting Women Startups

The European Commission promotes and support female entrepreneurship with several initiatives like:

- The Small Business Act for Europe (SBA), a framework for the EU policy on Small and Medium Enterprises (SMEs) with main goals as improving the approach to entrepreneurship in Europe, simplifying the regulatory and policy environment for SMEs, and remove the remaining barriers to their development; main priorities are promoting entrepreneurship, less regulatory burden, access to finance, access to markets and internationalization (EU, 2017c);

- The Entrepreneurship 2020 Action Plan, an ambitious plan to support the creation of growth and new jobs in Europe by supporting new entrepreneurs; major aim is to overcome the serious economic crisis started in 2008; it is a "... blueprint for action to unleash Europe's entrepreneurial potential, remove existing obstacles and revolutionize the culture of entrepreneurship in the EU. It aims to ease the creation of new businesses and to create a much more supportive environment for existing entrepreneurs to thrive and grow." (EU, 2017d); it identifies 3 areas for intervention like entrepreneurial education and training to support growth and business creation, removing barriers to new entrepreneurs, and stimulating the culture of entrepreneurship.

EU Support and tools for female entrepreneurs

The EU Commission supports several tools and networks for helping women become entrepreneurs and run successful businesses;

- The European on-line Platform for women entrepreneurs WEgate: a one-stop shop for all women who want to start a business, it provides information and links on access to training, mentoring, advice and business networking opportunities (see **www.wegate.eu**),

- The European Community of Women Business Angels and women entrepreneurs: aims at supporting women entrepreneurs in accessing alternative sources of funding, raising the awareness of business angels, training women who would like to become business angels and helping women entrepreneurs to present their business ideas to potential investors,

(see ec.europa.eu/DocsRoom/documents/21166)

- The European network to promote Women's Entrepreneurship (WES): a policy network with members from all European countries, representing national governments and institutions; main goal is promoting and supporting female entrepreneurship at national level,

(see ec.europa.eu/growth/smes/promoting-entrepreneurship/we-work-for/women_en)

- The European network of female entrepreneurship ambassadors: a network made up of around entrepreneurs from many European countries; ambassadors act as "role models" to encourage entrepreneurship as a career option for women of all ages,

(see ec.europa.eu/DocsRoom/documents/17322/attachments/1/translations)

- The European Network of Mentors for Women Entrepreneurs: many European countries belong to the Mentors Network that provides advice and support to women entrepreneurs.

(see ec.europa.eu/DocsRoom/documents/10306/attachments/1/translations)

Another interesting initiative supporting female entrepreneurs is the Startup Europe WeHubs (see startupeuropeclub.eu/wehubs/).

EU Awards

One of the most prestigious awards funded by the EU Commission is the EU Prize for Women Innovators, one of the main initiatives to support networking among potential female entrepreneurs. It is awarded to women who have received EU research and innovation funding at some point in their careers, and recently founded or co-founded a startup. It is interesting to see the 2017 winners: Michela Magas (1st Prize of 100,000 Euro, founder of Stromatolite, a toolkit for innovation), Petra Wadstrom (2nd Prize of 50,000 Euro, founder of Solvatten, a portable water purifier powered by solar energy), Claudia Gartner (3rd Prize of 30,000 Euro, founder of ChipShop, a 'lab-on-a-chip' system for better diagnostics).

Other important awards are:

- Women Startup Competition founded in order to give an opportunity for female entrepreneurs and their team members, to meet the investors of their dreams (see ww.womenstartupcompetition.com),

- Women Startup Challenge Europe 2017, (see www.womenwhotech.com/women-startup-challenge/london-2017)

- The Cartier Women's Initiative Awards. (see www.cartierwomensinitiative.com)

Conclusions

Even if, according to GEDI Index, Europe is in one of the most innovative areas at global level, the number of European startup founded by women entrepreneurs is quite low. Nevertheless this gender issue is very similar all over the world and the European Commission is addressing it with very strong and committed initiatives.

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Paola Mogliotti is Director and Chief Financial Officer ofI3P since 2015 with the following tasks: coordination and management of all the administrative and accounting procedures, support of Chairman, contacts with shareholders and stakeholders, management of Human Resources,planning, management and reporting of projects at the local, national and European level, to promote new entrepreneurship, business training and Business Plan Competitions. She graduated from Politecnico di Torino,with a degree in Management Engineering.

NATIONAL AND REGIONAL ENTREPRENEURIAL ECOSYSTEM

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Abstract:*Entrepreneurship and its development is one of the most important factors of economic and social growth. Entrepreneurial functions and processes as well as features of entrepreneurs are formed and developed within complex, multidimensional and dynamically changing ecosystem. The paper presents the essence and meaning of entrepreneurship and features of an entrepreneur. It presents entrepreneurship ecosystem pointing to its holistic character. In particular, it underlines the meaning of its components for development of entrepreneurship of the Silesian Province.*

Introduction

Widely perceived entrepreneurship is one of the most important factors affecting economic and social development. Entrepreneurship is linked with implementation and creation of any kinds of innovation. It is their important source, area of application and carrier. One may be enterprising in any domain of life and at any age. Generally speaking, entrepreneurship is a will and ability to undertake various tasks, especially within the economy sector. Entrepreneurship is linked with the following terms: innovativeness, ingeniousness, resourcefulness, competence, cooperation, taking risk. Business activity is a very important form of entrepreneurship, which creates national income and new jobs. New companies, called start-ups, play significant role in this sector. Experience of economically and civilisationally leading countries show that efficiently functioning environment is necessary for entrepreneurship development. It is called ecosystem, a term deriving from natural sciences, which can be useful in this context. Ecosystem is a system of mutually related entities linked by formal and informal relationships together with a regulatory environment as well as human and social capital, which creates new products and services under conditions of high dubiousness using available financial resources. Entrepreneurship ecosystem can be perceived in national, regional or local aspect. Purpose of the paper is presentation of the entrepreneurship ecosystem problems at regional level, considering its relationships with regional innovation system. Characteristics of the ecosystem is presented based on the conditions of the Silesian Province, a region with the highest population in Poland, with large economic potential.

At the same time, one emphasized these entrepreneurship ecosystem elements which have a national dimension. The problems considered herein affects the recognition of entrepreneurship and professional activation considerations.

Entrepreneurship - social and economic development determinant

In economic life, entrepreneurship can be expressed using various manners. People, who establish companies and run economic activities, are called entrepreneurs. Those, who work for them, can be and often are enterprising people, too. Their enterprising attitude manifests with creation of improvements, innovation, ideas for new products, and new methods of satisfying client's needs. These employees are called internal entrepreneurs. Entrepreneurship can be perceived as a set of character features of a given person. Its "perfect" components are as follows:

- strategic imagination concerning creation of value for a company and client,
- innovativeness (product, process, organization and marketing),
- initiative within the scope of clients and market service as well as establishing contacts with the environment,
- freedom of thinking,
- ability to establish and develop cooperation,
- creativity in many domains,
- strong ability to convince others,
- self-control,
- flexibility in acting and thinking,
- need for success,
- knowledge and inclination to take risks within reasonable limits,
- communication skills,
- ability to solve problems,
- negotiation skills,
- decision making skills,
- self-assessment.

In turn, entrepreneurship understood as a function, includes such components as: strategic orientation, creating and converting management systems, seizing opportunities, effective utilization of resources, full control over possessed resources, direct contact with employees and environment, incentive-based remuneration systems, permanent stimulation of creativity, shaping the company's culture, consideration of pro-ecological aspects, knowledge management, cooperation, construction of business model.

Entrepreneurship is a phenomenon of complex, multidimensional character, having numerous meanings. One of many definitions of entrepreneurship specifies it as a

readiness and ability to take and solve problems in a creative way and ability to adapt to changes in the environment. According to Schumpeter, its essence is creation of new combination of production factors, composing innovativeness. Great authority in management P. Drucker, said that entrepreneurship is innovativeness, i.e. systematic, intended and organized search for changes and analysis of opportunities these changes create for social and economic innovations. Innovativeness determines the nature of entrepreneurship and it is a specific entrepreneur tool which transforms a change into opportunity to start new activity we call a start-up. Entrepreneurship is very important for functioning of a given business organization on the market. Growing competition on the market and dynamics of changes in the environment cause that innovativeness decides about ability to compete and company growth. Business organizations more frequently operate under conditions of growing international, global competition but also cooperation. Under such circumstances, meaning of entrepreneurship and ability to implement innovations related to it becomes more important.Process-based approach to entrepreneurship is important for the economy practice. It is related with the concept and creation of new undertakings. Entrepreneurship as such is a process covering sequential stages, focused on using innovative ideas. It includes risks and is provided in order to bring specified benefits, not only of economic nature. The process concept covers initiative, connection of resources creating a company, control of its functioning, freedom of operations and risk as well. Establishing and then running an economic business requires an idea, courage as well as taking and incurring risk (Piecuch, 2010). Main elements of the entrepreneurial process are opportunity, resources and team. Recognition of market opportunities representing the grounds for the whole process is important for an entrepreneur. These factors inspire to take actions because of which it will be possible to utilize such an opportunity. Implementation of tasks is possible thanks to selection of proper resources and motivated team of contractors. The entrepreneurial process requires implementation of various innovations. This can be product, process, marketing or organizational innovations. The latter applies mostly to management systems manifested by business model. Often, because of new business models, and not the company technological competences, the applied innovations provide competitive edge over larger conservative companies. It is worth to mention that similar view about the business model role in effective implementation of innovations is presented by G. Hamel (2002). Innovations implemented within the entrepreneurial process do not have to have the character of breakthrough innovations, this can be open innovations (external) and closed innovations (own).Entrepreneurship may have various aspects. This can be corporate, social, intellectual and individual (independent) entrepreneurship. The latter is the most important in this paper, because it is related to business, meaning creation of new undertakings and companies, so called start-ups. Most frequently, start-up is considered as a new organization at an early stage of development and created to use the business model in order to attain competitive edge and profitability, using mostly the resources of knowledge. These are the features of this kind of companies:

- **Relatively low expenditures and costs of initiating economic business.** Starting the works concerning start-ups does not require specialist, costly material resources (machines, specialist equipment, logistic resources, property) and significant financial capital. Creativity and resources of knowledge generating business ideas and different kind of innovations are significant in this case.
- **Increased risk related to running a business, frequently of innovative character, comparing to standard undertakings.** Special types of risks are related to acceptance of product offer by clients and effectiveness of the adopted business model as well as strategy of operations. In other words, it is important to convince a client that we deliver new value that meets its requirements or solves an important problem for it related to running its business or other operations. Value delivered by health care products, improvement of everyday life and related to recreation, sports and entertainment is very important. However, we do not have a guarantee that clients, hence the market, will accept the product created by start-up.
- **Better return rate on investment comparing to standard undertakings.** Innovative character of undertaking related to a product and business model must enable finding a numerous group of engaged users. This creates the base to exchange value thus create prosumer relationships and enables generating fast and stable income (turnover). Moreover, relatively low level of financial capital, but high level of intellectual capital ensures generating significant income. Attaining high trade margins because of product innovativeness and low competitive threat on the one hand and low level of financial capital (including ownership capital) on the other, should ensure over-average return rate on the capital invested by investors who could be e.g. angels. High return rate is often related to utilization of assistance resources.
- **Supporting the business model on knowledge resources and innovativeness**. Business models generated and applied by start-ups should treat the resources globally which means ability to maximize utilization of external resources and reduction of own material resources. Orientation to recognition and implementation of individual needs and client problems is an important option. Component of contemporary start-up business models and different economic undertakings is business processes using and strengthening both the social architecture (knowledge resources and management systems) and technical structure (machines, devices, computer systems). Value created by start-up should be based on various innovations such as product, process, marketing or organizational innovations.
- **Utilization of various forms of assistance frequently related to cooperation**. This can be support funds both from EU and state or regional budget. Such companies use advisory and educational services as well as exploit research and development works of businessenvironment organizations. This is about organizations creating entrepreneurial and innovativeness ecosystem, both national and regional.

Characteristics of the entrepreneurial (business) ecosystem

The ecosystem term originates from both biological, economic and social sciences. Adopting the biological science assumptions, ecosystems are dynamic, continuously changing, reacting to natural disruptions and competing, also between species (The New Shorter Oxford English Dictionary, 1993 &World Resources Institute, 2000-2001) From the economic and business standpoint, ecosystem is treated as an "economic community supported by cooperating organizations and private persons - organisms of the business world" (Moore, 1996 & 1998). Perceived as interrelation of living organisms, whose condition depends on the others (Iansiti et al., 2004), ecosystems are defined as deliberate communities of organization, whose individual actions related to the implemented operations, are highly dependent on the whole society. Ecosystems evolve towards continuous development of innovativeness and entrepreneurship. In social terms, one may discuss ecosystem of entrepreneurship, which is a multi-level, complex, multi-element system which on the one hand is composed of planned, specified elements and relationships between them (Carayannis, 2001), and on the other it is also a system which lives with its own life that depends on activity of current and new actors, it is open to experiments and creating new ideas as well as it searches for key domains and values, which would distinguish a given region and build its innovative identity. The main goal of the regional ecosystem is offering products (services), representing important value for clients. Factor integrating the system is the flow of both tangible (e.g. products, capitals) an intangible assets (know-how, information). Moreover, organizations perceive an ecosystem as a place or opportunity to attain benefits resulting from economics of scale, outreach, time, synergy and flexibility.

M.Iansiti (2005) argues that ecosystem is a viable concept not only for the network or clusters of medium and small businesses but also for the large companies. The interconnected world forces big actors to create their own "business ecosystems" - a networks of medium and small companies cooperating in producing the value. This author develops the ecological metaphor in institutional networks implementing in his recent book the term of Keystone Advantage. The term refers to "keystone species", which proactively maintain the healthy functioning of their entire ecosystem for one, fundamental reason: their own survival depends on it. In the same way, say the authors, companies can protect and ensure their own success by deliberately fostering the combined health of the network they operate in (Iansiti & Levien, 2004). The network "healthy" is corresponding to the network balance – relative stability of the system. Relative stability means that the balance is rather fragile, depends on the behaviours of the network members and is not operated manually. This important feature of the ecosystem really impacts the management of the ecosystem that cannot be executed authoritatively. There are some connections and similarities between ecosystem in management and stakeholders approach in strategic management. Ecosystem of the organization mostly consists of organization's stakeholders – other cooperating entitles linked with organization with the different types of ties. It is also seen in analytical

methods similar in case of stakeholder analysis and ecosystem analysis. Reed at al. presents the complex review of methods stakeholder analysis, realising the three cognitive goals of identifying stakeholders, differentiating between and categorising stakeholders and investigating relationships between stakeholders. The method used for identifying have typical qualitative character: focus groups interviews, semi structured interview with the snowball sampling. For categorisation we can implement: interest influence matrices, radical transactiveness methods and stakeholder-led stakeholder categorisation. The analysis of relation between stakeholders are the domain of social network analysis, knowledge mapping and actor-linkage matrices. The nature of implemented methods ensures us that the linkage between stakeholders has also immaterial character. This type of linkage connected with the distribution of knowledge and power in the network are the essence of understanding the phenomena of organizational ecosystem and the institutional and social network.

In the literature we can indicate two general types of institutional "ecosystems", having part of the common: business and innovation. Business ecosystem refers to the business network of companies operating to obtain business goals. Business ecosystem never have non-business entitles like universities or public administration units. Miles and Snow define the corporation networks as concentrations of companies or other specialized units, whose actions are driven by the market mechanisms and not by the chain of orders and imperatives" (Miles &Snow, 1992). Very interesting deliberations on networks are put forward by the S. Rosenfeld, who distinguishes hard and soft networks of cooperation. According to him the hard networks are small-sized, closed and often joined by the formal links companies that cooperate together and realize in common a determined goal. Soft networks are characterised by the casual membership that is shaped paying special attention to the goals based on: search of ways of reducing costs, facilitating the organizational learning or the access to the information. The soft networks may have origins in clusters and may create clusters in the future. They might also be localized beyond the cluster. S. Rosenfeld states that being in a cluster "…is a function of geography and relationships, not membership, which provides access to economies of scale otherwise not possible if the firm operates individually" (Rosenfeld, 2001). This definition is corresponding to the understanding of business ecosystem. In main publication understanding of business network and business ecosystem is very similar, the difference could concern the role of the actor integrating the network (or coordinating the business ecosystem). In business network the role of coordinator could be very strong, sometimes playing the role of adopting new members of the network or exclude others. We should remember that typical examples of business networks are the retail networks. Iansiti, Levien and Miles and Snow refers to Wal-Mart - the global largest and the most well-known retail network as the typical example of business ecosystem.In correspondence to the business ecosystem, innovation ecosystem is the network involving business entitles, scientific units, public administration units - and, probably the most important – a large number individuals constitutes a civil society. M. Rothschild (1990) used the concept of

ecosystem derived from the biological sciences to describe the socio-economic reality. Transformation, in order to adapt to changing external conditions. Thus, innovation ecosystem is a dynamic social and institutional structure consisting of interconnected organizations, which include: SMEs, large corporations, universities, research centres, government organizations and other stakeholders; it is a network of many diversified reciprocal relationships.

Other elements, essential for generation and development of business organizations, are innovation strategies being an important instrument related to implementation of development policy. They are frequently related to strategic and operative programs concerning creation and support of innovativeness and entrepreneurship, using their project, operations and tools. Regional innovation strategies play an especially important role for the growth of innovation at the regional and local level. Without limitation to already existing forms of support and stimulation of innovation, it is worth to present an example of the newest proposal within this scope. This includes Regional Innovation Strategy of the Silesian Province within 2013-2020 (RIS) introduced in to the new developed Smart Growth Operational Programme (being a continuation of the Operational Programme - Innovative Economy) representing an element of the Strategy Europe 2020. The ground for construction of the Regional Innovation Strategy (RIS) for the Silesian Province was the idea to transform the regional innovation system in to an innovation ecosystem - a multi-level system, which consists of elements and internal relationships. It is open for new actors and new resources, searching for new solutions, domains and smart specializations distinguishing the region, building its competitive potential.

Ecosystem of innovations is able to configure and use the regional resources and win global resources for the development of smart specializations and implementation of goals determining development of innovation in the Region(Brzóska, [2013]). In case of the Silesian Province, the Regional Innovation Strategy is based on three smart specialisations:

- medicine,
- energy,
- information - communications technology (ICT).

Companies are the main actors (entities) in the Strategy implementation model. It is mostly them who this strategy is developed for, they are its beneficiaries. At the same time - efficiency in implementation of RIS depends to high extent on behaviours of companies and their entrepreneurship and innovativeness. Opportunities of companies for growth of innovativeness related to development of smart specializations in the Region result from:

- opportunity to run business activity within the scope of a given specialization, using attributes of this specialization which enable growth of ability to create, absorb and diffuse innovation. Abilities to use the regional scientific and research potential as well

as system of centres supporting innovativeness in the Silesian Province are especially important;

- using and participating in projects, programmes, undertakings and operations implemented within the scope of RIS related to development of smart specializations. In case of SME, participation in the project allows not only for transfer of knowledge and technology, but also for financing innovative undertakings, which fact should significantly reduce the important limitation such as financial risk.

Structure of the entrepreneurial ecosystem

In case of entrepreneurial ecosystem, one may differentiate the following, interrelated and complementary subsystems:

Subsystem of entrepreneurs operating within a given area (in this case - Region), thus the existing economic units, engaged in industrial, trade, service operations as well as implementation and commercialization of innovations. These represent cooperation potential for new entrepreneurs as well as competitive threat factor. In case of the Silesian Province, it is much diversified, both sector and ownership-wise. There are also industrial corporations and many small and medium-sized enterprises, however many of them can be perceived as very innovative.

Scientific and research subsystem, composed of research and development entities, universities and scientific institutions, active in the area of innovations and technology transfer. Scientific and research potential of the Silesian Region is one of the most meaningful in Poland. We have three public universities and four technical universities, private business and administration schools. Scientific and research institutes play a very important role in this case, operating in favour of mining, metallurgy, power, environment protection, automation and health protection sectors. Scientific entities effectively cooperating with the business may lead to creation and development of innovative undertakings; both within the category of consortia as well as through offering own ideas through dedicated companies (spin-offs). Meaning of society and universities cooperation is underlined by B.Feld (2012). It should promote entrepreneurship among students, encouraging to implementation of own ideas into life and support establishing own companies. It is also important for the universities to monitor their graduates and create network of relationships among graduates and students.

Subsystem of entrepreneurs' environment (also called business environment institutions). It is the whole wide range of entities supporting entrepreneurship and innovativeness. Existence of friendly network of interrelated entities, which provide the entrepreneurs with option of obtain practical, content-related or financial support, may directly or indirectly contribute to their growth. Institutions operating within the entrepreneurs' environment may support them on every step of development. Whether the entrepreneurship is perceived positively within a sector and whether entrepreneurs have basic knowledge about how to start a business depends to high extent on the

environment. The environment may play a key role at the next stages of development by organizing lectures, trainings and workshops, where entrepreneurs may share ideas and search for new solutions. It is also important to make available the space for work and necessary infrastructure. Business environment entities are usually established by territorial self-government units or other public organs. Services provided by these units are among other things: office space for free or offered on preferential conditions (especially within the scope of technological incubators activity), laboratory infrastructure for free or offered on preferential conditions (especially within the scope of technological parks activity), business advisory (business development support, assistance in access to capital, support in building the contracts, so called networking), creating the space for cooperation for different start-ups within a single society focused around IOB (so called co-working). Whether the ecosystems perform their function well within the business environment is manifested by availability of pre-incubation and incubation services (support for entrepreneurs from the stage of idea to the later stage of scaling), services supporting development and market expansion, networking services and lease of office / co-working space. The most important environment units are technological incubators, acceleration platforms and technological parks. Academic incubators of entrepreneurship are very important in this case. An example of an active institution within the business environment within the Region is the Upper Silesian Agency for Entrepreneurship and Development Ltd. in Gliwice, which effectively uses the European funds through implementation of innovative projects, including but not limited to establishing the European Information Point - Europe Direct - Silesia as well as Information and advisory centre within the scope of Enterprise Europe Network. The Agency runs a Loan Fund representing an attractive alternative for external financing of micro, small and medium-sized enterprises, undertaking or running an economic business. Its priorities are implemented using wide range of high quality services, including but not limited to information and advisory services within the scope of establishing and running an economic business, ISO auditor trainings, trainings concerning improvement of quality management systems, Lean Manufacturing, Lean Management, training supporting competences of employees. In turn, an example for initiating and supporting academic entrepreneurship and innovativeness is the Academic Incubator of Entrepreneurship of the Silesian University of Technology (AIP). Pre-incubation activities of AIP include organization free of charge trainings, consultations, educational courses, workshops, business and promotional meetings. The incubator is focused on providing young, professionally unaware people with knowledge concerning functioning of specific disciplines as well as teaching them audacity. Cyclic meetings for persons interested in starting an economic business are also performed in the incubator. The meetings concern among other things efficient advertisement, business model, creating ideas for a business, accounting, human capital management within a company or modern leadership. The meetings convince to active search for external financing from various possible sources and for cooperation with various market units, which enable creating innovative

projects. Participants search for an idea for a start-up through exposing their ideas to actual needs of their potential clients as well as may learn about the start-up ecosystem. Trainings performed on the Silesian University of Technology concern also the features of perfect entrepreneur, networking and cooperation. Moreover, the university organizes a Competition "Mój pomysł na bizness" (My idea for business). For those interested in developing a business plan related to their ideas, a wide range of free-of-charge trainings and specialized business advisory is provided. The best business concepts are awarded every year. Many of them have been implemented by companies operating within the Gliwice Technopark, established by the Silesian University of Technology and Gliwice city.

Subsystem of institution of central, regional and local authority. Self-government administration, local and regional self-government bodies because of well oriented activity may effectively contribute to development of ecosystems, encouraging entrepreneurs to more activity or change of location. The extent of engagement of local bodies in development of ecosystem is however different, and results from different models concerning approach to the state - entrepreneur relationship. The best practices show that administration and self-government bodies should support and look after the emerging innovations and entrepreneurial initiative. Positive impact of entrepreneurs on development of cities allows the local authorities to achieve return on investment in new companies. The Regional Innovation Strategy based on smart specialization is an important instrument of influencing entrepreneurship and innovativeness in the Silesial Province.

Financial subsystem. It covers preferential loans and credits, warranties, guarantees, subsidies, grants, tax relieves, donations, easier access to financing operations of newly established and small companies, utilization of venture capital and business angels. They are implemented through financial institutions including: regional and local loan funds, credit surety funds, seed capital funds, business angles network, Venture Capital and Private Equity funds, banks financing implementation of innovations, leasing companies. The last four are of course strictly business organizations, which participate in implementation of innovations in commercial terms (return of capital, growth of company value, interests on credits and leasing).Every new entrepreneur, planning establishing its own economic business, may apply for donations from labour office, which represent a form of combating unemployment. On a plus side, this is a non-refundable loan. Moreover, future entrepreneur, after positive decision, receives the donation quickly and its paid in advance - without the necessity to cover the expenses from one's own pocket. This donation is however not significant and amounts ca. 6 000 EUR. An example of financial support institution for entrepreneurs within the Upper Silesia Region is Fundusz Górnośląski SA, offering loans to those who establish their own companies in amount 2 500 - 12 000 EUR. Effectiveness of entrepreneurship support depends to high extent on the financial support. Aside from instruments of donation character, which are supported by EU funds and budget resources, important role for

entrepreneurs is played by capital of private investors, such as: Venture Capital and Private Equity and funds of so called business angels.

Social and culture subsystem. It is composed of features specific for a given region including culture, value systems, forms and channels of communication (Markowski, 2000). It covers also social capital potential. There are many definitions of social capital. Their common denominator is such elements of human capital as network of relationships between people and common standards and values. Even though this category applies directly to the zone of social life, the meaning of social capital reaches farther - it affects economic development, political and institutional sphere. Social capital is a kind of a binder that enables effective cooperation of people within various areas of public and private life. Social capital manifests in many human behaviours and forms of activity. The most important is civil engagement, voluntary membership in organizations, looking after informal social relationships and trust.

Legal regulations. Legal and statutory environment represents one of key conditions concerning development of entrepreneurship within a given economic ecosystem. Legal regulations, on the one hand, provide freedom in undertaking economic operations and on the other allow for protecting key interests of entrepreneurs and effective operation of a company, decide about development opportunity of competitive enterprises sector. These conditions are important for all participants of the entrepreneurs' ecosystem, however high quality and low degree of complication are especially important at the initial stages of a company development. Complicated procedures deter from trying any operations on their own and solidify the status quo in the economy.

Conclusions

Elements of entrepreneurship ecosystem presented using synthetic method show its complexity and multidimensional aspect. The mentioned subsystems characterize with high dynamics which affects development of entrepreneurship to regional and local scale. Entrepreneurship and its development is one of the biggest challenges of contemporary economy. Entrepreneurial functions and processes as well as features of entrepreneurs are formed and developed within complex, multi-dimensional, dynamically changing ecosystem, having holistic character. Its qualitative features and architecture will affect decisively the development or limitation of entrepreneurship. At the moment, there is no option to ensure fixed and sustainable development without using quickly developing companies based on new technologies, innovations and using large amount of information and data. Specific role is played by start-ups, innovative companies searching for unique development path, based on which within relatively short period of time, and they will be able to win native and global markets. Analyses of new companies in different countries and regions show that there are special ecosystems for innovation and entrepreneurship which foster development of young, innovative companies. As a consequence, these small businesses may become innovative enterprises, global brands and undertakings of significant scale of functioning, which are the driving power of the

economy. By creating jobs and generating incomes, they give professional satisfaction to many people, especially entrepreneurs.

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ENTREPRENEURIAL ECOSYSTEMS: ITALY

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Abstract:*In Italy the number of startup founded by women is still low, but many initiatives are providing incentives to this side of the Italian innovation ecosystem. These initiatives are concentrated on initial support and mentoring and on financial support to young women entrepreneurs.*

Introduction

According to the last figures, in Italy the number of startup founded by women are still very low: about 13% (D'Ascenzo, 2016). Indeed, according to the ***Global Entrepreneurship Index 2018***, Italy is at 42th place in terms of attitudes, abilities, and aspiration towards entrepreneurship in general (GEDI, 2017) and the challenges are even higher for potential women entrepreneurs. Curiously, also the ***GEDI Index*** does not have a specific dimension dedicated to women's' entrepreneurship. In Italy there are some "worst cases", like ICT startups, where the largest majority of founders are men, and "best cases", like bio-medical startups, where there is a significant presence of women entrepreneurs.

Italian Innovation Ecosystem

Supporting Women Startups

Young women can find support and inspiration in initiatives like "Girls in Tech Italy": in 2017 they published 10 best practices of women's entrepreneurship where the person and her innovative idea are put at center stage: Alessandra Antonetti (with AriaWearable, dedicated to Internet of Things applications), Daniela Bertero (with TheColorSoup, personalized tissue printing), Valeria Cagno (with Panoxyvir, a startup dedicated to innovative pharmaceutical products), Marianna Chillau (with Transactionale, e-commerce and digital coupon sharing), Mary Franzese (with Neuron Guard, a life-saving device for incidents affecting the brain), Roberta Musaro' (with Memio, an application for recalling therapies to elderly people), Marianna Poletti (with Just Knock, an innovative jobs announcement application), Monica Regazzi (with Homepal, a peer-to-peer house rental application), Catriona Wallis (with Colto, an e-learning application for children), Nicole Bouris (with Praesto, a food service location-based).

Another initiative in this direction is StartupItalia!that publishes the list of the most important 150 women dedicated to innovation and startup creation in Italy (startupitalia.eu).

An important initiative is the "***Women Boot Camp***" organized by ImpactHub, a network of initiatives, people, and enterprises dedicated to social innovation and to improve the quality of life. The focus is on the production and development of products and services that are sustainable from the social and environmental point of view, by a participative approach, and by combining public and private organizations, profit and no-profit initiatives. Main nodes of the network in Italy are: Milano, Rovereto-Trento, Trieste, Roma, Bari, Siracusa, Firenze.

Financing Women Startups

In Italy, indeed, several initiatives are targeting the financing of women entrepreneurship. One of the most important is the "***Invitalia***" project, funded by the National Government, Minister of Economic Development, with 95 Millions of Euro. It is dedicated to support a new entrepreneurship culture, the birth of innovative and technology-based startups, and also the valorization of scientific and technological research (Invitalia, 2017). In particular, the program has a dedicated fund for women that aim at becoming entrepreneurs. It provides "zero-interest" loans starting from 100.000 Euro up to 1.5 Million Euro for each single project, and that can cover up to 75% of total expenses. Young women below 35 year old can apply and can use the funds for setting up the company and start initial activities. The loan (zero interest) can be returned in 8 years. Only for some specific Italian areas and regions the Government provides also "non-repayable" loans.

Another opportunity for young women entrepreneurs is the program "***Garanzia Giovani***" with the fund "***SELFIEmployment***", dedicated to unemployed people.The Italian government has launched also an important program dedicated to women entrepreneurs, in particular for financing women startups: "***Imprenditoria Femminile***" (imprenditricioggi.governo.it).Of course, there are also many banks providing financial support to startups like:

- ***Unicredit*** (provides up to 100.000 Euro, with low fixed interests refundable in 7 years) also with the program "***Unicredit start lab***";

- ***Banca Sella*** (provides not just financial support but also mentoring and networking services);

- ***Banca Intesa-SanPaolo*** (with the initiative ***NeoImpresa*** provides financial support for starting new businesses).

Italian Angels for Growth (http://www.italianangels.net). In 2017, Paola Bonomo was awarded as the "best business angel woman".

Awards

In Italy there are also several interesting startup awards like:

- ***Premio Nazionale per l'Innovazione***, a national innovation award assigned by a national competition among teams that already participated to local idea or business plan competitions (e.g. ***StartCup***) usually connected with local Italian universities and public research centers;

- ***Premio Merito e Talento***, an award promoted by Fondazione Bellisario (www.fondazionebellisario.org) for the valorization of women talents and for the promotion of policies and strategies in the area of women entrepreneurship;

- ***Premio Gamma Donna***, an award promoted by "***Gamma Donna***" an association for women entrepreneurs.

Conclusions

Beyond financial opportunities, several researches in the area of women's entrepreneurship have demonstrated the growing need for senior women available to act as mentors and "role models". It is very important that women entrepreneurs with experience put their competences at the services of younger women entrepreneurs. An example: the initiative promotes by ***Rotary Italy*** for offering volunteers' tutoring to startups (www.programmavirgilio.org).Many studies have demonstrated a positive correlation between the presence of women in startup and enterprises and the business performance: a report by ***Silicon Valley Bank*** shows that the likelihood of getting investments is double if the startup is founded by a woman (SVB, 2017); a report from ***Global Entrepreneurship Monitor 2017*** shows that women propose more innovative businesses (GEM, 2017); a study by ***Kauffman Index*** shows that the value for shareholders is higher and the capability of identifying market needs is higher, if the presence of women in enterprises is higher (Kauffman, 2017). The problem is definitely a ***cultural problem***. One possible line of intervention is to provide incentives to young women that would like to follow a study career in science, technology, engineering, and mathematics areas. An example: the initiative "***Inspiring Girls***" proposed by "Valore D" (valored.it), an association dedicate to promote diversity, talents and women leadership in enterprises.

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CLUSTERS AS AN ENTREPRENEURIAL ECOSYSTEM

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***Abstract**: Industrial clusters are relatively new phenomena on the activity area of contemporary entrepreneurs. Focused on innovation, they provide new possibilities for new-born companies on the certain territories. These aspects of supporting entrepreneurs on local/regional level was discussed in the chapter. Also, some examples of clusters supporting entrepreneurs was presented.*

Introduction

Within the last decade, clusters have become the object of many studies: from the processes of their initiation to development of clusters within a region (Karlsson 2008, Martin, Kitson and Tyler 2006, Henning, Moodysson and Nilsson 2010, Pachura 2010), creating and developing clusters as a network of companies and institutions (2 Breschi and Malerba 2005, Stachowicz 2006, Parrilli 2007, MacGregor and Hodgkinson 2007), including in particular SME (Parrilli 2007, ; MacGregor and Hodgkinson 2007), as a social network (Castells 1998) or as a method for development of competitiveness, entrepreneurship, innovativeness, knowledge diffusion, technology transfer (Carayannis and Campbell 2006, Breschi and Malerba 2005, Bojar 2009; Nowicka-Skowron 2009), etc. Development policy based on clusters allows for creating cohesive system within the scope of which cooperation between companies, R&D institutions and public bodies occurs. Within this system, the scientific sector supports competitiveness of companies, by supplying innovations, education satisfies the demand on the job market, improvement of competitiveness and innovativeness of companies enable development of new investments.

The purpose of the paper is to present clusters as a system supporting local and regional entrepreneurship. Presentation of the clusters concept as an entrepreneurship ecosystem was used to achieve the objective. One also assumed that clusters are not only a set of organizations which are only a "random concentration", but an "aware and deliberate behavior" which contributes to development of entrepreneurial and innovative operations.

Meaning of clusters in an entrepreneurial development of a region and companies

A large number of cluster definitions does not facilitate the task concerning creation of suitable synthesis and rather indicates to the complexity of the issue, the diverse nature and approach. The process of development of cluster understanding resulted in synthetic approach to its definition. Using the assumption I.R. Gordon and P. McCann (2005) and S. Iammarino and P. McCann (2006) and own approach (Knop 2013, 2015), you can organize the cluster definitions in accordance with the motto that "cluster is the strength" (Knop 2018):

- "Strength of a region" understood as a classic agglomeration (group) concerning concentration of industry, with an important role of the administration as well as local and regional authorities. Using this approach, the labor market is a reflection of possibilities of using the economy of scale and an indication that the external effects are the result of both the activity of the local market and the spillover effects. The critical determinants of such cluster understanding include: proximity, critical mass and currently regional smart specializations;
- "Strength of sector and complementary sectors" means an industrial complex that groups companies on a given area and focuses on specific relationships in terms of sales and purchases of businesses that seek to reduce transaction costs and improve the competitiveness. Critical determinants of such understanding of a cluster are: sectoral cluster specialization, cluster competitiveness, development of competitive technology, cooperation synergy effects;
- "Strength of relationships" understood as a social network, otherwise model of a "club" concentrated on social ties and trust that facilitate cooperation and innovation; emphasizes the activity of different organizations, with particular distinguishing the civil society. Critical determinants of the cluster are: interdependence, confidence, social capital, relationship.
- "Strength of knowledge", i.e. knowledge hub, based on the cooperation of scientific and research organizations with business, in order to develop new knowledge and revolutionary innovations. Critical determinants of clusters are: knowledge management within a cluster, cluster value, configuration of resources in a cluster.

Basic benefits from the participation (companies, scientific entities and self-government bodies) in a cluster are related to (Toveda and Knoke 2005):

- strategic benefits: steady and developing competitive edge, access to new technologies, to global solutions, snowball effect;
- benefits concerning economic effects: reduction of costs, improvement of specialization, reduction of diversification risk, replacement of resources, etc.;
- benefits related to organizational solutions, facilitating processes of development and restructuring: knowledge flow, innovations, learning, improving relationships;
- political benefits: development of technological standards, lobbing, etc.

But clusters also strongly affect local and regional environment – see figure 1.

The concept of entrepreneurial ecosystems

The concept of entrepreneurial ecosystems has gained popularity in recent years due to mainstream business books such as Feld's (Feld 2012) Startup Communities and work by Isenberg (Isenberg 2010) in the Harvard Business Review.

The concept of ecosystem has its origins in both biological sciences and socio-economic ones. Considering the assumptions of biological sciences ecosystems can be described as dynamic, ever-changing, responding to natural interference and competing, also among species. From the economic and business viewpoint, ecosystem is treated as "economic community supported by partner organizations, and individuals - the elements of the business world" (Moore 1996, Moore 1998). As the network of live organisms whose condition is dependent on the other (Iansiti and Levien 2004). Ecosystems are defined as the intentional community organizations whose individual activities are largely dependent on the whole community. According to J. Rokita "... depending on the situation, some organizations may be more organic than others." Based on the cited research, he indicates that "... too great a role (impact force, flexibility) has been assigned to organizations, and too small to the surrounding, which

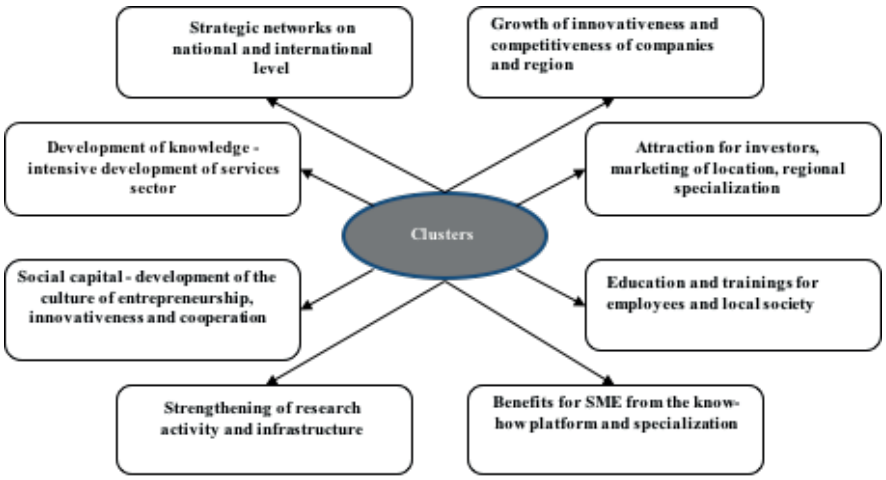


Fig. 1 - Cluster impact on the environment (Knop 2013)

often to a greater, than claimed, extent determines its survival. It is therefore necessary to find a balance between the overestimation of the organization's role and underestimation of the role of the surrounding" (Rokita 2010). Ecosystems evaluate towards continuous innovation. In social terms, we can talk about an innovation ecosystem, which is a multi-

level, multi-modal, multi-agent system of systems, which, on the one hand, consists of planned, defined elements and relationships among them (Rokita 2010), but on the other hand, it is also a system that lives its own life, dependent on the current activity and new actors, open to experimentation and creation of new ideas and concepts, searching for the key fields and values that will distinguish the region and build its innovative identity.

Entrepreneurship is a feature aimed at provision of rational and effective utilization of opportunities and resources. Entrepreneurship can be perceived as a process (act of creating and building something new, e.g. new company) of operations oriented, under given circumstances, at utilization of novel idea in order to generate benefits on the market. Entrepreneurship is also a special manner of people behavior. Key features of entrepreneurship are as follows: dynamism and activity, inclination to take risks, skills to adapt to changing conditions, noticing opportunities and their seizing, innovativeness and motility.

Economic development and attaining competitive edge within contemporary world by individual nations and regions to more and more extent depend on the rate new, innovative economic entities appear on the market. As a result, efforts of public bodies are oriented at development of entrepreneurship and intensification of innovative processes. Transformation of knowledge into new products, services, technologies or organizational solutions require proper infrastructure covering innovativeness and entrepreneurship centers (so called modern economic institutions). Their key functions concern operations within the scope of stimulating creativity, entrepreneurship and innovativeness in people, thus activation of internal (endogenous) resources, leading to more effective utilization of local growth factors. Modern approach to development strategy is based on search for safe and permanent grounds for development inside regions with broad utilization of local environment engagement. In practice, this means the need to create local development institutions specialized in operations in aid of economic development through (Matusiak 2010):

- support of entrepreneurship, self-employment, facilitating start and assistance for newly created private companies; promotion and improvement of SME competitiveness;
- creating conditions for transfer of new technological solutions for the economy and implementation of innovative undertakings;
- increase of human resources quality through education, training and coaching as well as popularization of positive attitude examples;
- management of resources and implementation of infrastructural undertakings;
- creating a network of cooperation and partnership of various entities acting in favor of intensification of development, increase of welfare and wealth of citizens.

Discussion concerning entrepreneurship ecosystems is the result of development of entrepreneurship support systems on local and regional market. This issue is investigated together with innovation systems.

Prahalad provided a definition for entrepreneurial ecosystem, according to which the ecosystem enables the individuals, enterprise and the society to combine effectively for the cause of generating economic wealth and prosperity (Prahalad 2005). The remarkable attribute of an ecosystem is to blend together the stakeholders who are often driven by different objectives and expectations.

While exploring the applicability of the entrepreneurial ecosystems in creating a 'sustainable valley', Cohen elaborates on the nine principal factors that are the key components (Cohen 2005). They are Informal Network, Formal Network, University, Government, Professional and Support Services, Capital Services and Talent Pool.

Isenberg proposed a model for ecosystem consisting of thirteen factors: Leadership, Government, Culture, Success stories, Human Capital, Financial Capital, Entrepreneurship Organizations, Education, Infrastructure, Economic Clusters, Networks, Support Services, early Customers (Isenberg 2010). The stake holders include Government, Educational Institutions, Financial Institutions, Media and Network. In fact Isenberg has outlined a total of thirteen stakeholders, the pillars on which the edifice of entrepreneurship stands.

Isenberg noticed the clusters as an element of innovation ecosystems, and Romero and Montoro (2008) underlined more meaning of clusters, showing their positive impact on creating undertakings due to their unique nature based on co-opetition. Within clusters, one achieved, among other things, a balance between cooperation and competition, which fact is embodied in higher productivity of companies, because of better access to outlays, information, technology and institutions; higher level of innovativeness and creating new undertakings. Cluster ensures incentives for creating new companies or start-ups.

Using the approach of Isenberg, Suresh and Ramraj (2010) have proposed a complex entrepreneurship ecosystem model which is composed of 8 subsystems:

- Moral support consists of the role played by the entrepreneur's father, mother, sibling, spouse, In-laws, relatives, friends and society at large.
- Financial support comes from the immediate family, Banks, Venture Capitalists, friends, relatives, in-laws, educational institutions, angel investors, and small investors from the capital market, foreign financial institutions, government bodies and credit from suppliers.
- Network support refers to organizations like The Indus Entrepreneurs (TiE), National Entrepreneurship Network (NEN), and Confederation of Indian Industry (CII). It includes specific industry associations, alumni associations, online social networking sites like Facebook, LinkedIn, friends, network of suppliers and distributors.
- Government support emanates from clusters like Small Industries Development Corporation (SIDCO), educational programs from Micro Small and Medium Enterprises (MSME), incentives, incubation centers, infrastructure facilities, awards and legal procedures.

- Technology support is provided by government funded incubation centers, new technology developed in educational institutions, imported technology know- how, talent pool available locally.
- Market support refers to the opportunities in the market, reports from government and trade associations, support of suppliers, loyal customers. Acceptance of the product on consignment by the intermediaries, trade shows and exhibitions.
- Social support in the form of awards from trade associations, acceptance of venture failure, and exposure by media. Social respect bestowed on the entrepreneur also counts as social support.
- Environmental support includes availability of natural resources and climatic conditions.

This approach forms complete entrepreneurship ecosystem model. Each of the distinguished subsystems individually favors entrepreneurshipbut is not enough to "keep it alive". This is often neglected by entities creating an ecosystem - efforts are directed at only one or two elements of such an ecosystem. Meanwhile, significant momentum concerning the process of creating and developing economic undertakings is provided by the set of these elements.

Cluster as an entrepreneurship ecosystem

While performing wide-range studies over cluster ecosystem (Knop 2013), one made a verification of cluster ecosystem features, and distinguished the following:

- Complexity of the ecosystem- according to the Santa Fe Institute, complexity concerns, […] systems composed of various parts, which within somewhat mysterious process of self-organization, become more ordered and better informed than systems which operate within close balance with the surroundings". Moreover, […] complex systems include many relatively independent parts, which are strongly related with each other and interactive" (Cowan, Pines and Meltzer 1994).
- Ecosystem self-organization - this is a some kind of spontaneous order, created within the process, wherein there is no leader, but there are spontaneous events, resulting from local interactions" (Mitleton-Kelly 2003). Self-organization is a continuous and autopoeitic process. Within cluster ecosystem, one implements openness and self-creation of components and entrepreneurial processes;
- Emergence - results from cooperation of individual elements; this is a process which creates new order together with self-organization process;
- Ecosystem coevolution - G. Bateson (Bateson 1978) defines coevolution as a process, where interdependent species evolve within infinite cycle of reciprocity, where changes in species A are to prepare the foundation for natural changes in species B. Coevolution of cluster ecosystem should go hand in hand with emergence of new system elements and according to paradigm of sustainable development it should be able to renew and reorient;

- Ecosystem adaptation - concept already known from ***On the Origin of Species*** by K. Darwin. According to J. H. Holland, „in biology, adaptation is a process wherein an organism adapts to the environment" (Holland 1995). However, U. Merry assumes that „adaptation is a summit of higher efficiencies" (Merry1999). In case of cluster ecosystem, adaptation means adaptation of system elements to the system and vice versa, where a dominating individuals or processes enforce changes of the whole ecosystem.

As a result, in the studies concerning ecosystem, one showed three groups of issues describing cluster ecosystem:

- physical components - describe ecosystem components and what are the ecosystem elements;
- content issues - relate to the scope of knowledge and specializations the ecosystem components have;
- principles of logic, which covers standards, values and behaviors.

Such approach allowed for presentation of cluster ecosystem example (fig. 2), which may be used as a description of the innovation ecosystem. Groups of issues presented on the figure represent main cluster ecosystem components, where a specified group of entities operate. The key ecosystem components are as follows:

- Transfer of knowledge / commercialization - it covers operations within the scope of knowledge management within a cluster, technological observatories, technology brokers, intellectual property protection system.
- Market support and internationalization, which covers modelling proper conditions for investors and potential participants of a cluster, support for international relationships, access to global bases of technology and companies, international court arbitrage or activation of activities in favor of the growth of SME share in international markets.
- R&B&I - includes among other things foresight studies, benchmarking, strategic intelligence as well as basic and applied studies, used by the whole cluster or its participants.
- Education and development - covers education and finding talents, global scientists, development of education systems, strengthening CSR value.
- Innovation infrastructure - includes infrastructure for innovativeness development, including technological parks, competence centers, incubators, academic entrepreneurship, business advisory and ***technology watch***.
- Communication and promotion, which in general include platforms for communication and infrastructure strengthening communication as well as tools and solutions promoting cluster (or clusters) development.
- Financing, including project as well as national and international competitions, ***venture capital, seed capital, business angels*** etc.

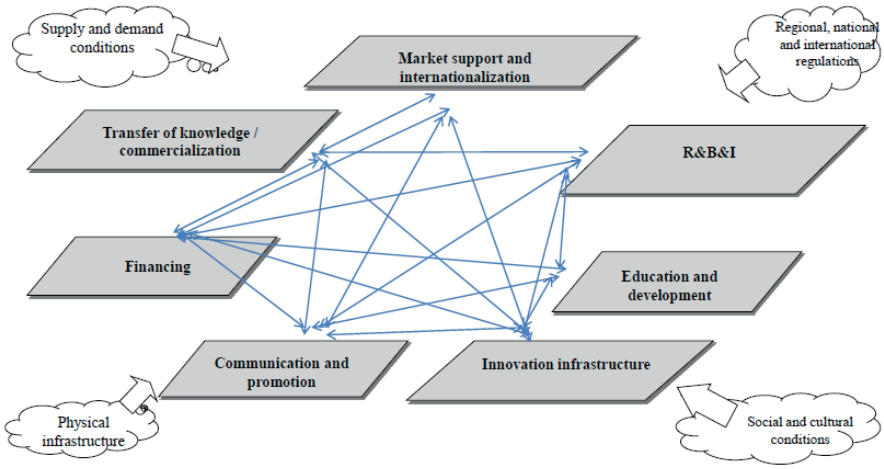


Fig.2- The cluster ecosystem (Knop 2013)

Practice concerning shaping the cluster policy and its utilization by clusters allowed for distinguishing three systems of cluster architecture with reference to its ecosystem:

1. Cluster as a network of entities within the entrepreneurship ecosystem
2. Cluster with own ecosystem within the entrepreneurship ecosystem
3. Cluster as an entrepreneurship ecosystem

Cluster as a network of entities within the entrepreneurship ecosystem

This approach assumes that within a given territory there is a developed entrepreneurship ecosystem used by all clusters. The ecosystem can be characterized by a set of components and actors, who create enough universal solutions so that they can be used by all clusters - fig. 3. However, the clusters themselves limit the range of services, focusing on strengthening specializations and bonds. A wide spectrum of tools supporting clusters development is necessary. Within a region, cluster policy does not have to exist, but a well-developed policy concerning economic and / or innovation development. An example of such an approach is mainly Polish clusters and shaped regional innovation ecosystems.

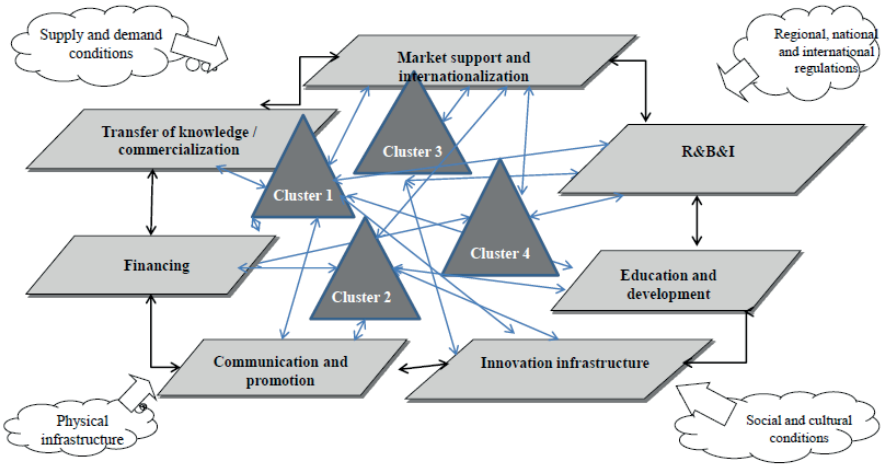


Fig. 3 - Cluster as a group of entities within the entrepreneurship ecosystem

The concept assumes that another clusters will appear within a given entrepreneurship ecosystem. Their number and dynamics of growth are different and depend on the capabilities that shape the ecosystem and external conditions. The ecosystem itself and services it proposes are developed depending on the economic policy and innovation policy (whether cluster have a meaning within regional policy) as well as need reported by clusters themselves. Cluster is defined as a group of entities, most frequently selected from the business and science environment, mainly characterized by closed (members only) structure. Most often, the initiative starts at the bottom. Such an approach can be characterized by limited access of entities to a cluster, and the clusters themselves point to specified benefits, hence the selection of entities to a cluster is important. The cluster is dealt as a whole, thus policies and / or tools supporting clusters are formed accordingly. From the standpoint of entrepreneurship development, more attention is drawn to the synergy of wholeness than to development of individual entities within a cluster. Objectives of the cluster are focused on development of competitiveness and / or innovativeness of the wholeness, but the mass and potential of the cluster develop slowly. Most often, a selected or created coordination entity is a cluster coordinator, however the decision process can be differentiated and based on organic approach. Clusters within this concept may develop rapidly, on condition of effective entrepreneurship ecosystem. This concept covers most of Polish clusters, except the Dolina Lotnicza (***Aviation Valley***).

Cluster with own ecosystem within the entrepreneurship ecosystem

The concept assumes that there is own ecosystem around a cluster – Fig. 4, accordingly developing necessary components, which are useful in effective functioning of a cluster.

Cluster uses an economic and / or innovation ecosystem existing within a given terrain, which supports clusters because of the developed cluster policy, oriented at specified specializations or special operations, e.g. development of venture capital, support for innovation, etc.

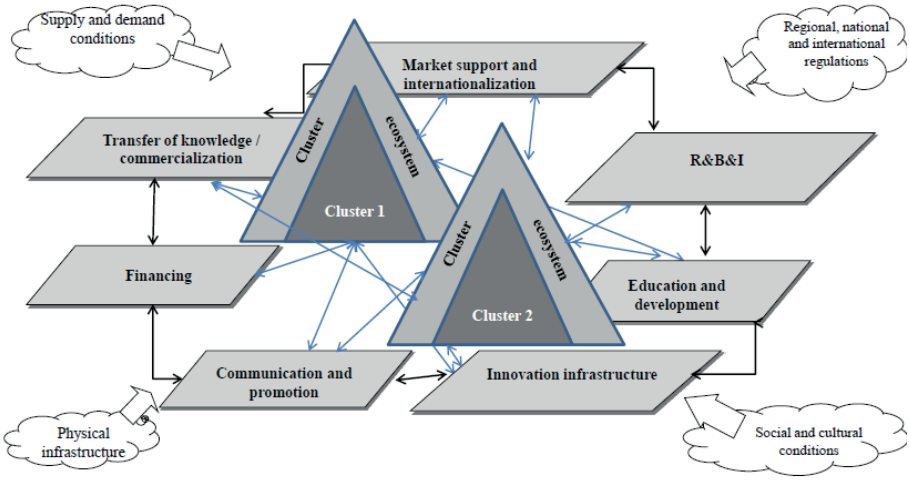


Fig. 4 - Cluster with own ecosystem within the entrepreneurship ecosystem

Characteristic feature of this approach is that while creating such an ecosystem, the management process itself may concern one of a few clusters. As a result, we may build so called cluster of clusters, in other words, management system of many clusters. Such cluster ecosystem is a set of entities, which provide individual services for distinguished clusters, focusing first and foremost on their needs. In this concept, cluster may be appointed at the top or be created from the bottom, however a key assumption is management of such structure. Membership, closed, models dominate in this approach, and the coordination processes are implemented by dedicated or selected entities. Such solutions are characteristic for technological clusters and clusters of knowledge, which cooperate within the frameworks for ***triple helix***. In this case, cluster policy is dedicated, but this is related to less number of clusters or group of clusters, with which one may create proper solutions and tools, allowing for their dynamic growth. Goals and undertakings are aimed at development of cooperation, innovativeness, competitiveness as well as agglomeration and social objectives. Operations of such clusters in the region are visible, and the functioning services develop dynamically. The whole cluster management mechanism and ***cluster governance*** is being developed. In Europe, competitions for cluster manager are organized. Key example is Clusterland in Austria and Sophia Antipolis in France, aviation clusters: Telecom City or Biopolis.

Case 1: Clusterland

Policy concerning clusters in Austria is mainly of regional character, however activities on national level undertaken for many years have contributed to development of clusters within the whole country. At the moment, we may notice two levels of clusters support in Austria:

- regional level - building clusters, inspiring cooperation and creation of cooperation platforms,
- national level - complementation of regional cluster policy within the area of: finances, technology transfer as well as research and development.

Over the years, objectives of cluster policy in Austria have been based on promoting and creating networks. However, the following years are based on:

- expansion of clusters,
- development of companies,
- communication base for companies which strive to develop common, competitive solutions.

The region of Upper Austria has a defined policy concerning innovation and technology, thus its strong position within the scope of modern technologies. Since 1998, it implements intensive operations within the scope of creating and developing clusters in the following sectors: automotive, plastics, eco-energy, production of furniture and wood, food, medical technologies, mechatronics and environmental technologies. Except that, there are networks supporting: human resources, designing and media, logistics and energy efficiency. Until 2005, all clusters and networks have been managed by Upper Austria Agency (TMG). Now, they are part of and managed by Clusterland Oberösterreich GmbH.

Mission (*Clusterland Upper Austria, 2015****): We initiate and support cooperation***. Increase of competitiveness of partners and their know-how, by increasing their innovation capacities and strengthening internationalization. Initiating and supporting cooperation, supporting political and economic contract, taking care of sector and partners image in the international context– promoting region and future sectors. Concentration of specializations based on SME needs.

Vision: *Competence centre within the scope of cooperation of business networks*. Leader in key specializations. Place and institution perceived as a main contact point on regional, national and international level. Permanent contact with partners and searching for common solutions. Suppliers of specialist know-how and organizers of knowledge transfer.

Cluster focuses its operations on a few specializations (sectors): automotive: vehicles, engines, components, plants production, environmental engineering, plastics, household chemicals, paper, wood, furniture, windows, doors, steel, aluminium, ICT technologies.

All cluster operating under Clusterland have differentiated structure of entities related both vertically (within a value chain) and horizontally, by grouping entities competitive for one another. As a result, operations implemented within the scope of individual clusters on the one hand are used to complement gaps and search for common solutions and on the other, within the scope of cooperation and mutual meetings, they allow for mastering own processes and initiating innovative projects - fig. 5.

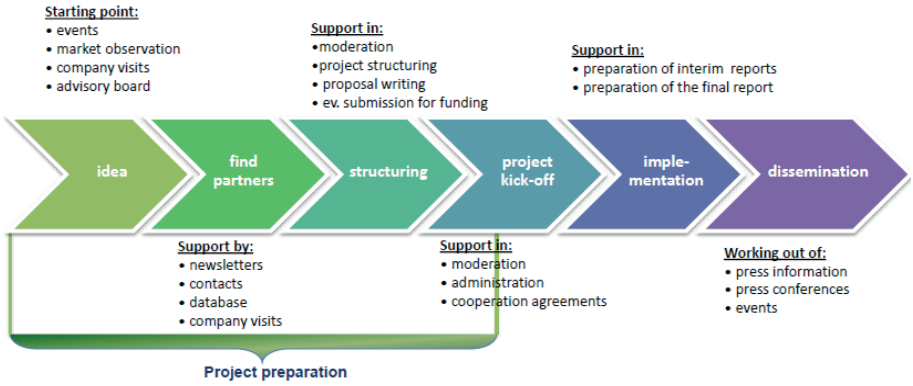


Fig. 5- Description of cooperation-process. Source: Innovation through cooperation – learning from Upper Austria. Presentation 2015.

Moreover, cluster operations are oriented at continuous improvement of knowledge, skills and competences using the motto: ***innovations through competences.*** Within this scope, there are operations based on: creating information exchange platform, improving qualifications of employees of organizations operating within a cluster, cooperation projects and continuous cooperation - fig. 6.

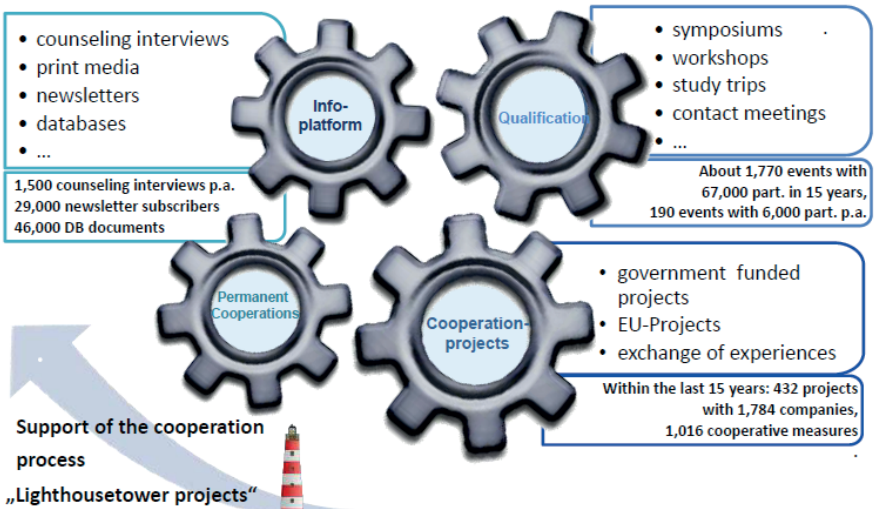


Fig. 6- Innovation through cooperation Source: Innovation through cooperation – learning from Upper Austria. Presentation 2015.

Development of Clusterland structure is based on development a few key competencies, which, using an acronym, can be called 4 x „co-": connectivity, collaboration, co-opetition, co-creation. However, model of their operation is complex, as presented on fig. 7.

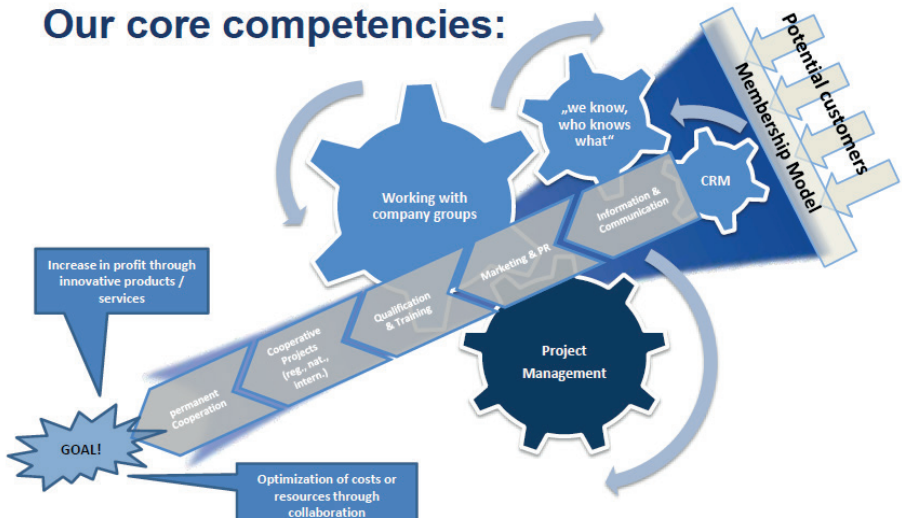


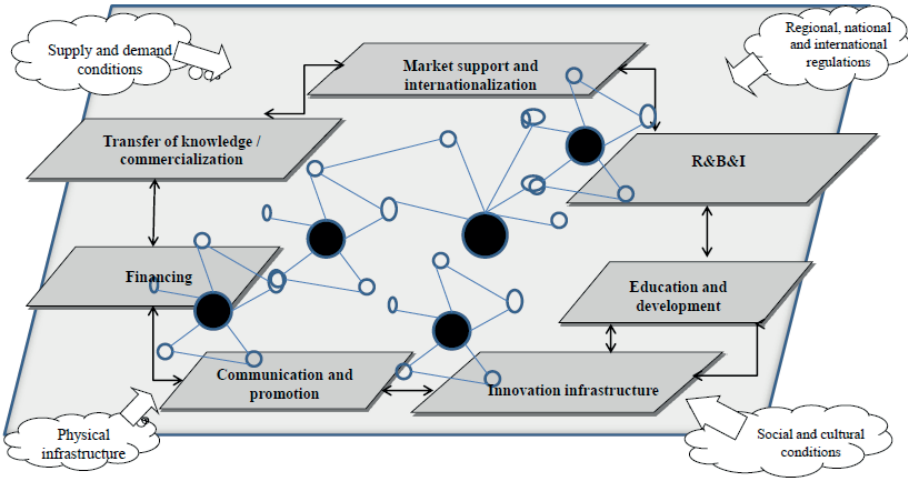
Fig. 7 - Clusterland' core competencies. Source: Innovation through cooperation – learning from Upper Austria. Presentation 2015.

The effects of their over 15-year activity are:

- **432** projects with more than **1,784** participating companies
- **77 %** of the companies continue working together with their partners from cooperation projects, after these are officially over (the range goes from relationships between customers and suppliers up to establishments of joint ventures); **75 %** of our partners sensed a benefit from working in projects with us.
- **89 %** of the projects could have not been carried out – or not in this positive way – without the support received from the cluster. One usually would have done without working together with other companies.
- Cluster partners **grow faster** than non-cluster partners (e.g. plastics cluster: +8 % p.a. / + 750 jobs p.a.).

Cluster as an entrepreneurship ecosystem

Concept of cluster as an entrepreneurship ecosystem (fig. 8) first and foremost distinguishes companies against the background of all ecosystem components. This means, that location, i.e. region or distinguished local site, together with its operations is focused on development of already existing and new companies. Entities – both companies and all supporting and advisory organizations – are ecosystem elements, i.e. they create it, develop and use its products. It is difficult to find a coordinating entity within such a model. Each distinguished platform has leaders, who implement individual operations for others. Relationships within a cluster are based on social, institutional and cognitive bonds, but first and foremost partnership relations are formed, that is why partnership model is the dominating one, created at the bottom, but all objectives resulting from sustainable development are underlined. Cluster management is some sort of participation model, but resulting most often from developed concept such as ***cluster governance.*** Cluster, innovation and control policy is "consulted" and adapted to cluster development. Examples: Silicon Valley, Cambridge.



Circles represent organizations.

Fig. 8- Cluster as an entrepreneurship ecosystem

Case 2: Silicon Valley

The Silicon Valley is treated as the most famous and oldest place for high-tech industry development, which focuses key, global companies operating within ICT sector. In spite of development of many other clusters, the Silicon Valley represents a symbol and a reference point for the whole world. It covers the area of: 15 km wide and ca. 50 km long, due south of San Francisco, in Santa Clara Valley.

Companies belonging to industrial giants, who have their seats in the Silicon Valley are as follows: Adobe Systems, Advanced Micro Devices, Agilent Technologies, Altera, Apple, Applied Materials, BEA Systems,Binet, Cadence Design Systems, Cisco Systems, eBay, Electronic Arts, Facebook, Google, Hewlett-Packard, Infotech, Intel, Intuit, Juniper Networks, Knight-Ridder, Maxtor Corporation, Microsoft, National Semiconductor, Network Appliance, NVIDIA Corporation, Oracle Corporation, Siebel, Sun Microsystems, Symantec, Synopsys, Veritas Software, Yahoo!.

In USA, clusters are treated not only as an element of growth, which can be supported with a single program, but as a new paradigm of economic development, which requires complex operations.

Silicon Valley has a variety of business organizations and institutions that create a business environment that has proved to be highly conducive to the successful creation of startup firms, disruptive business models, and leadership in a variety of high-tech areas. The various components and characteristics of Silicon Valley that fit together and exhibit

complementarities and "make the system work" are best referred to as the Silicon Valley "ecosystem."

Key characteristics of the Silicon Valley Ecosystem:

- Dual ecosystem of large firms and startups
- High financial returns for successful entrepreneurs and startups' early employees
- Global top-level human resources for all stages of startups
- Business infrastructure (law firms, accounting firms, mentors, etc.)
- Venture capital – most competitive market
- Globally top-class universities (Stanford, UC Berkeley, UCSF)
- Human resource clusters anchored around top universities
- Extensive government role in shaping technological trajectories and basic science Highly competitive industries, balance between "open innovation" and secret protection
- Balance of "open innovation" and intellectual property protection
- "Technology Pump" of top human resources from all over the world
- High labor mobility at all levels of management and talent
- Culture of accepting failures (effective evaluation and monitoring)

Cluster ecosystem model being lately developed is presented in fig. 9. Key mechanisms shaping this ecosystem are its flexibility, continuous learning and networking. In order for them to function, basic methods of implementing are as follows: building partnerships, access to knowledge and talents, assessment of market, acceptance of culture differences, proper infrastructure, and first and foremost sources of financing.

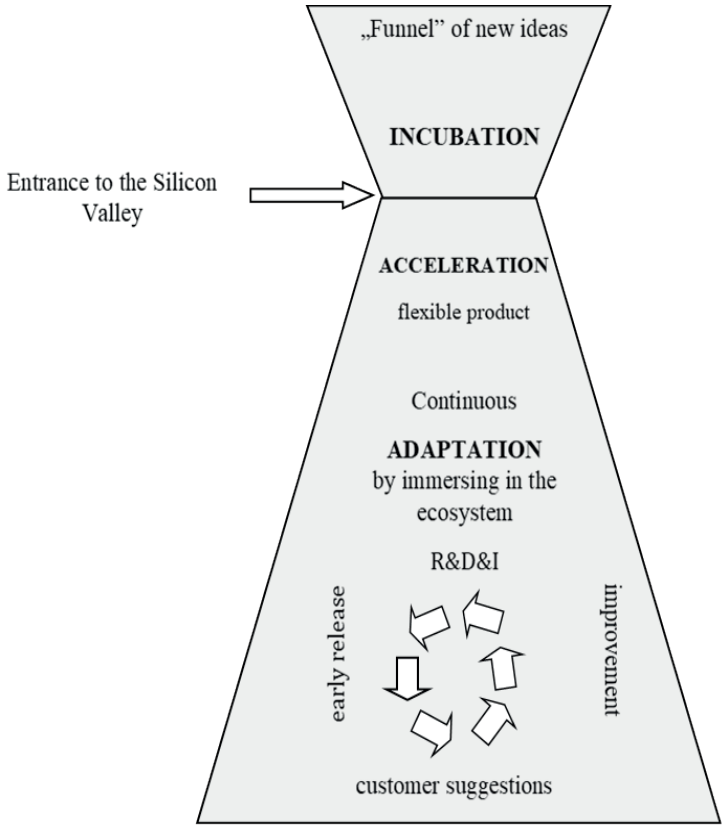


Fig. 9 - The successful process to the enter the Silicon Valley ecosystem. Source: own elaboration based on: Silicon Valley and Its Siblings. Action Report, International Summit on Entrepreneurship and Innovation, San Jose 2011, p. 4.

Instead of summary

Creating a complete entrepreneurship ecosystem is a difficult challenge but it must be accepted. Developed holistic concepts of a cluster and its different arrangement of ecosystem are the examples of architecture closely and loosely related to innovation and economy ecosystem, characteristic for a given territory. The more symbiosis the more benefits for potential and active entities of a cluster, cooperating and advisory entities of local and regional society and the place itself. Companies and organizations within a cluster and its ecosystem are not atomized – cooperate and use the privileges, often created by themselves. However, one must remember that next to benefits, structures such as this are not only the reason of market disturbance but may also lead to limitation and unethical behaviors. Using the Insberg's (Insenberg 2010) discussion, in order to

speak about the whole entrepreneurship ecosystem, its leaders should focus on the following superior principles.

1. One must abandon the will to copy the Silicon Valley. It is hard to deny that the Silicon Valley is an example of entrepreneurship ecosystem, the home of rules changing giants. The Silicon Valley has everything what it takes: technologies, money, talents, critical mass of undertakings and culture, which fosters innovations based on knowledge and allows failures. The Silicon Valley could not however be created once again. Its ecosystem has developed under unparalleled circumstances, composed by: strong local aviation industry, culture openness of California, favorable relationships of Stanford University with industry, rich sources of inventions, liberal migration policy concerning postgraduate students, professional technical knowledge and pure luck. It also seems to be a place where local undertakings are born. In fact, it is also a huge magnet for renowned entrepreneurs from all over the world. The example of Clusterland seems to be more clear and ordered solution, where cohesive cluster and innovation policy of the country translates to region and the idea to co-manage many clusters. However, it is not only the result of the top level operations, but of cooperation culture and trust.
2. Entrepreneurship ecosystem must consider local conditions. This means matching the ecosystem to the size, style and climate of local entrepreneurship. Both examples show the meaning of this element.
3. Key element of the ecosystem are companies - only the private sector has motivation and proper idea about how to create self-sufficient markets oriented at profits.
4. One must favor undertakings having the best perspectives – briefly, this can be called smart specializations, which are worth of support. However, in the age of economy based on knowledge, where the access to resources is global, entrepreneurship ecosystem consists not only on creating own solutions but also on smart adaptation of already existing ones.
5. Spectacular success makes miracles - the last years have shown that even a single success may have surprisingly strong, stimulating impact on entrepreneurship ecosystem - through stimulation of imagination of public opinion encouraging imitating - Aviation Valley in Poland.
6. One must strive to change the culture – assuming that entrepreneurship ecosystem is a network of resources (infrastructure) and principles (infostructure) allowing the entities, which can access them, for implementing common projects, if such resources match the needs and can be used together (infoculture) by such an ecosystem (17), one must strive to continuous improvement of local and / or regional culture of entrepreneurship development. These assumptions are underlined in both cases.
7. One must strengthen roots – entrepreneurship ecosystem should be based not only on actions stimulating for new undertakings but also create conditions that allow for "rooting" of proven solutions. This is a vision of not only creating or attracting new

ideas, but creating conditions for their dynamic growth.

8. One must reform law, procedures and regulations – this is a basic tool supporting entrepreneurship without which, even the most interesting concepts of entrepreneurial and innovative development may not bring expected effects. This is especially noticed by innovative companies, including these which implement new business models. As the experience shows, such barriers are not easy to overcome.
9. As a result, clusters are not theatres which can be "directed" for entrepreneurial or innovative development. They represent a force which supports local and / or regional entrepreneurship in one way or the other. The presented models are of simplified character and their use depends on ecosystem actors, who "write a scenario on current basis".

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SANTANDER UNIVERSIDADES ACADEMIC ENTREPRENEURSHIP ACCELERATOR AS AN EXAMPLE OF GOOD PRACTICE IN ENTREPRENEURSHIP SUPPORT

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Santander Universidades Academic Entrepreneurship Accelerator created and carried out by 'Technopark Gliwice' Science and Technology Park together with the Silesian University of Technology is an example of a good practice, possible to implement in the Turkish ecosystem. The project has gained external funding from the resources of Bank WBK as a part of Santander Universidades group, for whom support of entrepreneurship is one of the fundamentals of their social commitment. As a result of that initiative, having noticed the need of entrepreneurship support among young people, Technopark Gliwice created the Business Model Development Competency Center which has been thriving and fulfilling the idea of popularizing the method amongst the venturesome young people, who constitute the pillar of economy, since 2013. The Competency Centre bases on the training qualifications and experience of their team who have conducted intense advanced workshops, as well as individual counseling and mentoring for the project participants. The trainers learned the method directly from its creator Alexander Osterwalder, and what's important, they continuously develop it and update it with new innovative methods, such as surroundings analysis, creating value proposition for the customers, following the cycle of customer experience, and many more. The trainers' qualifications are rounded out with practical experience and counseling service for SME sector companies. All of that creates the offer of intense training conducted in workshop form for the project participants.

As a result of research carried out by Technopark Gliwice representatives in order to find the best model of entrepreneurship support among young people, the method proposed by Swedish business theorist, entrepreneur and the author of many publications has been found. Alexander Osterwalder proposed an excellent tool visualizing and facilitating development of the business model - the Business Model Canvas which allows to draw

up the fundamental elements of business. 'Business Model describes the rationale of how an organization creates, delivers, and captures value.' (Osterwalder, 2012). The business model allowing to make an analysis and develop the entrepreneurial idea is one of the tools that form an example of inventive and innovative approach to business planning. If willing to stand out in the market, every entrepreneur should perform an in-depth verification of their business assumptions in order to learn about the legitimacy of their venture. There is no one perfect solution or perfect way to run a company in any line of business and every case should be examined individually in order to fill the market niche instead of fighting the already strong competitors.

Business Model Canvas is a tool for creative team work leading to development of the business idea. Being aware of the interrelationships, Technopark Gliwice created an offer directed at people with business ideas - venturesome students, alumni, doctoral students and academic workers. Reference to the global trends of the enterprise business concepts draw-up and maximization of their usefulness in the scope of capital and co-originator acquisition are a big chance for young people.

So far Technopark Gliwice accomplished 2 editions of the project Santander Universidades Academic Entrepreneurship Accelerator in which 80 participants took part. Further 50 people are going to have seized that opportunity by the end of 2018 as part of the 3rd edition. As an effect of the intense 35-hour workshops held in groups of 10-12 people and individual counseling with the trainers, the participants generate and develop their business ideas on the basis of the acquired knowledge and with the use of the tools provided. The final of each edition of the project is a contest for the participants who present their innovative business models evolved within the training. The experience gained in the process of carrying out the project shows that venturesome women constitute minority among the people interested in the project.

Women's business ideas are in vast majority the models of service companies, although this is not a rule. Within the first edition of the project, out of 40 participants 7 were women and one of them, a student of Information Technology faculty of the Silesian University of Technology became the prizewinner along with three men. The winners were awarded a chance to participate in a studio visit in the Silicon Valley in the USA where they presented their business ideas in front of potential investors, visited co-working spaces, got to know the stories of startups developing in the United States and attended dedicated trainings. The first winner was awarded almost 10.000 euro for development of the business model.

Fig. 1 - Picture of the winners and participants of the first edition of Santander Universidades Academic Entrepreneurship Accelerator

In the second edition of the project women constituted about 13% of all the participants. In the final contest for participants, winners were selected. The main prize for them was a studio visit in Tel Aviv, Israel. They were awarded a chance to meet the potential investors, in front of whom they could present their business ideas, take part in dedicated trainings and meet Israeli startups in order to exchange experience. 3 men won the contest, although one woman was granted an additional award which was invitation to speak to the investment fund Gliwice Technology Accelerator Ltd. The contest jury took into account the innovation of the business idea, possibility of its implementation, the originator's potential and their commitment.

Fig. 2 - Picture of the winners of the second edition of Santander Universidades Academic Entrepreneurship Accelerator

Despite of the distinct minority of women among the project participants and majority of the service business ideas, women's business models seem to be more refined, well-thought-out and logically organized. Innovative, technologically advanced models performed by women or teams containing women often turn out to be perfectly refined thriving business enterprises. This makes us hopeful of bigger engagement of the female part of venturesome people who may lack courage or confidence in their ideas' success.

Currently preparing for the third edition of the project we hope for a bigger response from women. Nevertheless, it is noticeable that the project conducted by Technopark Gliwice together with the Silesian University of Technology is popular among young entrepreneurs who miss essential knowledge served in accessible, workshop-style form with opportunity to refer to their own business ideas.

We find Santander Universidades Academic Entrepreneurship Accelerator worth following and a practice worth of implementing in developing markets willing to stimulate entrepreneurship among young people at the beginning their career paths. The proof for that is in the big interest of potential participants and the fact that 2018 will witness the third edition of the project.

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GLIWICE TECHNOLOGY ACCELERATOR, AS AN EXAMPLE OF GOOD PRACTICE IN ENTREPRENEURSHIP SUPPORT

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Introduction

Entrepreneurial competences are extremely important in the modern world. Entrepreneurship is considered to be the main stimulus for introducing the economic development of a given region, increasing its competitiveness or improving the quality of life of its inhabitants. According to the latest AGER report 2018 more than 70 per cent Poles positively evaluate the idea of entrepreneurship, and 41 per cent declare that they consider starting their own business(Amway Global Entrepreneurship Report, 2016). However, the results of the study indicate that regardless of the age group, gender or education, the most important need is support in acquiring funds for the development of a business idea. That's why financial support instruments such as resources from EU funds and in particular national operational programs play such an important role. Financial support from the European Funds in 2014-2020 directed at six national operational programmes: Infrastructure and Environment Operational Program, Inteligent Development Operational Program, Knowledge Education Development Operational Program, Easter Poland Development Operational Program, Digital Poland Operational Program.

One of the examples of grant-investment instruments is the investment fund **Gliwice Technology Accelerator**functioning as a part of BRIdge Alfa of the National Center for Research and Development, financed with the resources from the European Regional Development Fund. (Polish executive agency, appointed to perform tasks from the scope of science, education-and-technology and innovation policy of the country. The mission of NCRD is supporting Polish educational units and enterprises in developing their potential to create and make use of solutions based on the scientific research results in order to bring the developmental impulse to the economy and with the benefit of the society.)

What does Gliwice Technology Acceleratordo and how does the BRIdge Alpha mechanism work?

Gliwice Technology Acceleratoris a seed fund operating under the BRIdge Alfa program, financed from the resources of the Intelligent Development Operational Program. The main goal of the BRIdge Alfa Funds is to support research and development projects in the early stages of development, where the risk of investment failure is greatest. This means that the Bridge Alpha program is designed to strengthen the commercialization mechanism of Polish R & D projects and increase their chances for market success thanks to the capital and substantive support of the originators of innovative solutions. In a broader sense, this means increasing the demand for and supply of innovative R & D projects with commercial potential as objects of investment for entities, such as private equity and venture capital funds playing an important role in the innovation development ecosystem.

The role of the Fund is therefore to professionalize the process of supporting the commercialization of innovative technologies from the public funds by entrusting private investors with the process of selecting projects that will receive funds as part of a private investment and support from the public funds. Such a mechanism (combining public and private funds in innovative projects) results in the public party taking a greater part of the investment risk, making the risk acceptable to private investors. As a consequence, the BRIdge Alfa instrument increases the involvement of private capital in the development of new technologies in Poland. Thanks to that, overcoming economic barriers as well as functioning stereotypes, it creates a platform for cooperation between representatives of the world of science and technology and investors in the scope of increasing the technological and market potential of the Polish economy.

Smart Technology Group as an example of a portfolio company of the Gliwice Technology Accelerator.

The Gliwice Technology Accelerator supports the development of entrepreneurship through financial and substantive support for Polish startups. The Fund, operating since 2014, invests in research and development projects in the early stages of development. The Gliwice Technology Acceleratorcurrently has 8 companies in its portfolio. One of them is the Smart Technology Group. This innovative company is a great example of the fact that it is worth investing in innovation but above all in a team whose entrepreneurial skills are a key element of the company's success. The combination of innovative technology with the knowledge, experience and determination of the project team distinguished the company from the competition and finally determined the support from the Gliwice Technology Accelerator.

The company's representatives are two female researchers from Krakow, who offer a product that none of the global giants had been able to provide before, they have already won over the global players from the most dynamically developing industries to support their idea.

Name of the project: SMART RFID

Name of the company: SMART TECHNOLOGY GROUP SP. Z O.O.

Funding: 348 658 Euros

At the beginning no one believed that two women from Poland could make advanced products for the technology industry. Monika laughs at that and says that two women in the masculinized world of modern technologies are kind of "exoticism". "Everyone we met assumed that there must be a man behind us: older, experienced, maybe some professor who gives us ideas and coordinates our work. But we have achieved all of that by ourselves, with our hard work." says slightly amused Karolina Kozłowska. (See www.innpoland.pl "Slip the corporate leash and create a global company in two years. Those researchers from Krakow made it.")

SMART Technology Group is the only company in the world that creates RFID UHF readers, which connect RFID, Beacon, WiFi, ZigBee, GPRS technologies in an innovative way.Smart Technology Group products can identify several hundred of elements (objects, people) in a few seconds from a large distance and in the movement. There are many examples of application. The developed innovative solution can identify the entire range of products in 2 seconds, inventory goods throughout the store or warehouse in several minutes, track the movement of people in factories, museums and hospitals. Thanks to this technology clients optimize their processes and save time and money. For example, in a warehouse where three employees work for the eight hours in the inventory process, the same work can be done by two people in half an hour after the implementation of the solution. An important aspect of RFID technology is also the increase of employee safety. Thanks to the ability to identify and track people, the devices create systems supporting evacuation in large objects. This is extremely important in the case of, for example, a fire - the readers indicate the current location of an employee so that we

know who is still inside the place of danger and who is already in a safe place.

The customer market was divided into several fields which are the target of Smart RFID:

- access control and TNA,
- entry/exit control,
- inventory – integration with companies offering software,
- trade,
- logistics – integration with companies offering software,
- production – integration with companies offering software,
- sport.

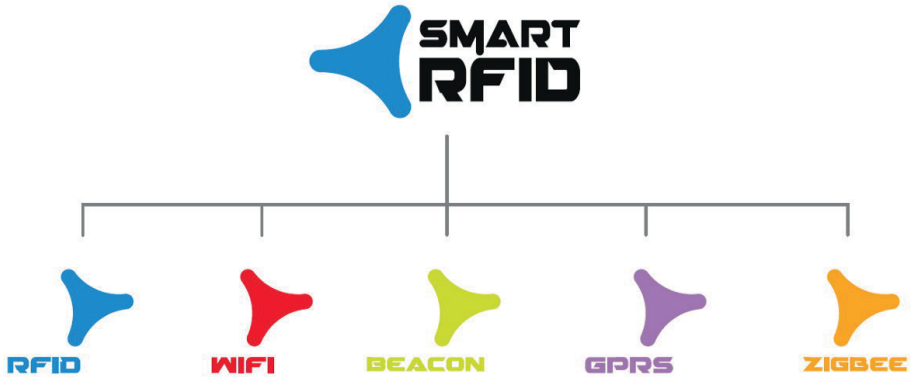

Fig. 1 - From left: Precise identification, The biggest coverage, Direct communication with clients, The fastest data transmission, Economy of energy.

The company sells their products in Europe and Asia, as well as in Africa and the Middle East. The Smart Technology Group products are constantly developed and new functionalities are added. The company is also working on new products.

Gliwice Technology Acceleratorsupports innovative projects, but above all, innovative teams, emphasizing that people are the power of innovation. An example of such team is the Smart Technology Group company, behind which there is an ambitious and harmonious team of people who passionately carry out their work adhering to the same principle:

"We focus on people because we believe that our success depends on our team."(www.smart-tg.pl)

Remember - THINK SMART!

It is worth mentioning, in the end, that Polish women are more and more venturesome. 30,3% of companies are managed by women, This is a very good result, which gives Poland the 7th place among the 57 countries analyzed around the world and the 2nd place in Europe (behind Russia).(Mastercard Index of Women Entrepreneurs (MIWE) 2018 Report.)

How does the Fund support work?

The BRIdge Alfa Fund supports R & D projects in the initial phase of their development, Proof of Principleand Proof of Concept, which are characterized by high demand for capital with a high degree of investment risk resulting from the uncertainty of the success of a commercial project.

Proof-of-Principle - phase of the R & D project, based on an early verification of the Idea during which industrial research and experimental development works, initial assessment of the R & D project potential, competitive environment analysis, defining the research plan and the first milestones of development A R & D project are carried out, the implementation of which is possible, inter alia, in scientific units (universities, scientific institutes of the Polish Academy of Sciences, research institutes, other scientific units) or through individuals or dedicated project teams (inventors, originators).

Proof-of-Concept - phase of the R & D project based on proper verification of the idea during which industrial research and development works are carried out, the results of which (if positive) in typical situations enable full patent application or transition to the international phase of priority declaration in PCT mode or commercial use of the result of the R & D Project, usually carried out by a legally distinct entity dedicated to the implementation of the R & D Project.

By the Fund's support we mean the transfer of funds as well as providing assistance in the organizational, legal and substantive areas. The maximum amount of financial support is PLN 3 million, which includes taking up shares in the company implementing the project and transferring the grant from the NCRD funds.

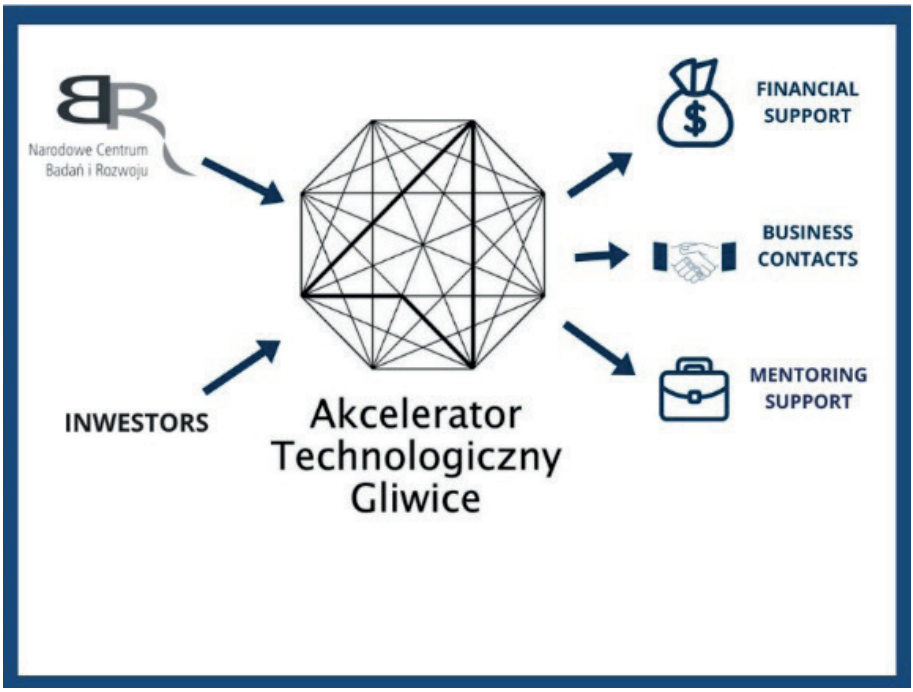

Fig. 2 - Gliwice Technology Accelerator

What kind of projects are supported by the Fund?

The fund supports the most **innovative projects** with **high potential** for commercialization on the international arena. At the same time, innovation is understood as a new technique / product / service or a new way of offering existing products or services on the market.

One of the key elements determining the granting of support is also the **science-research** and **research-development** nature of the Projects. In addition, the Projects must be in the **earliest stages of development**, such as the phase of industrial research, experimental development works, the phase of the initial assessment of the R & D Project potential, competitive environment analysis, definition of the research plan and the first milestones of the R & D project development (Proof of Principle), or in the industrial research and development phase, whose results enable full patent application (Proof of Concept). The submitted projects must also have a **Polish element**, which means that the entity must have its registered office in the Republic of Poland.In the process of Ideas assessment the experience of the originator and their team is also taken into account.

Who can submit a project?

Anyone can be a creator of innovative solutions. An entrepreneur, as well as the

university, research institutes, scientific institutes of the Polish Academy of Sciences, as well as individuals, that is individual innovators.

Which industry Projects does the Fund support?

The main investment area are technological projects in the field of the Key Intelligent Specialties. A detailed description of the support areas is provided below:

- Multifunctional materials and composites with advanced properties, including nanoprocesses and nanoproducts
- Electronics based on conductive polymers
- Automation and robotics of technological processes
- Sensors (including biosensors) and intelligent sensor networks
- Intelligent networks and geoinformation technologies
- Optoelectronic systems and materials
- Intelligent creative technologies

Assessment procedure and qualification of the Idea for subsequent stages (Proof-of-Principle and Proof-of-Concept)

Fund experts verify the idea using the Idea Evaluation Form, in which the access criteria are evaluated (such as whether the project has a Polish element and whether it is located in the area of National Intelligent Specialties) and substantive (including the state of progress of works on the project, the level of innovation or competitive advantage). The reason for the negative assessment of the idea at the verification stage may be failure to meet any of the access criteria, failure to obtain a minimum number of points within the substantive criteria or the risk of a conflict of interest with other projects analyzed or implemented by the Accelerator.

The Accelerator has the right to apply to an independent expert who, in compliance with the rules of confidentiality, will issue an independent opinion on the Idea to the Accelerator.In the case of a positive assessment regarding the Idea's eligibility to the Proof-of-Principle stage, the Investment Contract governing the principles and conditions of the Proof-of-Principle action is transferred to the Originator.

In the next phase, i.e. after the formation of a commercial company, the financing is given to the enterprise which sets about to performing the previously defined business objectives and continues the research and development work, usually in the Proof of Concept phase. At this stage, the BRIdge Alfa Fund already exists as a seed fund, which evaluates the company and holds the Share Rights therein in return for the monetary contribution being the subject of the Investment. In the second phase, i.e. after the Investment, the Fund's financial commitment takes on an additional legal basis in the form of a separate agreement under which the Fund transfers the Public Funds to the Portfolio Company under the Grant (Support Agreement). The Support Agreement

imposes specific requirements and obligations on the Portfolio Company in relation with receiving public funds under the Grant.

Conclusion

The development of entrepreneurship plays a significant role of economic policy, both in Poland and in the world. Many institutions and programs are created whose overriding task is to support, create and develop entrepreneurship. The main objectives of these Programs in various countries are often similar, e.g. increasing the level of entrepreneurship of people, increasing the number of new enterprises, supporting the development of Institutions of Business Environment and increasing the number of business incubators. However, the implementation of Programs in each country is proceeded in different ways. There are, however, various specific objectives, principles of functioning of particular programs and the scope of support offered. In the case of the BRIdge Alpha mechanism, the overriding goal is to support Polish entrepreneurs and scientists in the process of commercialization of research and development projects in the early stages of development. BRIdge Alfa investment vehicles are a new type of investment support. That is why it is so important to constantly monitor the market and analyze the available programs that enable their development and ultimately the choice of the most suitable, tailored to our needs. The activity of investment funds such as Gliwice Technology Acceleratorshows that such formula constitutes a great opportunity for young, prospective projects. This means that the program may not only be economically effective, but also contribute significantly to the development of Polish entrepreneurship.

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Judyta Grzebniewska graduated from the Tischner European University in Cracow in the field of "Project management." She worked as a consultant for European affairs and implemented projects co-financed by the EU funds. Judyta coordinates the project "My company in my commune" aimed at developing competences in entrepreneurship as well as information and communication technologies among pupils. In 2012-2014 she worked as an auditor and facilitator in two projects implemented by the Science and Technology Park "TECHNOPARK GLIWICE" LTD: "The Analysis of the Creativity Level and Absorption of Innovation in Enterprises" and "The Network of Regional Specialist Observatories". Judyta is an experienced trainer in techniques and methods of creative thinking, team building and project management.In 2015 Judyta started her job as a technology scout at the investment fund - Gliwice Technology Accelerator Ltd.

THE SETUP PROJECT "START-UP MANAGER, INNOVATION MANAGER, NETWORK MANAGER – A VOCATIONAL TRAINING PATH ON ENTREPRENEURSHIP TO FILL THE GAP BETWEEN EDUCATIONAL SYSTEMS AND LABOUR MARKET" AS AN EXAMPLE OF A GOOD PRACTICE IN ENTREPRENEURSHIP SUPPORT

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In 2015, the Science and Technology Park "Technopark Gliwice" Sp. z o. o. established cooperation with an Italian non-governmental organization Dedalo Onlus, which has been managing training centers located in Como and Rome for 20 years. The centres organize courses to support young people at school age, as well as those who have already started their professional career. Dedalo Onlus as a Project Leader, together with Italian and Polish Technology Parks and training centers from Portugal, Romania and Great Britain, began carrying out the international project SETUP "Start-up manager, Innovation Manager, Network Manager - a vocational training path on entrepreneurship to fill the gap between educational systems and labour market", co-financed by the European Union under the Erasmus + program.

The need to implement the project was born from the supposition that there is a gap in the educational system in partner countries, i.e. in Poland, Italy and Portugal in terms of entrepreneurial skills. The greatest need for introducing this type of experience was detected in secondary schools. The research carried out at the beginning of the project indicated the lack of the possibility of combining theoretical knowledge and practical skills among young people. The need to introduce new professions into the international labour markets, such as the Start-up Manager, Innovation Manager, and Network

Manager was identified. The surveyed companies in selected countries clearly indicated the need to create a training profile that will enable the development of the most desirable competences for companies, such as: anticipating new trends / technologies, creating and managing a cooperation network, project budget management or open innovation s kills. Introduction of new professional profiles to the market would be to allow for a reduction of the gap between the education system and the labour market.

The main goal of the project was to raise competitiveness of the participants on the domestic and international labor markets by helping to develop their entrepreneurial skills, enabling them to acquire business experience in the country and abroad, as well as providing the opportunity to expand their knowledge of the subject of business and to develop language and IT skills. This goal has been achieved through the use of innovative solutions and tools, as well as the cooperation of international experts.

This unique business development program was designed for people who have been over 18 years of age, had a secondary school diploma and a good command of English. In December 2016, the results of the recruitment were announced during the conference inaugurating the project. 10 people motivated to participate in the project were selected. The project required a lot of commitment from the participants due to theoretical and practical classes that took place in the afternoons several times a week for two years, and foreign trips from several-days workshops, to over 40-day internships in Italian and Portuguese enterprises.

Fig. 1 The picture of the SETUP GRoup

In the group of the project participants there were seven men and three women. They are students of technical faculties at the Silesian University of Technology. Such result

was very satisfying to us due to the significant dominance of men at the one of the largest technical universities in Poland. Jagoda was a student at the Faculty of Biomedical Engineering and she studied biomechanics. Her interests included environmental protection / biology, biomedical engineering, IT. Kasia, in turn, studied Mechanics and Machine Design at the Faculty of Mechanical Engineering of the Silesian University of Technology and was interested in PR / marketing, finance and accounting, engineering / mechanics. The last participant, Ola was a student at the Faculty of Automation, Electronics and Computer Science and she studied Biotechnology with a specialization in Bioinformatics. Her interests include IT, mechanics / engineering, biotechnology, bioinformatics, and virtual reality.

The project consortium created a model of a 2-year course, in which the project participants took part in training with business practitioners in the field related to the specialties of Start-up Manager, Innovation Manager and Network Manager. These specialties have proved necessary in the labor market in partner countries, which results from the international enterprise needs research carried out as the first project activity. The course has been prepared by specialists from schools and technology parks from partner countries. Classes have been planned for the participants in subjects like principles of business, human resources, innovation, and projects management. They attended a number of meetings related to the formal aspects of running a business, marketing or HR. There were classes on creativity, self-presentation, communication or partnership management. In addition, a large part of the training block has been devoted to business models and innovation, as well as budgeting, financing and certification systems. As part of meetings with seed fund experts, they deepened their knowledge in the scope of creating a business plan, feasibility study, patent law, as well as internationalization and market analysis. This comprehensive store of knowledge was undoubtedly the greatest asset of the course and developed the necessary competences and entrepreneurial skills in the participants.

The project participants also held visits at Gliwice enterprises which are the leaders on the Polish and foreign markets in sectors such as IT and automotive. Together with the participants, we visited one of the most modern IT companies in our region - Future Processing Sp. z o. o. We also had a chance to visit the company Kirchhoff Automotive, which is the global developmental partner of the automotive industry. The project participants also had the opportunity to meet the representatives of companies located in Technopark Gliwice, such as the EMT-Systems Sp. z o. o., which is the biggest engineering training center in Poland. They also visited the company's laboratories which are developing at a very fast pace. These are undoubtedly very valuable experiences for such young project participants who are at the beginning of their professional career. Possibility of speaking to the representatives of companies about their business models and the long road to success were an important element of the project.

Participants also had the unique opportunity to acquire international business experience

through participation in 40-day internships in enterprises cooperating with organizations responsible for the project. 2 people deepened their professional experience in a law firm in Portugal, where they could cooperate on the implementation of new technologies and software. Further 2 people who went to Portugal had the opportunity to get to know the innovation department and work on a joint project in the field of interface and knowledge management in one of the largest international corporations operating in the automotive industry in Europe. Six more Participants had the opportunity to do internships in Italy, in companies located in Comonext Technology Park. Two participants learned about modern technologies used by a company operating in the geoinformatics sector. Another 2 people stayed at a company, which designs security solutions for the use of mechanical devices complying with the international rules and regulations. The last participants returned to Poland at the end of November 2017. Thanks to the participation in the project they could work with the company operating in the field of robots used in 3D printing in the scope of methods of finding and developing solutions on the innovation market. Thanks to over a month-long internships in foreign enterprises, participants developed their language and communication skills, strengthened their self-confidence and learned to work in a multicultural environment. Each person received a certificate confirming participation in the internship and also gained valuable experience in the foreign labor market.

Another important element of the project was the involvement of participants from Poland, Italy and Portugal into an international business game which involved simulation of the startup process and aimed at acquiring experience by participants in working in an international team. For the purposes of this initiative, an online platform was created that allowed participants to stay in touch and have an insight into the training materials of the project partners, and to work on the joint project. With the help of international trainers, the participants were divided into groups responsible for different stages of the company creation and based on a business idea, they designed their product and planned its implementation on the market. We will get to know the results of their work soon.

The project participants also had the opportunity to exchange their experiences related to participation in international projects supporting entrepreneurship with the participant of the project "InnoWomEnt - Innovative Women Entrepreneurs of the future ", which is being implemented at the same time by Technopark Gliwice. As part of this project, a student from Turkey took an internship in one of the companies located in Technopark Gliwice.

The official finish of the project is planned for July 2018 in Rome as a 5-daytrip, where participants and selected trainers will have the opportunity to take part in the closing meeting of the project. During the meeting they will sum up their participation in the project and evaluate its effects. The course of the project was the first of such kind to be implemented by the Technopark Gliwice, taking into account its duration and the mode in which the classes were held, both full-time and online. After completion of

the project, analyses of its effectiveness will be carried out, along with any necessary modifications,which will enable the development of the best support package for young people. Also, attempts will be made to continue the SETUP course at the end of the project period. Cooperation between training centers and science and technology parks guarantees immediate practical application of the acquired knowledge, which should improve the situation of young people on the labor market. We hope to achieve the best results, the most important of which is finding jobs by the project participants, thanks to the acquired theoretical knowledge, practical skills and professional experience. The result of the project will also be a handbook in which the innovative training materials supplemented with the experience of trainers and course participants will be published.

Science and Technology Park "Technopark Gliwice" has been promoting entrepreneurship through the implementation of various types of entrepreneurship support programs for 14 years. During this time, it has developed many effective tools for entrepreneurship development and helped thousands of young people at the beginning of their careers. The training, counseling and close cooperation with nearly a hundred enterprises allowed for the creation of a completely new course model, which includes a comprehensive offer of support and the opportunity to develop entrepreneurship among young people. It was the first initiative of such a long duration, and also of the international scope implemented by Technopark Gliwice. In addition, it was a particularly interesting experience, because it was introduced and tested in several countries at the same time. This good practice stands out among the others with the author course program, covering the three specialties mentioned above, collaboration of technology parks, training centers and language schools, as well as experienced trainers - long-time business practitioners and the best experts of the seed fund operating within the Technopark Gliwice, which altogether creates the best combination of the necessary elements of supporting young people in starting their adventure with business.

Project consortium:

- Dedalo Onlus , Como (Italy) - Project Leader,
- Science and Technology Park "Technopark Gliwice" Sp. z o.o, Gliwice (Poland)
- The ComoNExT Technological Science Park , Lomazzo (Italy)
- APECEF, Lisbon (Portugal)
- Asociatia "Aldo Moro" , Bucharest (Romania)
- St. Joseph Foundation , London (Great Britain)

Karolina Bieda - a graduate of the University of Silesia, University of Economics and the Silesian University of Technology. At the Silesian University of Technology, she completed post-graduate studies as Innovation Manager. For almost 9 years associated with the Science and Technology Park "TECHNOPARK GLIWICE" Sp. z o. o. where, as the Assistant to the Management Board, she supports the creation and incubation of innovative technology companies, coordinates the organization of networking events, technology fairs and conferences, and also deals with the implementation and settlement of projects co-financed from the European and ministerial funds. She represents the Company in contacts with potential contractors and investors, and also establishes and maintains international relations and cooperation. Additionally, she is a creativity and team building trainer. Since 2015, she has been a coordinator of the international project "Start-up Manager, Innovation Manager, Network Manager - a vocational training path on entrepreneurship to fill the gap between educational systems and the labor market". Since 2018, she has been also involved in the international project "InnoWomEnt - Innovative Women Entrepreneurs of the future".

3. Guidelines for prospective entrepreneurs

ON FACTORS AFFECTING WOMEN ENTREPRENEURS AND ON EMPOWERMENT

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***Abstract**: Hofstede's cultural dimension of masculinity-femininity is presented and applied to explore the natural strengths characterizing social status of women from different countries. We then review selected academic publications on gender and entrepreneurship from the last decade. Finally, we discuss the importance of empowerment and describe practical implications of important research in the area of social psychology by Amy Cuddy.*

The "masculinity-femininity" dimension of culture impacts women's professional careers

Geert Hofstede defines culture as "the collective programming of the mind distinguishing the members of one group or category of people from others" (Hofstede et al., 2010). Hofstede with his team conducted extensive global research related to the big influence of culture on values in the workplace (Hofstede et al., 2010). He created the model of national cultures consisting of six dimensions that are essential in terms of organizing the life of any society. From the point of view of this book, the most relevant is the masculinity-femininity dimension. In the business context, masculinity-femininity distinction is sometimes also referred to as "tough versus tender" cultures.

A masculine society emphasize competitiveness and the acquisition of wealth based on assertive behaviors and ideals. Members of the society with a high score on the "masculine" scale accept to resolve conflicts through aggressive measures. Roles in this kind of society are different for men and women. The main life's priorities are achievement and expansion, so they tend to "live for work" having longer work hours and shorter vacations.

"Feminine" societies are dominated by cooperation, building relationships and quality of life through nurturing behaviors. In such societies women and men share equal positions and "work to live" in flexible time and prefer longer vacations. The main priority for its

members is family and most often they settle conflicts through negotiation.

In the case of doing business or working in a country with higher masculinity score than that in your country, one should take into consideration that business culture is competitive and self-promotion is socially acceptable. At the same time, people communicate unemotionally in direct and concise way, discussing business matters anytime, even in social situations. Asking personal questions in business circumstances is considered unprofessional.

On the other hand, when you consider working or doing business in a country with lower masculinity score compared to that of your country, then you should know that trust means more than profits. People do not feel that support for relatives in the business context is something inappropriate. In social situations discussions focus on personal interests and private topics and it is not impolite to ask people personal questions.

According to Hofstede and coworkers (2010), Japan is the world's most masculine society, with the rating of 95. Other "masculine" cultures are USA, Germany, Ireland and Italy (evaluated as 70). Poland has the score 64, Turkey 45. Sweden is the most "feminine" society with the rating of 5, followed by Spain, Thailand, Korea, Portugal and countries of the Middle East. Importantly, this dimension does not explain well gender equality in the society and there are many feminine cultures that have low gender equality, e.g. in the Arab countries. Women who are managers and entrepreneurs in those countries must be ready to face strong barriers and stereotypes.

Managing diversity in business: women entrepreneurs

Effective ways of managing diversity in teams may also be discussed from the perspective of gender diversity, racial diversity and all other forms of differences among team members that may be converted to improved team performance. The issue of diversity leads to the question: is business gender-fair?

From the perspective of the project InnoWomEnt it should be emphasized that entrepreneurship and the process of business incubation may be argued by some to be not gender-neutral. Various social pressures may significantly affect the psychological well-being of women considering careers in business and may also diminish the expression of their natural talents. The issue of understanding specific gender-limited challenges that exist in the world of business clearly requires more attention from both academic researchers and decisionmakers.

Social constraints on female entrepreneurship

Gender and culture have important influence on the kinds of value creation stressed by entrepreneurs (Hechavarria et al., 2017). Women more often emphasize creating goals of social and environmental value, in contrast to men who prefer economic values. Maybe this is one of the reasons (in addition to the factors we discuss below) why companies led by women display less innovation scope, compared to those led by men (Strohmeyer et

al., 2017)? Also, women's perception of themselves as entrepreneurs is less positive than in the case of men assessing themselves, across all 17 studied countries.

Taking into account gender stereotypes in the way entrepreneurs are perceived, there is still a conviction among men and women that entrepreneurs exhibit mostly masculine features. For example, women-entrepreneurs in technological firms experience stereotypical expectations and, to succeed, are expected to express masculine norms of behavior (Marlow & McAdam, 2012). Women who saw themselves to be more like males, had stronger entrepreneurial intentions (Gupta et al., 2009; see also Gupta et al., 2014). However, women (but only women) saw some feminine gender stereotypes as compatible with entrepreneurial behavior (Gupta et al., 2009).

Highly patriarchal society restricts entrepreneurial spirit among women through cultural and social norms. Women entrepreneurs face many obstacles, i.e. access to resources and capital or new business opportunities that they must conquer and experienced unequal treatment in terms of education and employment. Their natural abilities of networking and building relationships are the key factors helping them to overcome those barriers (Kalafatoglu & Mendoza, 2017), but women's entrepreneurial behavior may be significantly (negatively) affected (Langowitz & Minniti, 2007).

Considering gender patterns in academic entrepreneurship, female academics are more likely to be pushed to applied research (often considered to be less prestigious), are more often than men hired for technical jobs or work in junior positions, mostly in social and health sciences, humanities and education fields. Because of all such factors, a large gender gap exists in the academic world and women's spin-out activity is lower than that of men (Abreu & Grinevich, 2017).

A study of entrepreneurship in the Arab world indicates that education has a more positive impact on women's entrepreneurial incentives than in the case of men. However, men tend to benefit much more than women regarding educational achievements and competencies and are more likely to take advantage of market opportunities (Bastian & Zali, 2016).

Women entrepreneurs receive significantly less government venture capital as financial support, the situation no doubt caused by gender and social stereotypes that influence the funding decision-making process (Malmstrom et al., 2017). Even in such a highly developed country as Germany, female entrepreneurs still face the same gender constraints as those experienced in full-time employment. Therefore, women's expectations with regard to their entrepreneurial careers are not completely fulfilled (Braches & Elliott, 2017).

In order to improve a population's economic well-being, it is essential to engage more women in creating new business opportunities instead of just giving them jobs as employees. Consequently, policy makers should implement more helpful training programs for women to serve the development of their businesses and sustainable

growth of societies (Bullough & Renko, 2017). Entrialgo & Iglesias (2018) noticed that external factors such as exposure to parental role models and education towards entrepreneurship have, in fact, a more positive influence on women's attitudes towards entrepreneurship than on men's attitudes (see also Wilson et al., 2007).

Entrepreneurship requires a set of traits and behaviors that start from the motivation and ability to recognize a business opportunity and then to strive for it to turn into a new value - a product or a service. The research indicates that the main factor determining entrepreneurial behaviors is entrepreneurial intention of a person to start own business (Yildirim et al., 2016; see also Gupta et al., 2008). At the same time, it is worth emphasizing that family support plays a strong role in successes of female entrepreneurial attempts. Unfortunately, the less developed a country the weaker the encouragement women receive from family members to decide on entrepreneurial activity (Batool & Ullah, 2017) – just the opposite of what would be needed for societal progress.

As women are more capable at multitasking and playing diverse roles at the same time, entrepreneurship would give them more time and flexibility for managing their various priorities (Batool & Ullah, 2017; see also Minniti & Nardone, 2007) than traditional, inflexible, forms of employment. According to Joona's (2018) research regarding motherhood's effect on self-employment performance, women who have a child generate higher income and revenues and hire more employees in their firms than childless women. These findings are fascinating and contradict the usual assumptions that women without children are potentially more available, less time-constrained and spend more time running their businesses. Moreover, higher representation of women in top management of companies turns to their advantage: for example, it correlates positively with entrepreneurial results, such as products or services launched successfully (Lyngsie & Foss, 2017).

The impact of gender and culture on female entrepreneurship in Turkey

As Tuzun & Takay (2017) have shown, women's entrepreneurship in Turkey is mostly a result of their strong intrinsic motivation. Interestingly, Turkish women have higher motivation regarding self-employment compared to Turkish men and even to European women (Gulumser et al., 2011); they more often than men define a goal of contributing to the well-being of their families (Altan-Olcay, 2014). According to the study by Maden (2015), successful Turkish female entrepreneurs have some common characteristics: they are perceived as mentally strong, patient, persistent, determined, and with a vision and innovative ideas. The other important factor that influences the personality characteristics of potential women entrepreneurs in Turkey is the parenting style of their fathers (Boz & Ergeneli, 2014).

The chances of becoming a women entrepreneur in Turkey are higher if women are encouraged by enhanced access to education and an opportunity of exploiting the family capital. The human capital has higher impact on women than on men in the

case of entering the entrepreneurial path (Cetindamar et al., 2012; see also Yetim, 2008). However, Turkish women entrepreneurs experience family support that occurs in both positive and negative ways (Welsh et al., 2016). They are facing a fundamental challenge to be driven by the willingness to succeed as entrepreneurs and become more independent in the socially constructed role system. For example, the field of public relations still prefers a "lily-white" woman as a professional ideal (Vardeman-Winter & Place, 2017).

To empower women in Turkey, especially those working in nontraditional disciplines, it is important to emphasize the importance of building self-confidence. The other significant issue is education on gender equality, but addressed towards both men and women (Landig, 2011; see also Ozkazanc-Pan, 2015).

In order to encourage more Turkish women to enter the entrepreneurial process there is also a basic need for access to professional advisers to improve their poor managerial knowledge and skills and obtaining support from public institutions. The main issue women come up against is finding and managing capital. Therefore, most of women entrepreneurs practice applying for financial support from the government, banks or other non-governmental organizations (see also Boz & Ergeneli, 2014). There are also some EU-funded projects, supported by policies of national agencies that deal with women's empowerment in Turkey. Their main focus is on increasing the contribution of women to the job market and training them as potential entrepreneurs.

Empowerment

In everyday life many people from different backgrounds and cultures struggle with stressful challenges. They have to find the courage: defending something they believe, being interviewed by recruiters or potential employers, speaking in front of a large audience, facing daily difficulties or just trying to find peace and be themselves.

Amy Cuddy, a social psychology professor and researcher at Harvard Business School, has carried out for more than 15 years interesting research on the importance of body language. In her book "Presence" (Cuddy, 2015), she argues that changing our body positions and movements can influence not only how other people perceive us, but even our own body chemistry (and, consequently, mood and behavior). She has classified two types of body language patterns:

- contractive (low power) poses, expressing closed and defensive attitudes, and
- expansive (high power) poses, expressing power attitudes.

Cuddy's revolutionary view proclaims that we can successfully train our self-confidence. The idea is based on adopting postures that animals express when they are powerful and dominant and which people use when they feel that way - an adaptation of the poses calms us down and causes that we feel more powerful, more confident and proud. The psychologist claims that applying the "power postures" can totally change our behaviour and our social interactions. In a sense this is like tricking our brains into generating feelings

of triumph and victory. There are opposite effects when the inhibition system is activated as a result of powerless and contractive poses.

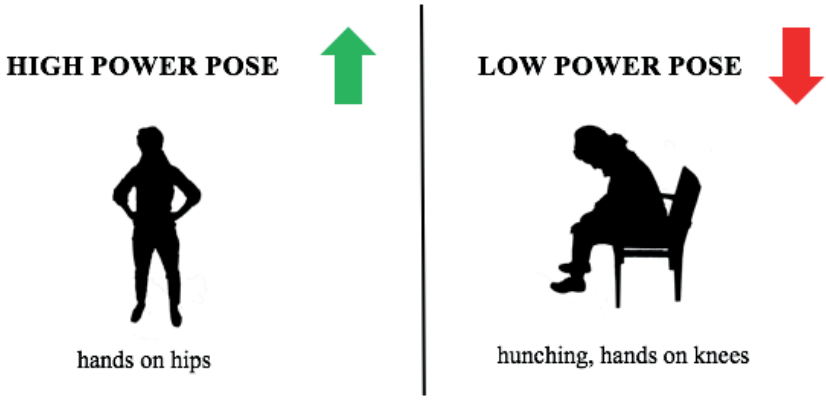

Fig 1 – Body poses, according to Cuddy (2015): high power (expansive; left image) and low power (contractive; right image).

Amy Cuddy's ideas were spread around the world through TED: her talk "Your body language may shape who you are" is one of the most watched TED's talks in history, with over 13.5 million views (as of February 2018. (https://www.youtube.com/watch?v=Ks-_Mh1QhMc). She has won many supporters but also has faced criticism of her work, especially from some scientists who found problems in the scientific methods of gathering data and documenting evidence on the effects of poses on hormone levels.

Box – Practical advice

To practice our self-confidence Amy Cuddy gives the following advice: stand up, raise your arms above your head in the victory stance and do it for 2 minutes; it is recommended before any social or stressful situations.

This powerful pose with raised arms above one's head in the victory stance is called "pride" (Figure 2). What is really fascinating, even blind people spontaneously use this pose when they are victorious in important events, even when they have never seen it or have never been taught how to do it.

Fig 2 – The "pride" body pose, according to Cuddy (2015). Photograph (courtesy of Natalia Grabek) taken at the Bursa Technical University on February 28, 2018, during the InnoWomEnt workshop.

Such controversies aside, the studies by Cuddy (and by more than 100 other researchers) confirm definitely that adopting expansive poses boosts our feelings of power and confidence. Sense of power influences positively an individual's executive functioning, the ability to self-regulate and perform in many fields, and personal optimism and authenticity.

Women are stereotypically associated with contractive postures. Males easily adopt expansive postures. Therefore, using confident body language is the best solution for women to activate the approach system which elicits more happiness, more optimism, more creativity, higher likelihood to take action, to seek rewards and opportunities, to have more physical energy and feel less inhibitions. As small causes can have big effects and can lead to big changes, and we have nothing to lose, Cuddy recommends to try out and make changes in our lives.

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ON THE IMPORTANCE OF GENDER IN CREATIVE THINKING

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***Abstract**: We ask if heuristic methods are gender-neutral and argue that some methods (e.g.change Ego) that rely on sensitivity to other people's viewpoints, to be effective, must necessarily be formatted in a gender-symmetric way to be implemented by women. In most situations it is helpful to be gender-neutral, and to avoid sex-biased language. Some methods (e.g. the nominal group) are designed to create gender-neutral environment by removing social pressure, and other methods (e.g. the fishbone) can be made more gender-sensitive by changing the template so that the analysis focuses on the causal factors considered by women as more relevant.*

Gender-symmetric creativity may be priceless, but we must first create opportunities for it

While there are many sources of diversity in the world, the customers and users come pre-packaged in bodies of two genders and equipped with minds of two genders. It is therefore of fundamental importance not to neglect this source of difference in perspectives that people naturally express when making decisions, assessing quality of products, evaluating the probabilities of events etc. However, there are important conditions that must be fulfilled for the process to be truly gender-symmetric.

First, the heuristic method itself must guarantee that the traditional social mechanisms which often prevent women from contributing ideas be de-activated. Such mechanisms are, of course, strongly developed in highly masculine societies (see above). A powerful way to de-activate them is simply to create a truly democratic process of contributing and evaluating ideas. A simple trick to accomplish that is, sometimes, to introduce anonymity, i.e. when the identity is hidden of people contributing ideas and expressing views about other submitted ideas.

Second, the criteria used to assess the quality of the proposed solutions or ideas must be designed in such a way that the qualities usually preferred and promoted by one sex (read: men) do not dominate. There are fundamental psychological differences between men and women in what they notice and value, and this fact must be reflected during

the assessment phase of any creative-thinking method.

Of course, it all does not mean that the topics analyzed during the creative-thinking sessions must be gender-neutral. The issues are sometimes extremely gender-specialized: either exclusively masculine (prostate supplements, testosterone therapy etc.) or feminine (tampons, estrogen therapy etc.). Nevertheless, one should still apply to solving problems associated with these issues the most gender-symmetric approaches.

After all, women may have valuable ideas about treating prostate problems of their sexual partners (even though the term "partner" may not necessarily be applicable any more…). Also men may have something useful or creatively humorous to say about tampons (and thus extending their spectrum of users to, for example, population of absent-minded or inebriated power-tool operators or Navy Seals who may need to stop the bleeding from gunshot wounds). So, if the gender-symmetric phase of generating ideas is followed by gender-symmetric, i.e. not biased, way of assessing the quality of ideas, then we can rest assured that the heuristic process uses its full potential.

The nominal group method: privacy and anonymity remove gender bias (based on Jasieński, 2012, 2014)

The main aim of this method is to emphasize that during the creative work the stage of generating uniqueinsights by individualsshould be separated from group feedback and criticism (Greenberg & Baron, 2000). This is a very effective way of reducing any type of bias, whether it is related to gender, race, or sexual orientation of the participants. Stereotypes that are part of our mental "software", are neutralized.

The participants receive information about the topic and then privately (i.e. protected from any form of social pressure) record their ideas of potential solutions. All contributions shouldthen be made available to all participants, with removed authorship information. Then, each idea is discussed by group members. Anonymity of comments (IT tools can effectively accomplish this goal), i.e. not knowing who said what, improves honesty and increases the quality of criticisms. The authors may then clarify their ideas.To find the single best proposal, the next stage must again assure privacy: participants privately rank the ideas, knowing only the merit of each proposal and the criticisms it has received during the group stage. The idea with the highest average ranking is taken as the group's decision.

Change Ego - what question about your product would be asked by….?

"When ego is lost, limit is lost"

Yogi Bhajan

This is an example of a typically heuristic approach that provides us with imprecise or maybe even misleading answers. It does not use any clear and logical criteria. However, it allows us to change the point of view by impersonating someone else. Abandoning

our own perspective and dropping our prejudices and limitations in the way we see the world are the main benefits of using this method. The method is also known as "rolestorming" (VanGundy, 2005) and can be applied during brainstorming sessions.

The list (one of the many that one can create, depending on particular need) shows well known personae who are either imaginary or real-life people or other creatures, alive now or who lived in the past or who never really lived (because they were robots, but we could still benefit from their opinions…). We try to enter into the way of thinking of such characters so that we can see the world through their eyes, and to analyze in a novel way the issue that we have set up. For example, we could create a list of all the reasons why a given celebrity would like or would dislike the analyzed product.

1. 50 Cent, rapper	19. Jeffrey Sachs, economist
2. Agnieszka Holland, film director	20. Lara Croft, adventuress
3. Angela Merkel, politician	21. Lech Wałęsa, politician
4. Angelina Jolie, actress	22. Leonardo da Vinci, painter
5. Beyonce, singer	23. Luciano Pavarotti, tenor
6. Bilbo Baggins, hobbit, "Lord of the Rings"	24. Madonna, pop star
7. Bill Gates, philanthropist	25. Michael Phelps, swimmer
8. Brienne of Tarth, from "The Game of Thrones"	26. Michelle Obama, former 1st Lady
9. Güler Sabancı, businesswoman	27. Mother Teresa of Calcutta, nun
10. Darth Vader, "Star Wars" lord	28. Naim Süleymanoğlu, the best weightlifter ever
11. Jessica Jones, Marvel hero	29. Reinhold Messner, climber
12. Edith Piaf, singer	30. Stephen Hawking, physicist
13. Elena Isinbayeva, pole vault athlete	31. Steve Jobs, co-founder of Apple Computer
14. Elisabeth II, queen	32. Tony Stark, Iron Man
15. Francis, pope	33. Usain Bolt, athlete
16. Harry Potter, magician	34. Venus Williams, tennis player
17. Hillary Clinton, politician	35. Warren Buffett, billionaire
18. J.K. Rowling, author of Harry Potter books	36. Wisława Szymborska, poet, Nobel laureate

Box – Practical advice• Change Ego example

What question about a new wearable device for monitoring personal physical activity would be asked by…?

- Can it be made to look like jewelery? (Elisabeth II)

- Is it water proof? (Michael Phelps)

- Can I make backup of my emails on it? (Hillary Clinton)

- Will it record physical activity when I fly in my super-suit? (Tony Stark)

- Will it work in high-altitude conditions of the Himalayas? (Reinhold Messner)

- Will it fit under my armor? (Brienne of Tarth)

- Is it so fast that it will measure activity that lasts less than 9.6 seconds? (Usain Bolt)

- Will it record physical activity when I just sit and write? (J.K. Rowling)

- Will it allow me to see if my physical activity differs between different days of my menstrual cycle? (Elena Isinbayeva)

- Will it count the steps if the person is wearing an invisibility cloak? (Harry Potter)

- Does it consider the work of a painter as activity - the number of "swipes" by brush on canvas? (Leonardo da Vinci)

- Is it able to compare my and my 6 children's activities? (Angelina Jolie)

- Can it be setup so that every 10 kilometers of the user's running score generates a 50 cents profit on a charitable foundation's account? (Michelle Obama)

- Is the device able to calculate the power of hitting the ball with a tennis racket? (Venus Williams)

It is worth emphasizing that if the managers of the creative process wish to benefit from gender-related or cultural asymmetries, they must set up the system in such a way as to give all sides a chance. For example, the list prepared for a specific purpose should be as diverse and inclusive as possible, beginning with equal representation of both sexes. The goal would be to maximize the breadth of inspiration, but also to prevent exclusion of the participating employees who may not identify as well with the examples of other gender than their own. The male examples, because they are encountered more frequently in the media and are overrepresented among the upper levels of most corporate hierarchies, are very easy to provide. Finding the female examples requires more effort, but is essential.

Moreover, it is also important to pay attention to the professional profiles represented by the selected examples, i.e. if the social image and importance of male and female examples is comparable. In other words: who are the people we have listed? In the list

above, there are six female examples (numbers 4, 5, 12, 13, 24, 34) representing sports and popular entertainment (pop singer, actress), but, for example, no female scientists. Therefore, the social status of the examples used should be equalized, as much as possible, across genders (and races), for the examples to be universally effective as triggers of creative thinking.

"Imaginization": a gender-neutral opportunity to express gender-specific creativity

Instead of looking for academic-sounding definitions and conducting a scientific analysis of the topic that interests us, Gareth Morgan (1997) encourages us to try a method based on associations and metaphors (see also: Cornelissen, 2004, 2005, 2006; Hey et al., 2008; Indurkhya, 2007; Oswick et al., 2002). The exercise involves choosing one image from the presented collection of images.Each of the images is a potential source of unique and insightful thoughts that deeply penetrate the nature of the problem.

The "problem" to be analyzed can be, for example:

- a female manager - if you are a female MBA student and would like to better understand what it means to be a manager in the world regulated by standards historically designed by men;
- a female scientist - if we are employees of a technology transfer center at a university and we want to be able to reach women scientists to encourage them to open up towards entrepreneurship;
- a literary magazine - if we are members of the editorial board and we want to take a fresh look at the mission and strategy of our publication;
- the European Union - if we live in a country before accession to the EU and there is a referendum on this subject; as employees of a government agency, we want to encourage the public to vote "yes";
- Apple - if we are employees of a smaller company and we want to understand how to better compete with the IT giant.

The images are of buildings, objects, tools, animals, clouds, geological formations, people, plants etc. The choice of images is entirely up to the moderator organizing the imaginization activity and the criteria for including images depend on the topic analyzed. The images most likely to stimulate imagination will be different in each of the five examples listed above, although there may be some overlap. In our experience of using this methods during workshops we noticed that some images are more popular, irrespective of the topic. Swiss army knife with multiple tools, an iceberg, a shark turned out to be good stimulators of creativity, whether the topic was "a manager", "a firm", or "a new product".

The participants try to figure out how the features of the chosen object in the figure illustrate the strengths and weaknesses of the phenomenon/subject/object that interests us. For example, choosing the lighthouse as a catchy metaphor of the managerial work is forcing us to reflect on the pros and cons of the "manager as lighthouse".

Box – Practical advice: Imaginization examples

• Manager as a lighthouse

+ illuminates the darkness: thanks to such a manager the team knows where to go and feels safe;
+ announces to the outside world where we are as a company: through his/her contacts sends information to competitors and business partners that we exist and operate.

But:

- such manager's way of working, like the lighthouse revolving light beam, is predictable: workers are ready to be controlled by the manager at certain times and know they are safe outside of them, as mice when the cat is away;
- the light is always the same: the manager's working methods, such as the favorite performance indexes calculated by the manager, are not surprising and no longer challenge the employees;
- just as the lighthouse is attached to the rock beneath it and can not move when the coastline changes, the manager may not be able to keep up with the changing business world. Too much attachment to the same solution eliminates dynamic energy;
- loneliness: the manager's function automatically isolates him/her from the co-workers who, perhaps even recently, were colleagues;
- dependence on others: without the supplies and fuel the lantern will stop working – managers are also dependent on information flowing from others, because they cannot collect it themselves.

• Manager as a mother breastfeeding her child

One of the authors' ideas were as follows:

+ cares for the proper development of the employees: knows their needs and tries to satisfy them as best as he/she can, the employees are contented and engaged -it increases work efficiency,
+ builds good relationships and strengthens them through regular contact: the employees feel safe and trust the manager unconditionally, which leads to good quality of teamwork and financial results
+ good relationships and a lack of conflicts allow to focus on all goals set for the team and accomplish them on time.

But:

- learned helplessness: may be a trend particularly typical of the employees who always rely on their manager's decisions and are not able to make them on their own,
- avoidance of responsibility: team members may be afraid of taking the responsibility because they are not taught independence and autonomy,
- relying only on the manager may diminish the team's flexibility and openness to new opportunities.

The other author had the following reactions to this image: • warm (+) and fuzzy (-) • passive life of the parasitic child (-) •nurturing (+, but – if too much) • maternal brain drowning in maternal hormones (-) • overprotective (-) • supportive (+) •safety (+, but – if too much).They were translated into such insights about the managerial roles:

+ important to be warm and capable of showing feelings, to be supportive and create a sense of safety for the subordinates.

But:

- too much managerial protection and nurturing produces lazy and passive workers;
- too much emotionality encourages employees to react hysterically to challenges and removes the manager's ability to analyze events and make high quality decisions.

• Manager as Shrek

One of the authors' (MJ) ideas were as follows: - strong as an ox – good with his hands - sensitive - farts in the shower - not afraid to fall in love – loyal - gets angry, but is not moody - devoted husband and father - impulsive. However, it is immediately clear that the author did not use the imaginization method correctly, because these associations are about Shrek himself, and not "a manager as Shrek". We show this mistake, because it is a very frequent error made by participants of imaginization sessions: do not forget what or who the focus of analysis is; it is not what is shown on the picture!

So, the corrected version of ideas should be, in the same order: • powerful (+) • has hands-on experience (+, competent and knows the stuff he/she is managing) • sensitive (+) • spontaneous (+) and not afraid to be relaxed and not stiff (+) • not afraid to show the soft side of his/her soul (+, emotional, when it is appropriate) • loyal (+) • easily gets angry (-) • but is not moody (+) • devoted and protective partner and mentor.

The other author suggested the following associations:

+ is friendly, helpful, selfless and does not want power: such a manager builds good relationships among the team members and contributes to building trust and reciprocity,
+ is noble, brave and ready to sacrifice: through such attitude he/she creates good team spirit and strengthens engagement and the cooperation among team members.

But:

- seemingly he/she seems repulsive and unpleasant, which creates barriers and discourages subordinates, resulting in poor communication and weak cooperation,
- through his external appearance and unusual habits he can be treated as a weirdo and eccentric and may not be accepted by everyone in the team, it may also not arouse the authority among the employees,
- prefers to be isolated: such the attitude may send the message to the employees that he/she does not care about them, does not count with their opinions and takes all decisions in authoritarian way.

It is not just a search for strengths or positive aspects because, as in life, you cannot "eat a cookie and have a cookie": very often the emphasis on the development of one

feature means neglecting some other important characteristic. So, paying attention to the minuses, not only pluses, is a very important benefit that can flow from using this method.

In contrast to the previous method (***Change Ego***), images are very likely to be gender-neutral, so there is no danger in blocking the creativity of the participants of either gender. It is up to them to use their feminine or masculine points of view. It does not mean, however, that the images must always be generic or universally applicable. If the topic for analysis is very highly gender-specific, such as e.g. muscle growth supplements for body-builders or feminine hygiene products, then the choice of images may reflect the specialized nature of the topic.

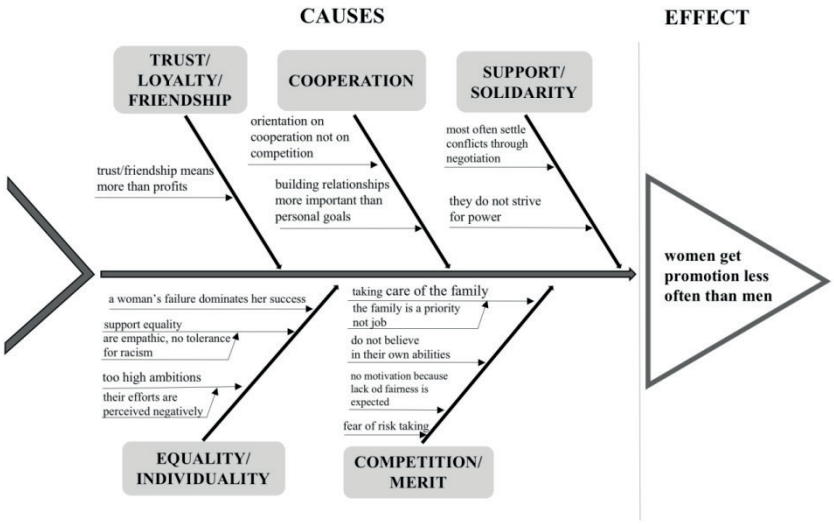
Making the "fishbone diagram" more feminine: even orderly thinking may benefit from gender-specific creativity

This method of orderly thinking was popularizedin the 1960s by Kaoru Ishikawa, a Japanese researcher and pioneer of quality management in the Kawasaki shipyards.The goal is to explore all possible or relevant causes of a known management problem. The diagram that is the result of analysis has the shape of a fish skeleton (thus the names of the method: fishbone, herringbone, and "fishikawa"), with its head replaced by the box containing the description of the problem.

We start with preparing a list of all possible causes of a problem, and we follow with grouping the causes according to what they concern. Depending on the particular context, the "fishbone diagram" approach was used with one of the following sets of causal factors: the 6 Ms (Machine, Method, Materials, Measurement, Man and Mother Nature; recommended for the manufacturing industry), the 8 Ps (Price, Promotion, People, Processes, Place/Plant, Policies, Procedures & Product or Service; recommended for product marketing), or the 4 Ss (Surroundings, Suppliers, Systems, Skills; recommended for service industry).We try to arrange the listed major and minor causes graphically, in such a way that the most important causes form the main bones, and the minor causes are thinner bones, branching from the thicker ones(but must be logically connected with them).

We argue that expanding our spectrum of possible causal factors may greatly enhance our problem-solving potemtial and, therefore, we propose yet another set of axes. They all focus on fundamental aspects of our social lives and they go deeper into directing our attention to such "soft" (but crucial) issues than some overall rubric of "Man" or, a more gender-balanced category of "People". They reflect well the "feminine" social skills, as documented by numerous researchers, including Geert Hofstede (and described in another chapter of this book). We suggest that such main causal factors could be Equality, Cooperation, Privacy/Individuality, Trust/Friendship/Loyalty, Support/Solidarity, and Competition/Merit. Each should be explored with the use of more specific descriptors, as shown in the example below.

Box – Practical advice: The fishbone example: Why do women get promotion less often than men?



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TEAM BUILDING: ITS DYNAMICS AND THE IMPORTANCE OF MANAGING DIVERSITY

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***Abstract**: We present various concepts useful for entrepreneurs who face the task of building new teams or new firms. We focus on Belbin's team roles theory and Tuckman's model of team development and discuss practical recommendations that may be derived from them. We ask how to select collaborators for the new team, what criteria to use and which team roles are likely to be most needed during the successive stages of the team's development.*

Managers of local technological parks or experienced venture capital consultants have a role to play in educating inexperienced entrepreneurs about some fundamental issues that are bound to arise when managing their firms. For example, the entrepreneurs should learn about the expected sequence of events in team development and about the ways of designing composition of their teams that are likely to improve their performance.

Team dynamics in time, or what every entrepreneur should be ready for

The Tuckman model of team development (Tuckman & Jensen, 1977; Rickards & Moger, 2000) is an important concept to keep in mind when an entrepreneur watches the turbulent (sometimes) dynamics of interactions within the newly established teams in her or his firm. The model allows one to understand that some behavioral problems and conflicts may be transitory, since they are expected at a given stage of team maturation. It would be indeed strange if they did not happen. The sequence of stages "Forming-Storming-Norming-Performing-Adjourning" is also known as "Orientation-Conflict-Cohesion-Effective structure" (Tosi & al., 2000, p. 250).

The ***Forming*** stage is characterized by confusion, uncertainty and the pervasive feeling that the rules must be described and tested, and the goals must be defined. That is why people may tolerate a more autocratic style of leadership adopted by individuals aspiring to be leaders. Personal interactions are unstable, but are generally civil, maybe with false politeness, since people do not know each other well – there is a need to get acquainted. One should not expect the group to be productive yet. The more challenging phase follows, however.

The ***Storming*** stage is characterized by disagreements over who the leader should or deserves to be, and over priorities and assignments. Subgroups or cliques form spontaneously and atmosphere is filled with hostility and tension. People may feel confused or discouraged, but the team shows improved productivity compared to the previous stage. Autocrats will no longer be accepted; there is more chance that a participatory style of leadership will be effective. Most importantly, the fact that the Storming stage arrives does not mean that the team should be disbanded and the firm should start recruiting new personnel – it simply means that the managers should be ready for it and wait for the natural team dynamics to run its course.

When one detects that the leaders have been accepted and the trust is being built, leading to cooperation among team members, it means that the team has reached the ***Norming*** stage. There is a sense of agreed upon, common goals, and more formal processes are being formed. People feel confident and satisfied with their participation. They show now shared standards of behavior (norms) and expect that the newcomers will fit this newly established organizational culture. Productivity of the team goes up.

Box – Practical advice

The stage boundaries are not rigid and clear, but the stages may be characterized in an informal way by questions or statements one may overhear when the team members are working together:

Forming – "Why am I here? What are we expected to do? Am I good enough to do the job? Who can I make friends with?"

Storming – "Hey guys! You are doing it wrong. There is no way it will work. Why can't you do it my way? We think it is all their fault. Who are you to tell me what to do? That's it, leave me alone – I've had enough! Look at me – can you beat that? Get lost, or I'll smack you!"

Norming – "Don't say 'you guys', but say 'us'! I like what you suggested. Why don't we try yet another approach – I'll gladly explain it to all of us. What do you think about my idea? We should all try harder to avoid problems like that."

Performing – "This is great! Nice job, I am proud of you! Wait, I'll tell you honestly what I think. I see this differently – let us talk about it."

Adjourning – "What is going to happen to me? The company will let us just break apart? We were such a great team! I do not care about this project any more!"

This leads now to the ***Performing*** stage, which means that the team is ready to work efficiently. Productivity is therefore at the maximum and standards are set high. The employees are enthusiastic about working together and are ready to help each other; there is a sense of intimacy or openness among them. This leads to greater flexibility as to how the norms and processes are followed, since people trust others that their diverging

from the norms does not mean that the teamwork will suffer. Exploring new processes in work would rather be considered as part of kaizen, i.e. constant improvement and innovativeness, and not violation of rules or expectations. Leadership role may be adopted by each member of the team, according to need.

During the ***Adjourning*** stage the team is disbanded and the work is nearing the end, with gradually decreasing enthusiasm and intensity. There is a growing sense of disengagement from the project and it is hard to expect a high level of loyalty and commitment to the team anymore. People also feel anxiety and uncertainty about what the future brings, and they evaluate their professional situation. Since project teams are, by definition, not permanent, team managers should be aware of the importance of this last stage, especially that the new projects are arriving. Leaving employees without a good feeling about their participation in team work would make the recruitment to future projects more difficult.

The TCI approach which relies on a survey administered to all team members (Kivimäki & Elovainio, 1999) allows the managers to track changes in their teams' climate. It may, therefore, be useful in building an understanding of team dynamics.

Team-building: selecting members for the new team

We present some methods and concepts that may be needed by entrepreneurs who build new teams and we discuss practical recommendations that may be derived from them. (Currently, the Belbin team roles methodology is implemented by the officially accredited agents in many countries, has been translated into at least 16 languages, and can be used commercially as a diagnostic tool for individuals and teams and for management training (see the website http://www.belbin.com). A shorter and unofficial version of the Belbin's test is given e.g. in Huczynski & Buchanan (2013). TMS Development International (TMSDI) developed profiling tools expanding the Margerison-McCann team roles model (http://www.tmsdi.com/)).

First, there are ways to assess a diversity of ways people may behave in group situations, during teamwork. There are tools for conducting self-assessment and for assessing also other members of the team with respect to the roles they tend to play when they work as part of a team.

Team roles

Table 1 - The nine Belbin team roles - brief descriptions of strong and weak points of each role. Based on Huczynski & Buchanan (2013) and www.belbin.com.

Team role	Strong points	Weak points
The "relationship" subset		
Co-Ordinator	trusting, clarifies objectives, delegates duties, promotes decision making	may be seen as manipulative; delegates also the tasks that should do himself/herself
Teamworker	diplomatic, cooperates and calms the waters, listens	can be easily influenced; hesitant in difficult situations
Resource Investigator	has good communicative skills, builds networks, explores possibilities	too optimistic; prefers short-term involvement
Implementer	efficient and disciplined, turns ideas into actions	not flexible enough; reacts slowly to new opportunities
The "task" subset		
Plant	creative, resourceful, unorthodox	ignores details; may not know how to communicate effectively
Monitor Evaluator	takes all options into account, evaluates accurately	tends to be too critical; often unable to inspire others
Completer Finisher	scrupulous, hard-working, finds errors and omissions	too much focused on details; unwilling to delegate
Shaper	active, stimulating, eager to overcome obstacles	has a tendency to provoke; may offend others
Specialist	concentrates on only one aim or purpose, has rare knowledge and skills	overlooks the big picture; tends to focus on technicalities

One of the most popular versions of the team roles idea was proposed by R. Meredith Belbin in the 1980s (Belbin, 2010). He recognized nine different types of behavior that appear in the workplace (Table 1), although there were criticisms that all team roles cannot be clearly differentiated in some studies (Aritzeta et al., 2007). Nevertheless, we describe Belbin's approach since it may be of great help to managers, and especially to young entrepreneurs who lack managerial experience in team building.

Each team role has obvious strong points, but with them come inevitable weak points. Both sides of each team role should be taken into account when optimizing team composition for most effective, output-oriented, but harmonious functioning (see below). Furthermore, research has shown that each team member will exhibit a spectrum of team roles – some of them will be dominant (top three in the number of points collected in assessment), while other roles will not fit that person's psychological profile. There are no bad or good team roles.

Some examples of statements that may capture the characteristics of each role are given in the box below, based on Huczynski & Buchanan (2013) and www.belbin.com.

Box – Practical advice

Co-ordinator

- My strength lies in the fact that I can get from people what they have the best in themselves, so that they are able to contribute to the achievement of group goals.
- I am able to build an agreement among employees about the necessary steps that should be taken.

Teamworker

- I like to think that I foster and shape good interpersonal relationships at work.
- I can work easily with very different people.

Resource investigator

- I am keen to initiate a discussion to stimulate new ideas and start working on a project.
- I am ready to make and use networks outside of the team.

Implementer

- I am interested in finding practical solutions to specific problems.
- It is difficult for me to start working if the goals of the activity are not clear to me.

Plant

- Sometimes I am not good enough in explaining or clarifying to others some complicated issues that I notice.
- I am often able to avoid what is obvious and I can surprise others with something unexpected.

Monitor evaluator

- I have the conviction that my clarity of thinking can help others make the right decisions.
- I like analyzing situations and considering the options that are available.

Completer finisher

- My ability to bring things to the end is a result of my personal effectiveness.
- My natural temperament helps ensure that our work schedule meets the deadline.

Shaper

- I have the tendency to reveal dissatisfaction to those who slow down work progress.
- I am able to accept that I am unpopular for a while if it leads to valuable results.

Specialist

- I often have the feeling that I waste my time in the team and it would be better for me to work alone.
- My technical knowledge and experience are my main advantage.

Table 1 also shows the subdivision of team roles into three cohesive pairs (Implementer with Resource Investigator; Co-ordinator with Team Worker; Completer-Finisher with Shaper) and individual roles (Plant and Monitor Evaluator), carried out by Fisher et al. (2001). Team roles may also be divided into two groups: the "relationship" subset (Co-coordinator, Team Worker, Resource Investigator and Implementer), and the "task" subset (comprising Plant, Monitor Evaluator, Shaper and Completer-Finisher; Fisher et al., 1998; Aritzeta et al., 2007). The Specialist was not analyzed, but most likely belongs to the latter subset. Even if the full resolution of team role affiliation cannot be achieved, we may benefit from categorizing the team members to three double-role and three single-role categories.

C. Margerison and D. McCann (1990) also described nine roles and those, to some extent, overlap with Belbin's categories. Team members may be characterized as performing the functions of explorers, advisers, controllers, organizers, or linkers (Table 2).

Table 2 - The nine Margerison and McCann (1990) team roles.

Assessor-Developer – analyzes new opportunities and implements them in practice.
Concluder-Producer – works in an orderly fashion and generates outputs.
Controller-Inspector – focuses on details and controls the quality of work.
Creator-Innovator – generates new ideas and different responses to challenges
Explorer-Promoter – explores new opportunities.
Linker – coordinates and integrates the work of other team members.
Reporter-Adviser – gathers and provides information.
Thruster-Organizer – pushes the teamwork forward and obtains results.
Upholder-Maintainer – upholds standards to keep team excellence at high level.

Optimizing team composition

The team role assessments and reports can be applied by entrepreneurs and managers to think about team balance before the project starts, to highlight, and so manage interpersonal differences within the existing team, to develop the team's strengths, and preemptively manage its expected weaknesses. Since the results identify people's behavioral strengths and weaknesses in the workplace, this knowledge can bring more harmony to the team. It definitely helps team members to understand the roles they prefer to play and that there are different approaches that are important in different circumstances and that no one approach is the best all of the time.

The successful teams comprise a diverse mix of behaviors, i.e. they have representatives of all team roles (Belbin, 2010). But what happens when this ideal is not reached? According to Belbin, there may be a team role "void" when no team member has a given role at

1st, 2nd or 3rd position of his or her role profile. It means that a gap with that particular role will be felt by the team and additional support for this role's functions must be provided by other people, even against their own natural instincts. For example, a void with respect to the Co-ordinator role may lead to a lack of decisiveness or an inability to allocate responsibilities to team members.

In contrast, if at least half of all team members have a given role at 1st, 2nd or 3rd position of their role profile, there is a "surplus" of that role in the team. It means that one can expect too much influence of a particular behavior in the workplace; for example, too many Plants in the team may indicate too much creative vibration, but not enough ability or interest to turn ideas into products (see Table 3 for all examples).

Table 3 - The nine Belbin team roles – consequences of voids or surpluses, i.e. when a given role is under-represented (void) or over-represented (surplus) in the team (Source: own elaboration).

team role	consequences of a void	consequences of a surplus
Co-ordinator	A lack of decisiveness or an inability to allocate responsibilities to team members.	Too much delegating and potentially not enough teammates to perform tasks. Too much space for manipulation.
Teamworker	A worsening of the team's social climate, with interactions becoming less cooperative, simply because other Team Role representatives do not have it in their mental repertoire to pay attention to such "soft" issues.	Too much hesitation towards taking decisive actions in difficult moments.
Resource investigator	Smaller chances for effective communication and exploring new opportunities, especially related to networking and contacts outside the team.	A team may have a tendency to lose momentum (enthusiasm) towards the end of the project and to neglect details.
Implementer	A team may have problem with discipline and converting ideas into particular and goal-oriented activities.	"Paralysis of analysis" may occur - too much analysis and an inability in the team to draw conclusions and move forward.

Plant	Weak potential for generating innovative ideas or solutions.	Too much creative enthusiasm, but not enough ability or interest to turn ideas into products.
Monitor evaluator	It could cause lack of sober evaluation of all available options with the necessary clarity and impartiality.	Too much emphasis on critique and a weak potential to inspire team members.
Completer finisher	Lower accuracy of completing the tasks that may now be checked with insufficient attention.	Teammates may be paralyzed by too much concern about insignificant details and too little trust to delegate specific tasks.
Shaper	Potential problems with task-focusing, with stimulating actions and overcoming difficulties.	Potential risk of using aggression when trying to get things done.
Specialist	A lack of expert skills or knowledge in a specific field.	Contributions from team members are too specialized: with too much emphasis on only one area; team is uninterested in anything that lies outside the specialized areas; "big picture" is lacking.

A manager may then use the knowledge of similarities and differences between team roles to balance the team composition (see Table 4). For example, with the surplus of Plants in the team, the activities of Implementers should be increased or team members should receive training aimed at improving their Implementer's skills. A surplus of Shapers should be counterbalanced by more active Teamworkers or new Teamworkers added to the team. Since the latter solution is often not feasible, the manager should always be ready to rely on various training approaches to achieve the balanced team role composition.

Team roles and gender

There is very little information on gender differences with respect to team role affiliation, but there is no doubt that adding the gender dimension would be of great significance. Women scored significantly higher on the Monitor evaluator and Plant roles (Balderson & Broderick, 1996), but not according to Anderson and Sleap (2004) who found that

men had higher scores on the Shaper, Plant and Monitor Evaluator roles. Women were found to be more frequent Teamworkers, but more rarely than men were Implementers and Co-ordinators (Sommerville & Dalziel, 1998).

Table 4 – Opposing pairs among Belbin team roles (based on Aritzeta et al., 2007).

Plant creative and unorthodox	**Implementer** disciplined and controlled
Teamworker submissive and non-aggressive	**Shaper** dominant and competitive
Specialist self-absorbed and single-minded	**Co-ordinator** responsible leader
Monitor evaluator dependable and not driven	**Resource investigator** dominant and persuasive

A connection between team roles and team development

The stages through which any maturing team is expected to go, form different challenges for the team members. Therefore, one may hypothesize that both distinct styles of leadership and different team roles are likely to be needed and to dominate during the stages of Forming, Storming, Norming, Performing and Adjourning (Manges et al., 2017). Shapers and Co-ordinators will be most needed during the early stages (Aritzeta et al., 2007), like Forming, when it is crucial to formulate goals, develop plans of action, and establish some basic rules of behavior. Teamworkers are needed during the Storming stage, to help with lowering tension and developing mutual trust. Finally, Specialists, Completer-Finishers and Implementers are expected to show their contributions during the later stages, especially the Performing stage. However, at that time the team needs also leadership focused on empowering team members and obtaining feedback.

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BUSINESS PLAN

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***Abstract**: This chapter describes the main steps for designing a value proposition and then the business plan that will drive the growth of the start-up.*

Value proposition

The value proposition is composed of three main parts: pain relievers, gain creators, and products and services (see fig.1)

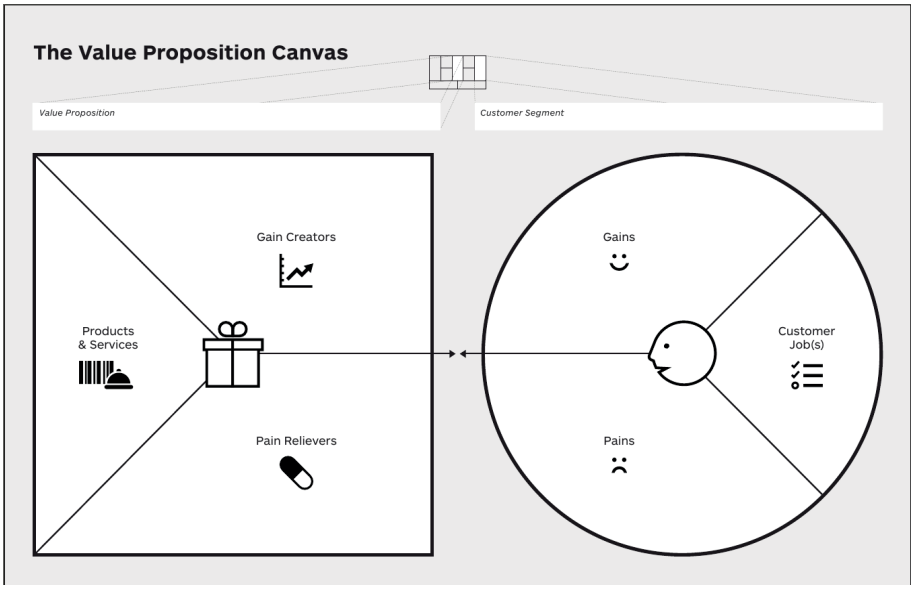

Fig.1 - Value Proposition (Osterwalder et al., 2010)

Before starting the design of the ***value proposition***, the startup team should investigate the ***context*** of their future company:

- what are the ***industry forces?*** (who are the main competitors and incumbents? Who are the new entrants (insurgents)? How and why the proposed products and services are going to substitute the existing ones? How is the stakeholders' network of interested market structured? Who are the main actors of the supply-chain?)

- what are the ***market forces?*** (main market segments and issues, needs and demands, switching costs, etc.)
- what are the ***key trends?*** (technology trends, regulatory trends, societal and cultural trends, socio-economic trends, etc.)
- what are the ***macro-economic forces?*** (what are the main global market conditions? How is capital market doing? What is the situation of commodities, economic infrastructures, etc.?).

Then the start-up team should have a clear market segment as a target to address:

- the customers' ***pains*** (main problems, risks, etc.) and what kind of ***pain relievers*** the start-up will propose;
- the customers' ***gains*** (opportunities to improve their results) and what kind of ***gain creators*** the start-up will be able to provide;
- the customers' ***jobs*** (their main source of revenue, their core activities) and what kind of ***products and services*** the start-up will propose to facilitate the jobs of the customers.

When it is clear what are the ***pain relievers***, ***gain creators***, and ***products and services***, then the start-up can elaborate its ***value proposition***.

Once the team has a clear view of the contexts where they are going to operate, an excellent value proposition / an innovative idea is in their hands (maybe already tested with a prototype).

Business Plan

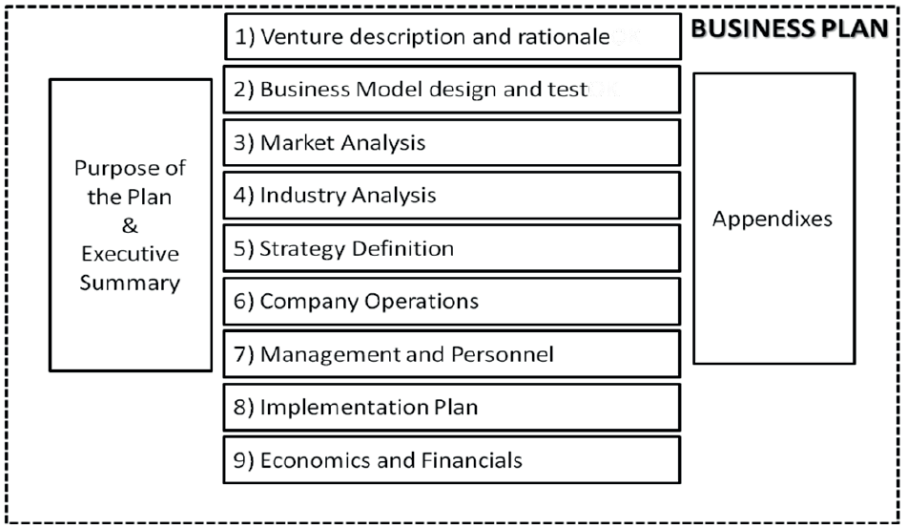

Fig.2 - Business Plan Structure

The aim of the business plan is to attract investors. The Business Plan is a very important document that, alongside the value proposition, the innovative idea, and the team's strength and commitment, will be the platform for building the new start-up. It contains a strategic and quantitative plan for effective start-up, and growth of entrepreneurial ideas (including sales, marketing, product or service definition, operations, finance, accounting and management functions). In this phase the idea is clear and stronger as it has been "filtered" by a feasibility study and might be demonstrated by a prototype. Also, it is assumed that at this stage the "value proposition" is clear to proponents of the start-up. The best practice for "educating" young generations on "business planning", beyond the classroom experience, is based on real interactions with real managers. This gives them the opportunity to engage in real life strategic decisions.

Developing a business plan for a start-up requires competencies and skills like:

a. understanding analytical processes required to develop such a plan;

b. being able to apply concepts from different disciplines;

c. translating market evidence into operational plans for a new business venture;

d. improving written and oral presentation skills.

The core "chapters" of the business plan (see fig.2):

Introduction: Purpose of the plan and Executive Summary

This chapter briefly introduces the reader into the value proposition, the products and services that the start-up aims to develop and the market's needs that will be satisfied. In half page the reader should have a complete idea of the start-up plans, including expected financial results.

1. Venture Description and Rationale

This chapter describes in details the customer value proposition: how the start-up will address the pains, gains, and jobs of customers with, respectively, pain relievers, gain creators, and products and services supporting the customers in making their jobs.

2. Business Model design and test

This chapter describes what is the business model adopted by the start-up, what kind of experiments and checks have been executed in order to test it, etc. Is the start-up going to develop and sell products? Or services? Or both? Is it adopting a "Pay-per-use" models?

3. Market Analysis

What are the main targets of the start-ups, what are the main customer segments, where is there a space for its products and services?

4. Industry Analysis

Who are the main competitors in the market? Are they newcomers or well established companies? Is the start-up going to compete with them? Or to collaborate with them? (joint proposals, service agreements, etc.)

5. Strategy definition

What are the products and services that will be developed / produced? What is the time-to-market for prototypes?

6. Company operations

What are the main operational processes of the start-up? What are the methods, technologies, procedures that will need to be executed by the start-up?

7. Management and personnel

Who are the key people in the team? How is the team splitting management responsibilities, technical responsibilities, financial and commercial responsibilities? Is there an organizational chart?

8. Implementation plan

What are the main milestones? Is the implementation plan defined? Is there a marketing

and selling plan (including pricing, promotion, placing, etc.)? Is there a risk management plan? What are the main forecasted risks and corresponding planned remedies?

9. Economics and Financial

This is the key chapter for investors: what are the main risks? What are the main rewards? Are there some estimations of the probability of success? What about profitability of the start-up? When? Is there a cash flow diagram available?

Appendices

Just in case the reader would like to go into details, this is the place where she can find bios of the key members of the team, the details about the IP management strategy (patents, etc.), detailed plans with intermediate deliverables, tables with financial projections, etc.

In the business plan the start-up proponents should also give emphasis to gender equity, by providing important dimension to women's contribution to innovative start-ups and potential businesses growth.

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Norberto Patrignani

(Please see profile on page 12)

Paola Mogliotti

(Please see profile on page 13)

HOW TO PROTECT THE TECHNICAL SOLUTION BEHIND YOUR START-UP CONCEPT

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Abstract: *This chapter contains an overview of legal tools and strategies available to protect innovative results in order to exploit them later through the establishment of a start-up company. Information about regional and international organizations dedicated to intellectual property protection is also provided.*

Introduction

One of the various definitions of "innovation" is "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations" (OECD/Eurostat, 2005). In general terms, innovation is developing a new idea and putting it into practice. As this chapter will focus on strategies and legal tools useful for high-tech start-ups to protect and successfully exploit the ideas behind their solutions, the term "innovation" is here used to refer to the process of bringing new products (goods or services) to the market, from the idea/concept stage to the establishment of the company based on innovative research and development (R&D) results (Kalanje, ***available online***) (often referred to as "technological innovations" as well).

Technological innovation comprises new products and processes and can be classified in different ways as, for example, disruptive or incremental. Other types of innovation exist, different from the technological ones, which do not come from scientific research and development activities, but are often very important in order to market new products deriving from R&D activities. Some examples of these non-technological innovations are: marketing innovation, institutional innovation and organizational innovation.

Innovation is a component of the areas covered by the five key targets set in "Europe 2020" (Europe 2020 Flagship Initiative Innovation Union, European Commission, COM(2010) 546 final) , the ten-year growth strategy adopted by the European Union with the objective of creating a more competitive economy with higher employment.

In the current knowledge-driven and competitive business environment, it is very important to foster the "virtuous circle" leading from business and academic R&D investment to innovation and creation of value. In addition, the innovation capacity of industry depends not only on large enterprises, but especially on ambitious entrepreneurs and small enterprises aiming for radical new products and rapid growth.

Moreover, in this context, the missions traditionally performed by modern universities, education and research, have been complemented by the so called "third mission", according to which university must engage with societal needs and market demands by linking the university's activity with its own socio-economic environment. Therefore, besides the activities of teaching and performing research, academic institutions are now required to act not exclusively as new knowledge and technology creation hubs, but they should also pursue the transfer of such outputs to society. This additional role of universities implies a profound shift in terms of their strategic goals and linked operations, meaning that knowledge production should not only be science-based, but also more focused on problem-oriented research in order to generate outputs that can later be commercialized also through the establishment of a new company, an academic spin-off.

In the following paragraphs, the focus is on technological innovation and on the proper management of Intellectual Property (IP) to facilitate the process of taking innovative technologies to the marketplace and enhancing competitiveness of the technology-based enterprises. An overview of the importance of Intellectual Property (IP) for innovation management and of the legal tools available to protect innovative ideas and foster innovation (starting from the idea/concept formulation to the successful launch of a new business venture offering products that meet customer's needs) is provided.

Intellectual property and technology-based start-up

What is Intellectual Property? The term IP refers to "creation of the mind: invention; literary and artistic works; and symbols, names and images used in commerce" (WIPO, 2015). Intellectual Property can be divided in three subcategories(See, official website of European Union and The European IPR Helpdesk, Your Guide to IP in Europe, 2017):

- "Industrial Property" that includes patents for inventions, utility models, trademarks, industrial design, new varieties of plants and geographical indications;
- "Copyright" that covers literary works (e.g. novels, poems, plays), films, music, artistic works (e.g. drawings, paintings, photograph and sculptures), architectural design, software database, multimedia;
- "Commercial strategies" that include trade secret and know-how.

Intellectual property can be protected by means of Intellectual Property Rights laid down by a number of national and international authorities, as the Word Intellectual Property Organization (WIPO).

An IP right (IPR) is a legal right, based on the national applicable law related to that

particular type of intellectual property. This legal right comes into existence when the conditions of the relevant IP law are satisfied and, if necessary, it is granted or registered following the provided procedure.

IPRs allow inventors, creators, or owners, of patents, copyrighted works or trademark to benefit of their own effort or investment in the creative work, by granting them the ***right to exclude*** all other from commercially exploiting their creations, generally for a limited period of time. This "exclusion capacity" gives the owner of the IPRs ***de facto*** a temporary monopoly on the commercial use of the protected technological innovation, fostering his/her/its capacity to sell new products and services.

The IP system plays an important role in helping a business to gain and retain its innovation-based advantage. Technology-based start-ups, in particular, are established with the objective of commercializing a new technology or for providing an innovative service. This type of enterprises normally strongly depends on their innovative capacity and human capital to succeed in the market, as they have limited financial resources and assets. Therefore, the innovative concept is the most important asset of a company during the start-up phase, and it can be important for obtaining funds from investors, particularly venture capitals and business angels, to take the product/service to the market. For these reasons, it is very important for technology-based start-up to find the best strategy to protect their innovative ideas in order to obtain a competitive advantage over competitors and to conquer market shares.

In this regard, intellectual property rights are useful tools to guarantee to the inventors/authors the exclusivity over the use and the exploitation of their innovations, thus creating an incentive to disclose new ideas and inventions to the public and to invest and re-invest in research and development activities.

The ownership of IP rights also enables enterprises to enter into licensing agreements with other companies, in order to maximize the chances to take a new product to the market.

In addition, start-ups and companies interested in entering new markets must take into consideration the intellectual property rights of other firms, entities or subjects, in order to be sure that they are not infringing the IP rights of third parties. In order to do so, and also to obtain relevant technological data, patent information are easily accessible through patent databases (e.g. Espacenet – patent search, developed by the European Patent Office; Google patents) that are important tools to take into consideration.

IPR basics for start-up

As highlighted in the previous paragraph, it is very important for technology-based start-up to have a consistent strategy to protect their ideas and intangible business assets in order to survive in the marketplace and get a competitive advantage over competitors.

The form of legal protection provided by intellectual property rights depends on the type

of IP. When considering IP strategy protection, it must be clear that IP assets are different and can be protected by several types of IPR, therefore the most appropriate protection strategy must be chosen according to the marketing strategy. For example, an invention can be protected through patent and utility model, or by keeping it secret as a trade secret. As a consequence, it is important for entrepreneurs to consult an IP professional on the most adequate registration strategy according to the product, business plan and budget of the start-up. Most Universities and Public Research Organizations have organized themselves in order to support their researchers and students in this phase, providing the right level of strategic, legal and administrative assistance through the so called Technology Transfer Offices (TTOs), also referred to as Knowledge Transfer Offices, Licensing Office, etc.

For technology-based start-ups, patents are the most frequent protection instruments. In general, the role of the patent system can be summarized in the following main points: i) encouraging technological innovation; ii) promoting competition and investment; iii) fostering the dissemination of innovation and promoting technology transfer.

A patent is an exclusive right granted for inventions (product or process) that provides a new way of doing something, or that offers a new technical solution to a problem. The patent holder enjoys the exclusive right to prevent third parties form commercially exploiting its invention, for a limited period of time, generally 20 years. In exchange, the patent holder has to disclose the invention to the public in the patent application.

To be patented an invention must, in general, fulfill the following substantive legal requirements:

- it must be "new" (***novelty***) in comparison to the existing knowledge in the related technical field and it must not be part of the ***state of the art***;
- it must show an "***inventive step***" meaning that it cannot be deduced by a person with average knowledge of the technical field;
- it must be capable of ***industrial application.***

In many countries, scientific theories, mathematical methods, plant or animal varieties, discoveries of natural substances, commercial methods or medical treatment (as opposed to medical products) are not patentable.

In Europe, a computer program (software) claimed "as such" is not a patentable invention but it is protected by copyright. Under specific conditions, a patent can be granted for a "computer-implemented invention", i.e. an invention that involves the use of a computer, computer network or other programmable apparatus, where one or more features are realized completely or partially by means of a computer program and where a technical problem is solved in a new and non-obvious way.

Patents need to be registered. The registration can be performed at three different levels: national, regional (more countries in a limited geographical area) and interregional

(with the Patent Cooperation Treaty - PCT system). The best choice depends mainly on the territories where a firm intend to exploit the patent, but also time and costs considerations come into play in this decision.

In case of ***national procedure,*** the patent is filed at the national Patent Office and the protection is obtained only in the territory where the patent is registered.

In case of ***European regional procedure*** (which is one of the regional options) the patent can be obtained for all the European Patent Convention contracting states by filing a single application and by corresponding a single set of fees with the European Patent Office (EPO) in one of the three official languages (English, French, German). Although the application phase is international, the national laws govern the registration of the patent in each state. In fact, a granted European patent is a "bundle" of national patent that must be validated at the national patent offices in the countries of interest.

Finally, the international procedure, PCT system, administered by the World Intellectual Property Organization (WIPO), allows applicants to obtain patent protection in more than 150 countries (the Patent Cooperation Treaty contracting states) by filing a single patent application and paying a single set of fees. Also this application has an international character, but national law regulates the registration of the patent in the selected states. As a distinctive difference from the European Patent (and other regional patent systems) at the end of the PCT application, the applicant obtains a "bundle" of national patent application whose granting depends from the relevant national or regional patent office. No issuance of patents can happen at the PCT level, at the end of which the patent application would expire if not duly filed in at least one national office.

Other relevant Intellectual property rights of which entrepreneurs must be aware are the following: trademark, utility models, industrial design, trade secret, copyright, protection for database, domain names and geographical indications. The main European and international organizations dedicated to Intellectual property protection, such as the ***Word Intellectual Property Organization*** (WIPO), the ***European Patent Office*** (EPO) and the ***European IPR Helpdesk*** develop and make available for free on their website informative material regarding intellectual property protection and commercialization(*). Useful information regarding each country's intellectual property legislation can also be found on national patent office websites. In addition, free and complete patent databases are available on the web, as for example the patent database provided by the European Patent Office: "***Espacenet***"(EPO patent database).

Conclusions

As IP management requires a mix of competences as, for example, legal, technical and business knowledge. Different kind of services have been designed at the international and local level in order to help innovators and new entrepreneurs to successfully manage intellectual property issues.

Numbers of useful information and informative or teaching material are provided on the website of the international organizations dealing with Intellectual Property and national IP offices.

In addition, keys points of reference for innovators at the local level are Technology Transfer Offices, for university's staff and students, start-up incubators and non-profit organization responsible for the growth and development of SMEs, for entrepreneurs. This organizations, normally, offer consultancy services regarding IP law and management.

Therefore, in order to turn an innovative idea or research result (inventions) into a new product or service and to establish a start-up company, intellectual property rights must be considered and used strategically to maximize the chances of successfully reaching the marketplace and entering into business partnerships.

(*) Useful resources:

- National Patent Offices:
- Italy: http://www.uibm.gov.it
- Poland: https://www.uprp.pl/strona-glowna/Menu01,9,0,index,pl/
- Turkey: http://www.turkpatent.gov.tr/TURKPATENT/?lang=en
- European Patent Office (EPO): https://www.epo.org
- Word Intellectual Property Organization (WIPO): http://www.wipo.int
- European IPR Helpdesk: https://www.iprhelpdesk.eu/
- European Union Intellectual Property Office (EUIPO): https://euipo.europa.eu
- EPO IP Teaching Kit :http://www.epo.org/learning-events/materials/kit.html
- Centre for International Governance Innovation, MOOC on IP strategy:

https://mooc.cigionline.org/course/view.php?id=6.

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Shiva Loccisano received his M.Sc. in IndustrialBiotechnology, followed by a PhD in Business and Management awarded by the Università degli Studi di Torino. Since 2007 he has worked at the Politecnico di Torino dealing with innovation, technology transfer and high tech start-upcreation. In the year 2012 he took the responsibilities in the contracts office and then in the technology transfer and industrial liaison department. Since 2016 has served board member at Netval.

DANGER FOR ENTREPRENEURS IN VIRTUAL SPACE

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Abstract: *Entrepreneurs use virtual space at every stage of starting and running their business – registering a company, sharing offers, finding clients and many more. The chapter presents most common and dangerous threats which may be encountered by the entrepreneurs while using the Web, e.g.: problems related to online banking, receiving false information about fees for registration of business, sending unsolicited commercial information or copyright infringement.*

Introduction

Entrepreneurs use virtual space at every stage of starting and running their business – registering a company, sharing offers, finding clients and many more. In a contemporary world it is very hard to run a successful enterprise without the help of the Internet.

Online banking

Online banking is becoming more and more popular nowadays, it is certainly one of the dominant components of the financial market. Simplicity, functionality and universality of online management of their finances mean that practically everyone decides to use this method. The main areas of electronic banking include, above all, online banking, mobile banking, as well as payments using payment cards (Krzysztoszek 2017).

One of main advantages of using online banking is the ability to conduct one's bank transactions anywhere and at any time, which is very helpful for people having unordinary lifestyle (Aljawarneh 2016). Internet banking is the most common channel of user interaction with the bank. Communication is usually done using a computer and a web browser, through which the client logs into his bank account. However, in recent years, mobile banking is gaining popularity. Users increasingly decide to manage their finances through applications installed on their smartphones or tablets. This collection is complemented by transactions made with payment cards, above all the possibility of card payments for online purchases (without having to log in to the bank) or contactless payment options, thanks to which you do not need to enter the PIN code while paying with a card for small purchases made in a store. (Krzysztoszek 2017).

Banks, in order to meet the expectations of clients, modify and update electronic access channels on an ongoing basis. This action makes users become less attentive and more vulnerable to cyber-attacks. Such actions are also an incentive for cybercriminals who search for newer methods of extorting money or data from their victims (Krzysztoszek 2017). The use of online banking has many advantages, especially in comparison with traditional banking, where the management of funds accumulated on bank accounts takes place only in a bank agency. Mostly, it saves a lot of valuable time, eliminates the need for a personal appearance in front of a bank employee, waiting in line, etc. This does not mean, however, that electronic banking is flawless. Not all users of this type of services offered by banks are aware of the risks that may occur to them when they carelessly use online account access. Often, it happens that users themselves are not aware that they have just become victims of cybercrime (Krzysztoszek 2017).

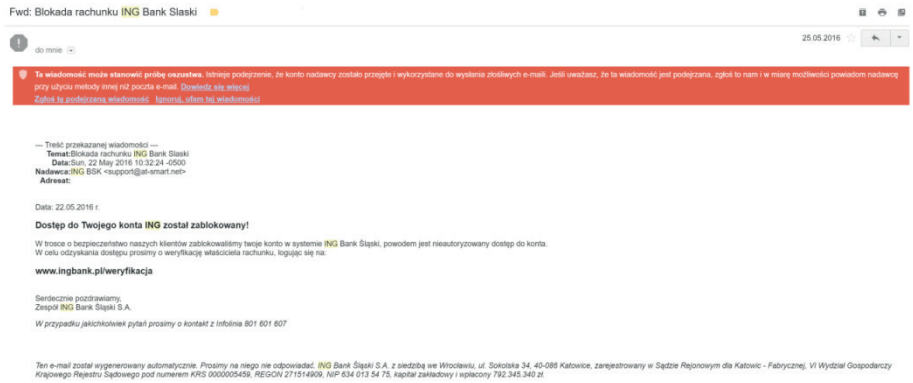
Cybercrimes that hit online banking can take many forms. The most common of them are, among others phishing and pharming. Phishing is a way of attacking a victim usually using email messages. The purpose of this is to steal confidential information that is not available to the public, such as username, account password or credit card information. There are also situations in which a criminal tries to persuade a victim to take specific actions, misleading that the data is shared with a trusted institution. (Kumaraguru, Rhee, Acquisti, Cranor, Hong, Nunge 2006). The phisher creates a fraudulent email message that is sent to a potential victim,and creates a fake bank site that looks almost the same as the original one. Obtaining sensitive data can take place in two ways: the first possibility is that in the email there will be a request to provide specific data, and the answer should be given by sending a response to a specific address (the de facto address of the offender). This is the easiest way to get the required information, but it is not very effective, because most of the online banking users know that they should not provide such data in emails. Undoubtedly, the most effective action is to create a website that looks almost identical to the real website of the institution that the phisher invokes. Then the victim gets an email with the message, e.g. that the bank's service works are being carried out and user is asked to immediately log in to the account to update his/her data. In the text of such a message there is also a link to the alleged bank page, to which user have to log in. After clicking on the link, the user is redirected to a fake page, and when he/she attempts to log in, his data is automatically sent to the phisher. Thanks to this, the offender gains access to the victim's account and is able to perform any operation on it.

Pharming is even more difficult to detect than phishing. In this case, the criminals also create a fake bank website, but the difference is that redirecting to this fake site occurs whenever the user wants to visit the real bank website. This means that even if the victim enters the bank's website (e.g. using an internet search engine), he/she will be redirected to a fake website (Stamm, S., Ramzan, Z. Jakobsson, M. 2007).

Due to often visually changing bank websites, most of the users will not pay attention to the fact that the page to which the link was given in the email differs in a few details

from the page that always appears when you try to login. However, there are some ways to check whether a site that requires us to provide sensitive data is actually the one to which we want to access. First of all, check if the name of the bank appears in the address bar of the website. If the displayed address raises any doubts, do not attempt to log in. It is also worth paying attention to whether the connection to the site is trusted and secure. We can learn this by checking the message in the address bar - if the message is green and informs that the site is secure, then the probability that the page is false, drastically decreases.

Several Polish banks have repeatedly encountered the situation of spoof and attempts to extort data from users. One of such banks was ING Bank, which had a misleading web site, as well as emails to its clients, informing about the need to provide login details for online banking.



Fwd: Blokada rachunku ING Bank Slaski

25.05.2016

do mnie

Ta wiadomość może stanowić próbę oszustwa. Istnieje podejrzenie, że konto nadawcy zostało przejęte i wykorzystane do wysłania złośliwych e-maili. Jeśli uważasz, że ta wiadomość jest podejrzana, zgłoś to nam i w miarę możliwości powiadom nadawcę przy użyciu metody innej niż poczta e-mail. Dowiedz się więcej

Zgłoś tę podejrzaną wiadomość Ignoruj, ufam tej wiadomości

--- Treść przekazanej wiadomości ---
Temat: Blokada rachunku ING Bank Slaski
Data: Sun, 22 May 2016 10:32:24 -0500
Nadawca:ING BSK <support@at-smart.net>
Adresat:

Data: 22.05.2016 r.

Dostęp do Twojego konta ING został zablokowany!

W trosce o bezpieczeństwo naszych klientów zablokowaliśmy twoje konto w systemie ING Bank Śląski, powodem jest nieautoryzowany dostęp do konta.
W celu odzyskania dostępu prosimy o weryfikację właściciela rachunku, logując się na:

www.ingbank.pl/weryfikacja

Serdecznie pozdrawiamy,
Zespół ING Bank Śląski S.A.

W przypadku jakichkolwiek pytań prosimy o kontakt z Infolinia 801 601 607

Ten e-mail został wygenerowany automatycznie. Prosimy na niego nie odpowiadać. ING Bank Śląski S.A. z siedzibą we Wrocławiu, ul. Sokolska 34, 40-086 Katowice, zarejestrowany w Sądzie Rejonowym dla Katowic - Fabrycznej, VI Wydział Gospodarczy Krajowego Rejestru Sądowego pod numerem KRS 0000005459, REGON 271514909, NIP 634 013 54 75, kapitał zakładowy i wpłacony 792.345.340 zł.

Fig. 1.- Phishing email message from ING Bank Śląski. Source: Private archive

The above email was sent by a person or institution claiming to be one of the largest banks in Poland. In this case, the email program recognized the threat and displayed a warning that this message could be an attempt to cheat. In addition, it is worth paying attention to the sender of the message: ING BSK (a shortcut that has nothing to do with the correct name of the bank) and an email address that does not come from the bank's internet domain. In this case, you should not give any data, and in particular do not provide sensitive information, such as login or password. If the bank needs any additional information about its clients, such information can be provided by personally visiting the bank's agency. No bank or other financial institution, for security reasons, will require its clients to provide sensitive data only electronically or by telephone.

Particular attention should be paid to the fact that the security of funds stored in bank accounts depends mainly on the users themselves. The Polish Financial Supervision Authority has developed several advices to which clients of banks using online banking should adhere:

- Customers must especially take care of the login and password for electronic banking. They are not allowed to be shared with anyone, especially undesirable persons. In addition, information should not be stored on a computer disk, a network drive or on mobile devices. Some banks may refuse to accept a complaint if large amounts of cash disappear from the account and the client has lost or knowingly provided login details to someone else;
- The password for online banking should be changed frequently. This can be, for example, once a month. The new password should be not too short and should consist of uppercase and lowercase letters, numbers and special characters. Users should not include associations with their name, date of birth or place of residence in the password;
- Do not open links that raise any doubts as to their authenticity, or that come from emails sent from unknown addresses or from strangers. These may be phishing attempts or preparation for installing malicious software on the user's computer;
- Before attempting to log in, make sure that the site is secure and that the user has been redirected to the real bank site. Websites that require a password to login should have addresses beginning with "https: // www ..." and a closed padlock icon should appear next to the address;
- Each time when making online transfers, users must pay attention to whether the recipient's bank account has been entered correctly, especially if it has been pasted into the bank transfer window after copying it, eg from an electronic invoice. There are malware programs that can replace several digits when copying, and as a result, the transfer will reach a completely different account than it was intended. In the case of defined transfers carried out periodically and automatically, users should periodically check whether the numbers of accounts to which fees should be paid have changed. There may be a situation in which a regular, defined recipient will change the bank account number and the old account will be taken over by someone else. As a result, our transfers will be transferred to the account of a third party, and arrears in payments will appear on the correct account of the defined recipient;
- Users should check the history of transactions made on their bank accounts on an ongoing basis. If the criminals decide to steal many small amounts, we may not even notice that we lack money;
- The transaction limits set on the bank account should be appropriate to the real user's needs. If we usually do not make payments above a certain amount, it is worth setting a limit in line with our expenses to ensure that in the event of a cyber-attack on our bank account, we will not be deprived of all savings in an instant;
- If this is not absolutely necessary, avoid connecting to electronic banking via public Wi-Fi networks. Chances that cybercriminals will want to attack our account are definitely higher than for private home networks. Users should also avoid logging in to the bank using third party equipment or publicly available devices;

- Data for logging into electronic banking should be unique - users should not set the same login or password for any other service (Krzysztoszek 2017).

False information about fees for registration of business

Fraudsters find many new ways to get personal or financial information from others. Such methods include sending false information about the need to pay a company registration fee. In this case, mainly small entrepreneurs, usually self-employed, who have just started their own business are exposed. There are many institutions that - impersonating legal and state institutions - send new entrepreneurs a call for payment for publishing information about a company in the registry. Often there is also information that in the absence of payment of a certain amount on time, the company will be removed from the registry. Such letters are usually constructed professionally, written in legal language, often signed and stamped by an authorized person. For those who are unfamiliar with the subject, who are not familiar with the current regulations on setting up and running a business, such calls may look credible, and the threat of removing the newly created company from the registry makes them decide to pay the required amounts.

Currently in Poland, the establishment of a self-employment company is free. The Ministry of Development, which manages the state registry of small entrepreneurs, informs that "All activities related to entry into the Central Registration and Information on Business (CEIDG), conducted by the Minister of Development and Finance, are free. To all cases of offering an entry in the registry of entrepreneurs for a fee should be approached with special caution, as these are commercial offers." (https://prod.ceidg.gov.pl). Despite of this, there are many companies on the Polish market that impersonate the official registry and decide to send entrepreneurs calls for payment. It is worth noting the abbreviation of the official registry kept by the Ministry - CEIDG. It is important due to the fact that many entrepreneurs do not know exactly what the register is called to which they should be entered, they only associate the abbreviation itself. Private registers sending business invitations to payment are perfectly aware of this, so they construct their names in such a way that both the name and the abbreviation are similar to the official one. Therefore, there are such registers on the market as CEFDG (Central Registration of Companies and Business Operations), (CRFDG) Central Registry of Companies and Business Operations, as well as many other commercial companies names that sound similar to the official registry. Often, these companies also send letters requesting to fill in the data in the registry. However, the information requested by such institutions is sensitive data that should not be given to anyone, because their possession allows, for example, signing of a loan agreement. Therefore, a situation may arise in which, after paying a fee for entry into a commercial registry and providing your details, it turns out that a large loan has been taken in our name (https://businessinsider.com.pl/firmy/falszywe-pismo-od-ceidg-po-czym-poznac/kbtdsmg). It should also be noted that only the registration of an enterprise in an official registry maintained by the Ministry of Development - Central Registration and Information on Business - entitles the entrepreneur to legally run a business. Any

other registration - including disclosure of information in commercial registers that send requests for payment - does not enable running a company in Poland (http://pogorze24.pl/falszywe-wezwania-do-zaplaty-nie-daj-sie-naciagnac-oszustom/78446/).

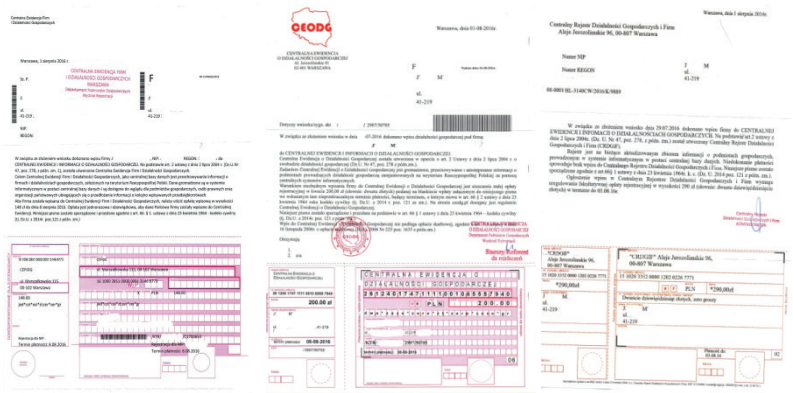


Fig. 2 - Examples of misleading calls for payment. Source: Private archive.

Such calls for payment are usually made to the entrepreneur within the first days or weeks after registering his company in the official registry. However, the problem is much more complex and it does not affect small entrepreneurs only. Similarly calls for payment are also received from newly registered corporations. In Poland, each corporation, in order to be able to start operations, must be registered in the corporation registry maintained by the Ministry of Justice under the name "National Court Register" (KRS), operating under the Act of August 20, 1997 on the National Court Register. The complexity of the problem in the case of corporations is that entry into this registry is payable. Few entrepreneurs who want to set up a corporation know where and how much they should pay to be able to legally operate in this form, but are aware that payment of such a fee is necessary. The company's registration costs are determined by law (Act of 28 July 2005 on court costs in civil cases) and amount to PLN 500 (about USD 145) and must be paid to the account of the competent economic court to which the application for company registration is made. If the application is submitted not in paper form, but in electronic form, the fee is PLN 250 (about USD 73), however not every type of company may be registered electronically. Nevertheless, entrepreneurs who have already managed to obtain the entry of the company in the national register, as in the case of small entrepreneurs, receive a request to pay for registration or for a copy from the commercial register.

The National Court Register (in Polish: Krajowy Rejestr Sądowy, KRS) is the only institution authorized to collect fees for registering a company. In spite of that, commercial registers appear on the market, such as the National Register of Entrepreneurs Information (in Polish:

Krajowy Rejestr Informacji o Przedsiębiorcach, the Office of Transfers from the Court and Economic Monitor (Kancelaria Odpisów z Monitora Sądowego i Gospodarczego), ORF Ogólnopolski Rejestr Firm, National Register of Economic Activities. Fraudsters in the content of letters sent to entrepreneurs often refer to specific legal provisions that are allegedly the basis for their payment. Often they refer to provisions that either do not relate to the situation or do not exist at all. Unfortunately, for many entrepreneurs, reference to specific paragraphs of the Act, as well as the authentication of the letter with a stamp and signature, are sufficient evidence confirming the authenticity of the letter and the demandability of the request, and therefore decide to pay a fee so that their company is not removed from the official register of entrepreneurs (http://pogorze24.pl/falszywe-wezwania-do-zaplaty-nie-daj-sie-naciagnac-oszustom/78446/).

An important issue is also the very content of letters constituting false calls for payment. Often, entrepreneurs are invited to pay an optional fee, and its non-payment will result in deletion from the register. The key word here is the "optional" fee, which in free translation means voluntary. Failure to make such a payment will result only in the lack of entry or deletion of the company from the commercial register, which is only an information service, a kind of unofficial list of companies, and not an official state register of companies. Entrepreneurs do not have to be afraid that non-payment of the optional fee to a commercial register will result in the inability to continue to do business (http://czasopismo.legeartis.org/2017/07/krajowy-rejestr-dzialalnosci-gospodarczych.html).

When discussing the subject of official state registers of both small entrepreneurs and companies, it should be pointed out that the provision of information contained therein is completely free, for an excerpt from the CEIDG register, and for the excerpt from the National Court Register, no fees are charged, as both registers are available electronically. However, in Poland a commercial company was also established under the name of the Chancellery of Transfers from the National Court Register (in Polish: Kancelaria Odpisów z Krajowego Rejestru Sądowego), which sends entrepreneurs invitations to pay for providing an electronic copy of the National Court Register (KRS). People who are unaware of the existence of companies impersonating official registers are willing to pay the required amount to ensure that their company operates correctly and in accordance with applicable law (http://poradnik.ngo.pl/wiadomosc/778091.html).

In Europe, there also can be found similar offers from commercial companies that offer entrepreneurs an entry in the register for an additional fee. In Germany, under the DAD GmbH, a European Business Number operates, which sends a request for payment for verification of the company in the register. The owners of the companies indicate different amounts to be paid to DAD GmbH - some indicate that the information they obtained is EUR 890 per year, others state that they were called to pay EUR 2,885 for three years of access to the register. Calls for payment are sent both by traditional mail and by e-mail. If one of the entrepreneurs decides to pay, and then wants to recover the wrongly paid amount, he must reckon with the fact that the European Business Number register

is subject to German jurisdiction, and his rights can only be claimed before the court in Hamburg (https://rlaanemets.com/post/show/beware-of-european-business-number-spam-scam).

Similar calls are also notified by entrepreneurs from other European countries, including Croatia. Croatian entrepreneurs must remember that VAT ID number is given by the Croatian Tax Administration, and the correctness and validity of the number can be checked at any time online, without any additional charges. No commercial companies may require businesses to pay for access to data for which access is officially free (http://eurofast.eu/croatian-authorities-warn-against-european-business-number-ebn-scam/).

Unrenewed website, Cybersquatting, Typosquatting

The company's website is its business card on the web. Nowadays, the search for an entrepreneur who will carry out the task we have commissioned to a large extent begins on the Internet. However, all the time many entrepreneurs do not feel the need to have their own website, and even if someone persuades them to do so and use such a website, they probably will not attach much importance to it. It is worth noting that the registration and maintenance of the website is payable. The costs depend on the type of domain as well as the country in which the domain remains. The most common practice for creating a company's Internet address is the "name.extension" scheme. The most popular extensions are ".com", ".eu", ".org" and extensions related to the country that makes the domain available, e.g. ".pl", ".de", ".it". Most people choose a domain according to the area of their company's activity, i.e. enterprises operating exclusively in the country choose a national domain, while entrepreneurs planning international activities decide to extend ".com" (Dutko 2008). Few entrepreneurs, especially small ones, decide to buy all popular extensions for their company. It may therefore happen that a company whose goal is international activity will decide to buy only the ".com" domain, and the identical website address, but with the national extension, will be taken over by some other person or company. n the best case, some customers will have to make a few attempts before they reach the international business site, in the worst case the owner of an internet address with a national domain may try to work against the former. For example, we want to create a website for a company called Sunny. We want the internet address of our company to be associated with its name, so we buy a domain called "www.sunny.com". When our company becomes popular and respected on the market, there are people or institutions that want to harm us, that's why they register the site "www.sunny.pl" and post content that compromises our company. Then customers who mistakenly enter as the address of our site "www.sunny.pl", will be convinced that they came directly to us, and our action presented on our website effectively discourages cooperation. Due to such behavior, we may lose many customers, and in the long term - perhaps we will be forced to liquidate our company, because its further operation will be unprofitable.

There are also situations in which someone deliberately registers domains similar to the names of well-known brands, people or companies, and then resells them at an inflated

price. his phenomenon is called cybersquatting. This phenomenon is also consistent with the above-mentioned practice of buying websites ending with various extensions, if it is aimed at financial gains for a cybersquatter. The evaluation of such proceedings is varied. Some argue that such a practice is unethical and should be banned, while others say that people who want to register a domain compatible with their company should think and secure all opportunities earlier, and if they did not do so, the cybersquatter has the right to require the remuneration for re-selling them his website (http://www.domainers.org.pl/).

A phenomenon similar to cybersquatting is typosquatting, also called "URL hijacking". This is a technique used to deceive Internet users by registering websites with names with incorrect entries, e.g. www.gogle.com instead of www.google.com or www.rnbank.pl (RNbank) instead of www.mbank.pl (Mbank). The fraud consists in using such addresses, which most often result from users' mistakes in spelling. A spelling mistake may occur not only within the name of the company itself, i.e. the website, but also in the extension, in this way we will get, for example, "www.google.cm", which in fact turned out to be a virtual casino, registered in the Cameroon domain (Dutko 2008). This is what the situation looked like 10 years ago, as of today Google has made sure that typing mistakes redirect users to the actual website, which is a search engine.

In addition to cybersquatting and typosquatting, one more important issue should be noted. Websites assigned to specific domains have their lifespan. The possibility of using a specific Internet address is made available for a designated time. It may be a year or a few years, however after this time each website must be extended so that the entrepreneur can continue using it. If the company does not pay another period in which it will be able to use a specific page, this address will return to the public pool of internet addresses and be able to be bought by someone else. It may turn out that after many years of using the purchased Internet domain, which customers have already got used to, it will suddenly be taken over by someone else, because the entrepreneur has not fulfilled the obligation to pay another period of use (Dutko 2008).

History knows the cases in which the non-renewal of the website had painful consequences for its users. With such a problem met among others an American company, Regions, providing banking services, which in the United States has as many as 1,700 departments. By a mistake of the employee of the company, the domain that Regions used was terminated. Many people have been cut off from their funds because the online banking did not work. Eventually the problem was solved and the company managed to regain access to its website, however thousands of people could not log in to their accounts even for several dozen hours (https://blog.domeny.tv/2013/04/18/bolesne-konsekwencje-nieprzedluzenia-domeny/).

In Poland, it was loud recently about taking over the Internet domain of one of the political clubs. Law and Justice Club (in Polish: Prawo i Sprawiedliwość, PiS), has long used the website www.kppis.pl. However, in February 2017, the domain was expired, and the

club forgot to extend it. As a result, the address returned to the public domain register and was immediately purchased by the new user. To this day, the Friends of Bread and Cheese Club (in Polish: Klub Przyjaciół Pieczywa i Sera, KPPiS functions under this address. This means that the site of one of the largest political parties in the country has evolved into a culinary portal (http://kppis.pl/; http://www.parlamentarny.pl/wydarzenia/klub-pis-stracil-domene-na-kppis-pl-kroluje-ser,21143.html). Such a situation can happen to any entrepreneur who will not remember to renew his Internet domain before it expires.

Sending unsolicited commercial information

Entrepreneurs are looking for many different ways that would allow them to reach as many customers as possible. Often, the website itself is not enough to become recognizable and desired by customers. Many companies decide to create a specific commercial offer for potential customers, and then - using the benefits of the Internet - decide to send their offer to random people in the hope that at least some of them will show interest in the offer. Unfortunately, on the basis of Polish law, an entrepreneur sending a commercial offer to a consumer (natural person) without his consent to send such offers is unlawful. Pursuant to the Act of 18 July 2002 on the provision of electronic services, sending unsolicited commercial information by means of electronic communication, in particular electronic mail, is prohibited. Unsolicited commercial information is always when the consumer has not expressly consented to its receipt. Sending commercial offers without the consent of the recipient is an act of unfair competition, it can also result in financial and criminal liability of the entrepreneur (Act of 18 July 2002 on the provision of electronic services).

The entrepreneur may obtain the client's consent for sending commercial information in various ways. Quite often practice is to ask for consent when signing a contract between the company and the consumer. In the case of contracts for the provision of services, some companies give customers additional discounts for the marketing consents. Consent may also be granted on the entrepreneur's website (e.g. by subscribing to the newsletter). As previously mentioned, the consumer's consent must be made explicitly, it cannot be implicit consent. Just entering the entrepreneur's website cannot be synonymous with expressing such consent. Contract templates available at business premises usually contain appropriate "windows" in which the "I agree" option should be ticked by a consumer himself. Windows can not be selected by default, so that the customer who does not want to give consent can deselect them, but they must be constructed in such a way that there is no doubt that the consent has been deliberately expressed by the customer (https://www.uokik.gov.pl/konsument_w_sieci.php#faq967).

Dissemination of false information about an enterprise

Issues concerning the dissemination of false information about the company can be seen from different points of view. Sometimes people who create fake news about one's enterprise can pretend to be someone close to the entrepreneur – a friend, a teacher or a doctor (Balasubramanian, 2016).

Dissemination of false or misleading information about one's own or another enterprise (entrepreneur) is unethical behavior, but quite often identified in business practice. The purpose of such action may be to obtain certain benefits or cause damage to another entrepreneur. These issues from the ethical side are dealt with within the ethical problems of competition. These activities are intended to lead to competitive advantage on the market or are dictated by the desire to destroy competition (also for personal reasons). An example of such destructive behavior can be a "black series" of deaths of 7 people after taking tylenol (an alternative to aspirin) that took place in 1982 in the USA. The investigation showed that cyanide was found in capsules with tylenol instead of the medicine (Lewicka-Strzałecka, 1987, Hartley, 1993). The riddle of "Tylenol deaths" has not been solved to this day. The producer of the drug, McNeil (a subsidiary of Johnson & Johnson Company) has been cleared of all suspicions, but the perpetrator could not be identified, so it is not known whether, for example, it was the revenge of former McNeill employee or exceptionally ruthless black PR of the competition (Mikoliński, 2008). Johnson & Johnson, in order to gain customers' trust again, has spent more than US $ 100 million on buying unused medicines and re-introducing tylenol to the market. The tragic situation, however, repeated itself in 1986 (1 fatality). In this case, the perpetrator was also not included, but now the company is no longer producing Tylenol in capsules (Mikoliński, 2008). For safety, the medicine is available in the form of tablets, drops and suppositories.

Shaping a positive image of the company takes many years, and the dissemination of false, negative information about a competitive company can quickly destroy this image and undermine the trust in the company and its products or services. Modern ICT technologies on the one hand are a very useful tool for shaping a positive image of the company, but on the other hand they are also used as an effective tool to unfairly fight for a competitive advantage by creating a bad opinion about the competition. Currently, the most widespread, global information and communication medium is the Internet. The possibilities of the Internet are disproportionately larger than traditional mass media. Dishonest, unhealthy, hostile competition can quickly send information to millions of users around the world using the Internet. Of course, this does not mean that all e-mail addresses are generally available, but it is relatively easy to obtain such databases. They are often available on the websites of individual companies or institutions. Enemy competition can also be used by an unfair, misleading advertising. In this case, however, it is easier for the aggrieved entrepreneur to assert his rights in court. Practice shows, however, that the proceedings take a long time and the client is more and more demanding and fastidious. The availability of similar products and services on the market does not motivate the customer to track whether the information transmitted on the Internet is false or true. Friends & Brands recommending their advertising services on internet forums evokes data that 66% of Internet users trust the opinions on the web (https://www.goldenline.pl/grupy/Reklama_marketing_wizerunek/marketing-szeptany/ksiazki-na-temat-marketingu-szeptanego, 401,400 /). If the information and opinions are negative, they

will definitely affect the customer's preferences. If they are repeated in several places (and the Internet after the introduction of information to him starts to rule its own laws and duplicate information in a generally uncontrolled manner), they are memorized and the customer even subconsciously may resign from buying a product or service "devalued" by false information. Similar harm can be caused by whisper marketing or viral marketing. Although these tools are used to arouse interest and shape the needs and willingness to purchase a product or service, they can also be used to provide negative feedback and false information. The ethical crisis in word-of-mouth marketing (WoMM - Word-of-Mouth Marketing) resulted in the creation of a good practice document in which "illegal intrusive marketing practices are considered as infringing activities that deliberately mislead the Internet users or denigrate the competition, in particular transmitting or inspiring to provide untrue or otherwise unreliable information "(Ratuszniak, 2010) Flogs (false blogs), insincerity, impersonation of the consumer, black PR are examples of unethical practices in the field of word-of-mouth marketing (Bartoszewski, 2010).

Social media are effective tools for advertising and image building. The unquestionable tycoon here is Facebook. In 2017, the monthly number of website users exceeded 2 billion, each day appears on the platform 600 million likes. The popularity of Facebook is also recorded in Poland (Grzybowska, 2017-1). Although "social media" [Google, Facebook] cannot cope with fake news, YouTube ensure brand safety, and programmatic cope with frauds", but "the online advertising market is still growing" (Grzybowska, 2017-2). So it is not difficult to get "unfair advertising", which unfortunately can be used to fight competition (Maciuszek, 1997). An example of an unfair advertising can be the advertising of the Link4 Insurance Society, which encourages the use of services. Coloring of the advertisement, used background music (Jerzy Petersburski's tango - "The Last Sunday"), sad and discouraged and helpless men - all this creates a pessimistic and bleak atmosphere. Passwords like: "Do not let yourself go for pity", "in all Poland insurance agents suffer a lot, because 300,000 drivers have abandoned them for Link4" and "Tears of agents are not surprising. Already 300,000 drivers abandoned them and went over to Link4 "suggesting the superiority of Link4 over other insurance companies. The Polish Chamber of Insurance and Financial Intermediaries (PIPUiF) stated that the advertisement is illegal and of good manners and does not meet basic ethical standards, because Link4 in its advertisement undermines the trust in insurance intermediaries, suggesting that they care only about their own interests and disregard the client's interests, as shown by PIUPUiF. Advertising also misleads consumers, suggesting that the price of insurance policies in Link4 is lower than for other insurers operating on the market. Independent research company IDM Services from 2010. however, they showed that in over 95% of cases, insurance prices in Link4 were not the cheapest. The court, to which PIUPUiF filed an accusation, considered Link4 ads to be an act of unfair competition and a violation of decency. The penalty for issuing dishonest advertising was the removal of most of the advertisements of this advertising series from the antenna and an apology, including Gazeta Wyborcza and Newsweek and TVP1, as well as the payment of 100,000. PLN

for charity (Krawczyszyn, 2012). There could be a lot of examples of unfair advertising and unfair competition, but it is not about deprecating competition as such, which, as Jerzy Dietl emphasizes, "in the most perfect way protects the interests of consumers, and hence society. (...) enforces innovation and, consequently, a high rate of technical progress. (...) limits the monopolisation of the market. (...) prompts to optimize the use of economic resources, which is an important guideline for ethics and wealth creation "(Dietl, 1997). Fair competition is therefore beneficial and necessary. Unethical and illegal practices should be disclosed. Legal solutions in Poland protect fair competition and allow us to pursue bad practices.

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CO-WORKING, NETWORKING AND SHARING ECONOMY

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***Abstract**:In the chapter the ecosystem of the contemporary entrepreneur was presented including new challenges for business activity: networks (both interorganizational, social networks), co-working and sharing economy. Current business models of young entrepreneurs very often include activities in different kind of networks, leaving a lot of freedom and flexibility. It also concerns possibilities of using co-working space which are available for micro entrepreneurs and freelancers. The sharing economy is also subject of consideration because its impact on business. Different possibilities of sharing economy business models and also some threats of sharing economy were discussed.*

Entrepreneur's action in networks

Entrepreneurs act in social and institutional networks using the resources and abilities of other people and institutions. The undertaking of ventures in multilateral networks of interdependent actors poses a very important question for the contemporary economics and management science. These phenomena are occurring more frequently in clusters and networks, established for creating and developing new, useful products for society. Managing ventures in the networks faces a number of practical and cognitive problems primarily related to the loose nature of the relationship in the networks as well as the dynamic character of the relations. On the other hand, ventures in the loose social and business networks (like creative clusters) are carried out based on the interconnected activities of network actors, which are agreed communication processes (Luhmann 1995). The activities lead to the projects realised by consortia of the network actors and specified resources and products.

Innovative processes specifically refer to the phenomena of creativity and activities of creative environments. In recent years we have observed a special interest in these environments because of the created economic and social values — a significant impact on other sectors and the social environment. For the researchers, creative clusters are an interesting proving ground for observing phenomena of collective creativity (swarm creativity). Creative industries are focused entities creating added value based on individual and collective creativity — the human ability to create new solutions.

Social relations are represented by different types of communities in which the entrepreneurs are active. Hafkesbrink and Scholl (2010) identify the following types of **communities** existing in entrepreneurial ecosystems:

- Communities of Affinity - CoAs – a network of people in cooperation. The employees of small and big enterprises, which cooperate with other entities, form strong communities of links between suppliers and recipients.
- Communities of Practice - CoPs – a network of people focused on solving a specific problem.
- Communities of Interest – CoIs – a network of people focused on pursuing their own interests.
- Communities of Science - CoSs – a network of people focused on a research or scientific problem.

These types of social networks exist within organization and beyond – especially entrepreneur or startup can be involved in all of these relationships.

To understand the processes of joint creation in the network of interdependent workers Peter Gloor suggested the concept of **COIN - collaborative innovation network**. The author observes the COIN activity in the environment of ICT programmers and engineers working for various organizations. The author argue that COIN's has the following characteristics:

- They are learning networks – they deliver knowledge for the network members by the process of individual and collective learning.
- They need an ethical code – ethical principles guiding every network member. Of course, the need does not mean that they always have any ethical code.
- They are based on trust and self-organization – the level of coordination is relatively low in correspondence to the formalised institutions. Coordination is realised by trust and self-organization.
- They make knowledge accessible for everybody – every member of the network has the access to the knowledge, also the individuals from outside the network could use it.
- They operate in internal honesty and transparency (Gloor 2006).

Interorganizational networks take different forms. Start-ups are very often part of such networks. R. Miles and Ch. Snow (1992) define the interorganizational networks as: *"...concentrations of companies or other specialized units, whose actions are driven by the market mechanisms and not by the chain of orders and imperatives".* A. Buttery and E. Buttery (1994) focus on a business networks defined as: *"two or more organizations that enter into mutual relations that influence all networks' members as the entire organization".* Business networks include also franchise networks and logistics networks – focused on collaboration in resolving specific functions considering all parties of the business activities.

Among the different types of networks, we can distinguish **innovative network**: "the organised form of cooperation (an agreement) among companies, reinforced by trust, norm and principles of cooperation, which stimulates companies' innovation activity" (EU 2003).

Perhaps one of the most mature form of the interorganizational networks is cluster, defined by Michael Porter (1998) as: "geographically proximate group of interconnected companies and associated institutions in a particular field linked by commonalities and complementarities."

Identified in different countries around the world, cluster have the following features:

- sectoral specialisation – clusters have specialisation connected with a certain sector (automotive, aviation, medical, tourism etc.),
- complementarity – not only competitors create a cluster but also entities offering complementary goods,
- geographical concentration – for practical reasons, the geographical scope of the cluster does not exceed 200 km.

Sharing versus competing

The environment of contemporary business, also called ecosystem, is subject to intense changes. Especially the relations between the parts of transactions are rapidly changing due to the use of internet technologies. Every start-up from the beginning need for running: place to work, clients, partners, resources. These elements presented in a business model canvas (Osterwalder and Pingneur 2010) are created individually and in cooperation with other entities surrounding. In modern society sharing economy as a business and economy phenomenon and theoretical concept is more and more important. For a large number of consumers, it occurs by using electronic applications (like uber.com, airbnb.com) organizing the sharing economy markets by linking tenderers and recipients. In practice it is realized on local, national and global scale, but there is a question if we are heading towards universal, global pattern of sharing economy business models or there are some cultural differences related to sharedvalues determining the consumer behaviours. Besides the technological factors, like ICTs enabling consumers to share product and services, social factors become very important in creating value propositions for the customers. This is the key factor for developing business models based on sharing economy principles.

The concept of sharing is not new – it has been done since the beginning of humanity in the circles of trust – people share resources with the others they know. However, in sharing economy literature there is a lacks of multi-level theoretical perspectives (Cheng 2016). New sharing economy business models enable to share resources with the others they do not know. Customers' trust can be established on the three pillars of such business models: transparency, secure methods of payment and social reputation (Mauri et al. 2018).

From sharing resources to sharing economy

The phenomenon of sharing economy occurred as a consequence of development of ICTs and formation of new generation of customers able to share their tangible (flats, cars) and intangible resources. This consumption behaviours have not been even predicted in hand-books of marketing from the beginning of 21st century (Hawkins et al., 2007). The contemporary understanding of sharing economy comes from Botsman's (2013) concept of collaborative consumption defined as a ***"system that activates the untapped value of all kinds of assets through models and marketplaces that enable greater efficiency and access"***

But regardless the definition, the author identifies five ingredients of sharing-driven companies:

- The core business idea involves unlocking the value of unused or under-utilized assets ("idling capacity") whether it's for monetary or non-monetary benefits.
- The company should have a clear values-driven mission and be built on meaningful principles including transparency, humanness, and authenticity that inform short and long-term strategic decisions.
- The providers on the supply-side should be valued, respected, and empowered and the companies committed to making the lives of these providers economically and socially better.
- The customers on the demand side of the platforms should benefit from the ability to get goods and services in more efficient ways that mean they pay for access instead of ownership.
- The business should be built on distributed marketplaces or decentralized networks that create a sense of belonging, collective accountability and mutual benefit through the community they build. (Botsman, 2015)

The value for the consumers captured as the value for the company is the basic assumption for business model creation (Afuah 2004). Therefore, for analyzing sharing economy business model we should focus on the value delivered to the customer (Laasch 2018). Observing the essence of the sharing economy business models we can identify the following values delivered to the customers:

- economical values – cheaper access to resources because the providers use "idle capacity" and local deliverers. We can expect that this element corresponding with the final price of the product is one of the key factors fostering the development of sharing economy business models.
- social values – in the most of sharing economy businesses the consumer has contact with emotionally involved people, not only delivering service but also "human aspects". Large number of the consumers are "life oriented". They tend to contact real people while consuming services rather than use the systemic services. Many of the social economy platforms (e.g. wonowo.com) emphasize the importance of a social

factor. The nature of equivalent relations in sharing economy makes to call sharing economy peer-to-peer economy.

- environmental values – using "idle capacity" in many situations means that we are more environmental in terms of consumption of materials, energy, fuel. For example, blablacar.com shows how much carbon dioxide the vehicle emitted during the trip.
- value of convenience – using modern technologies, secure methods of payments and local service providers make sharing economy platforms more convenient to the consumers. That is why many authors argues that we have to talk about "access economy" rather than "sharing economy" – the consumers more valued access than the fact the resources comes from "idling capacity".

If we consider the fact that consumers perceived the combination of these factors in the following way of thinking "I have obtained cheaper service, supporting local business, with very quick access and, moreover, I protect natural environment". These elements were analysed by L. Böcker and T. Meelen observing the differences of motivation of socio-economic groups. But economic motivation remains one of the most important motives of consumers.

The value of the sharing economy business models is revealed in possibility of building new business models based on sharing economy platforms (Zhang 2018). For example, Airsorted service have been built on the potential of Airbnb marketplace: the tenderers sometimes do not have capacity to cleaning, while exist a large number of people offering to do the job. Airsorted platform joins the needs of tenderers and cleaners offering also additional knowledge on establishing tenderers' business model (listing creation, price optimisation, guest communication etc.). This is very valuable for the beginners offering accommodation at Airbnb (How Airsorted works: https://www.airsorted.uk/about/, access: 01.2018).

Considering the fact that sharing economy business models uses the same technologies world-wide and there is global tendency for unification, we can ask if there are some cross-cultural differences in creating and developing sharing economy business models in different countries. There are practical examples of operating the same platforms in different countries. Uber internal data shows important differences between driver's operation in USA and UK. Caused by national differences of regulation, UK drivers works average 25 hours per week, while US drivers work only 10 hours (Coyle, 2016).

Business model is well-known concept used in management theory and practice. One of the best-known definition was proposed by A. Osterwalder and Y. Pingneur (2010): "Business model describes a rationale of how an organization creates, delivers and captures value". Zarei et al. (2011) understand business model as ***"...conceptual tool containing a set of ele-ments and their relationship that allows the expressions of a company's logic of earning money".*** An extended definition of a business model presented by Teece (2010) is often quoted. In his opinion "the essence of a business model is in defining the manner

by which the business delivers value to the customer, entices them to pay that value and converts the payment to profit. It thus reflects management's hypothesis about what customers want, how they want it and how businesses can organize themselves to best meet those needs, get paid for doing so and make a profit." Simmilary in the studies of Afuah (2004), Chesbrough (2010), McGrath (2010), Newth (2012), Zott at al. (2010) we can find the key role of value creation and value delivery.

In case of sharing economy, we can identify two parties creating business models: operators (like Uber, Airbnb) and tenderers – active users of internet platforms. In practice the third party creating business model may occur: consumers offering something or tenderers being also consumers. But according to business model definitions, presented earlier, value creation enabling earning money is the key element of business model. Muñoz and Cohen (2017) prepared an analysis of available concepts of business models existing in sharing economy

"Sharing Economy comprises the peer-to-peer exchange of tangible and intangible slack (or potentially slack) resources, including information, in both global and local contexts." (Fellander et. al., 2015).

Table 1. Examples of sharing economy platforms around the world. Sources: own elaboration based on the information on Google Play Store.

No	Platform's name	Specialization	Localisation	Number of opinions	Number of downloads
1	Munchery	Food sharing	USA	418	50 ÷ 100K
2	Uber Eats	Food	USA	191K	10 ÷ 50m
3	Funding Societies	peer-to-peer lending marketplace	Singapore, Malesia	71	10 ÷ 50K
4	Indiegogo	kickstart platform	India	4K	100K ÷ 1m
5	Kickstarter	kickstart platform	USA	13K	1 ÷ 5m
6	Fiverr	ICT freelancers	USA	87K	1 ÷ 5m
7	Upwork	work sharing	USA	11K	1 ÷ 5m
8	WeWork	workspace sharing	USA	285	50 ÷ 100K
9	Grab	transport	Singapore, Southeast Asia	1,3m	50 ÷ 100m
10	Lyft	transport	USA	138K	10 ÷ 50m
11	Uber	transport	USA, global	4m	100 ÷ 500m

12	Didi Chuxing	transport	China	2,5K	100 ÷ 500K
13	Gett	transport	USA, UK	179K	5 ÷ 10m
14	blablacar	transport	France, EU	597 K	10 ÷ 50m
15	wonowo	transport, accomodation & activities	Spain	110	10 ÷ 50K
16	Cabify	transport	Spain	61K	5 ÷ 10m
17	BeepCar	transport	Russia	21K	1 ÷ 5m
18	GO-JEK	transport and delivery	Indonesia	1,1m	10 ÷ 50m
19	Airbnb	accommodation	USA, global	250K	10 ÷ 50m
20	Airsorted	services for Airbnb tenderers	UK	0	100 ÷ 500

The same assumptions have the practical approaches presented in the reports in Poland (Sokołowski et al. 2016), United Kingdom (Coyle 2016) and European Union (EU Report 2013). Roh (2016) sharing this global, theoretical approach, analyzes how social companies in South Korea uses the sharing economy platforms.

In the Fellander's report we can find very useful classification of contemporary sharing economy platforms. According to these approaches we can identify the sharing economy services in the following areas:

- tangible resources exchange (including transportation, property and food services) – currently these is the largest part of sharing economy. Uber being the typical example of these area is the biggest sharing economy company worldwide.
- intangible financial resources — crowdfunding or peer-to-peer lending,
- intangible services — professional and personal work/services.

Practical examples of sharing economy business models concern mostly electronic platforms operators, neglecting the role of users – freelancers running their own business. In the common sense they are identified with global giants like uber or Airbnb. Table 1 presents the list of selected cases of sharing economy platforms, representing different specializations, countries of operation and size (form Airsorted having no more than 500 downloads to Uber having 100 ÷ 500 million of downloads).

As we can observe sharing economy is a world-wide phenomenon: it is observable in almost every country. We can ask if there are cross-cultural differences between the sharing economy business models. There are cross-cultural differences between norms

and values determining consumers' behaviours. But we can inquire if these values significantly determine the nature of sharing economy business models. Davidson et al. (2018) investigated the differences between the attitudes of American and Indian consumers towards the sharing economy businesses considering two basic social variables: materialism and willingness to participate. In the research process they verified hypotheses that materialism has a positive effect on willingness to participate in sharing-based programs of the sharing economy. Considering the cross-cultural differences two hypotheses have been verified by the authors:

- for American consumers, materialism predicts willingness to participate in sharing-based programs as mediated by transformation expectations,
- for Indian consumers, materialism predicts willingness to participate in sharing-based programs as mediated by perceived utility (Davidson et al., 2018)

These differences can be very important in promoting sharing economy services however in general construction of the business model they seem to be less important.

Analysing the environment of sharing economy businesses we can find that al lot of independent workers (freelancers) uses sharing economy platforms. In McKinsey report we can find the following facts related to growing importance of freelancers in global economy:

- A large number of specialist prefer autonomy and control, being paid by the assignment or sales and its short-term nature. This trend called 'gig economy' seems to be rational however it is criticized because it brings employees to the times of early capitalism.
- More than 50% of independent workers are supplemental earners.
- 15% of all independent workers have earned income through a digital platform (including sharing economy platforms).
- The size of the independent workforce is estimated at 162 mln. This is the number of both primary and supplemental earners in the US and EU. The number also include start-ups owners (McKinsey 2016).

Students attitudes towards sharing economy platforms

In order to understand the student's attitudes to sharing economy the author of the chapter conduct the pilot survey among the small group (n=48) of Polish an international students. The data were collected using computer assisted computer interview (CAWI) technique for the group of Polish and foreign exchange students. Purposive sampling has been implemented for two reasons: students are one of the most open-minded social groups adopting new technologies, for the author it was the easiest method to access this group during their classes at the university. The questionnaire designed in google. docs platform have been e mailed to students who have been prejudiced during lectures. The answers were collected in January 2018. There were n=48 students participated in the

research, including 29 European students (Poles were the overwhelming number, but also students from Germany, Italy and Ukraine) and 19 non-European students (from Mexico, Bangladesh, India, Uzbekistan and the Asian part of Russia). During the data collection attempts were made to maximize the number of international students, especially from non-European countries. Collected sample for the pilot studies testing the research methodology is sufficient and allows to formulate conclusions and recommendations for further studies.

Most of the respondents (33 of 48) used the sharing economy platforms. It is very important for the study because the attitudes are based not only on convictions and opinions heard but on personal experience of users.

The initial information of the survey considers the platforms used by respondents. In the questionnaire respondents could choose among the three most popular platform: uber.com, airbnb.com and blablacar.com. There were also open question where the respondents could indicate other services, but no other service was indicated in the study (Figure 1). The sum is more than the number of users because the respondents can point out more than one service.

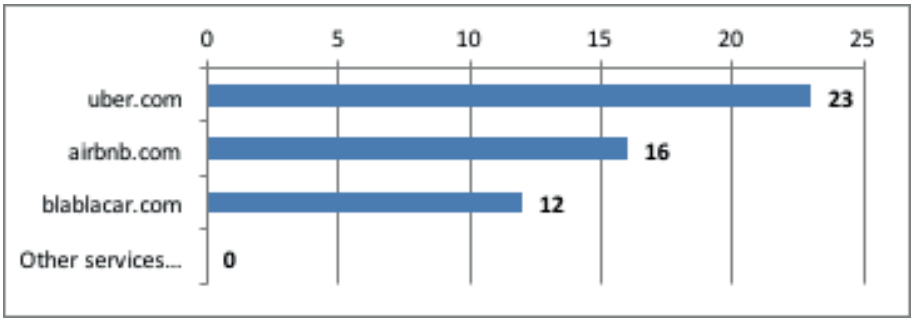

Fig. 1 - Sharing economy platforms used by students. Source: own elaboration.

The most important information from the survey is the primary motivation for using sharing economy platforms. The question has been formulated in such a way that both non-users and users can answer it. The results were presented on fig 2. As we can observe the primary motivation of the students is mainly connected with economic reasons – cheaper access to resources (average value 4,40). Non-economic motives have relatively lower level, in case of other reason (an open-ended question) only three respondents indicate functionalities of sharing economy like: quick, safe and comfortable. These functioalities can be generally considered as accessibility what correspond to the term 'access economy'. As it occurs in the research, this motives could be very valued by customers, that is why this option will be added to the close-ended questions.

Fig. 2 - Sharing economy platforms used by students. Source: own elaboration.

Knowledge sharing

Among sharing resources, knowledge becomes more and more valuable. We share knowledge by learning from public sources and using open intellectual property, known as open innovation. The concept of open innovation is not new if we consider the nature of knowledge exchange form the historical perspective. However, the development of intellectual property rights (IPR) supported the author of the idea (invention). We are currently aware that IPR could also limit the free flow of knowledge and technological development. Most of the authors recently conducting research concerning the processes of open innovation refer to the works of H. Chesbrough, whose first publication on open innovation appeared in 2003. Chesbrough defines open innovation as *„the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively. Open innovation is a paradigm that assumes that firms can should use external ideas as well as internal ideas, and internal and external paths to market, as they look to advance their technology* (Chesbrough, Vanhaverbeke, West, 2006, p. vii).

Today, open innovation is a standard in managing innovations both in the academic field as well as in the practical sphere, in practice being transformed into the business model of open innovation. While adapting Chesbrough's approach, P. Trott points out the following sources of knowledge in the model of open innovation:

- External research project – instead of conducting own research and development projects, an entrepreneur can take advantage of the already realized projects on a similar topic, especially when it concerns pre-competitive research.
- Venture investing – apart from providing capital, investors also provide access to technology in the interest own their own investment.

- Technology in-licensing – through monitoring the condition of technology development, available in the environment technologies might be identified and obtained through purchasing the licence.
- Technology acquisition – owing to the acquisition of a company both technology as intellectual property and hidden knowledge are obtained. (Trott 2008).

Cook assumes that two models of innovation will function in economic practice: an open one, called a channel, providing knowledge externalities for other market participants, and a closed one, called a pipeline, where the innovation process is limited to a closed group of participants. The pipeline offers greater possibility of protecting intellectual property as well as relying on formal contracts and lesser possibility of 'leaks' of knowledge to the other market participants (Cook, 2005).

There are many authors commenting and discussing the open innovation model, sometimes developing the core model and creating added value to the prior conception. Ch. Riedl operationalizing the innovation model, have been analyzed the models of knowledge transfer indicating three archetypes of processes (Riedl, p.64):

- outside-in process – large company absorbs the set of standards and open intellectual property for improving products. The company benefits with the accessible knowledge and the open standard is popularized in public,
- inside-out process – large company opens its technologies to the public when the R&D expenses is not prospecting,
- coupled process – the popularization of the open technology (or open standards) is driven by both part of the process: large company and public, independent organizations.

In these three models the presence of large company (or large companies) is the basic condition of effectiveness of open innovation as the concept. Of course, small companies are those who benefit from the opening of knowledge sources, but in the end the consumers benefit from this.

Sharing working space – coworking

Coworking is very popular way of conducting business especially by individual entrepreneurs (freelancers) in towns and cities. Typical co-working service includes: access to a desk in a shared space and locker for documents. Sometimes the tenant has not a dedicated ("own") desk, but only access to available desk, which is called "hot desking". For an additional fee the entrepreneur can rent a meeting room or other available spaces (conference room, exhibition space). The price for co-working services depends on the place and a range of included services in EU can start from 50EUR monthly. Some co-working operators offers a daily services what really shows the maximum elasticity. Co-working is also style of work enabling openness and contact with other people. Co-working allows small businesses and freelancers to come together and create a

community where they can all benefit from one another, sharing the same values.

Below we can find two examples of co-working spaces: Plain Images in France and Betahaus Berlin in Germany.

Plain Images is film&media cluster located in the region Nord-Pas-de-Calais, France. Plain Image is not a cluster organization, has not formal agreement, but rather local agglomeration of creative entitles. Formally the Plain Images is name of the co-working place - local agglomeration covers a city quarter in Roubaix of former textile industry buildings. With the number of over 100 participants it is the greatest cluster in the region however most of the majority of members are small enterprises. The most important actor of the network is Ankama entertainment company, specialized in animation, comic book publishing, interactive communication and video game design. Most of the network members create around Ankama creative business ecosystem of complementary entitles with very narrow specializations. Kimple company specialised in digital marketing, 3D DUO specialized in video games are the other important players in the cluster using the high potential of the independent creators – co-working place tenants.

The coordinator supplies its clients with the following services:

- Business Development Center – services in the area of organizing conferences, participation in fairs, foreign missions, seeking partners and target markets,
- Searching for employees and consultancy in the area of human resources,
- Incubator for start-ups offering space and individual content support for its occupants,
- Common equipment and services: a co-working space, showroom – for presenting companies' offers in the network, a film studio with the surface area of 500m2, edition of movie studio, software testing laboratory, test equipment in the area of multimedia technology.

Apart from the above-mentioned services, regular meetings, conferences and thematic seminars on technological and market developments are organized 1-3 times a week.

Betahaus Berlin is one of the four co-working spaces owned by the company and operated in other European cities in the same business model. The German capital – second largest city in EU - is a leading location for the digital economy, media representatives and other creative industries. Betahaus is located in the Kreuzberg - one of Berlin's cultural centers in the middle of the now reunified city, known around the world for its alternative scene and counterculture. There is a huge number of agglomerated entitles forming the creative sector in Kreuzberg, but in the close vicinity (200 m) is Moritzplatz which has the Modulor – creative business center and Prinzessinnengarten – gardens being formally administrated by civic association. The gardens are very important for the local life of the district because they are public open space – center for people's contact during warm seasons. The Modulor center is private business park gathering several creative entitles and Modulor Planet store for artist, architects, designers. Modulor with its café and library

is the center of public life during cold seasons and bad weather. In such surroundings operate betahouse giving the place for work for a plenty of self-employed individuals. Most of the freelancers work for the ICT business, but also realizing an art or cultural projects using modern media. For these reasons we can say that the cluster most impact ICT sectors developing social media and social application on mobile devices. Betahaus is not specialized in any sector offering the place for work, meeting or conference rooms and also supporting learning with a wide range of learning formats. The idea of Betahaus business model is very flexible and loose relations with tenants. The working place can be rent for day of month, there is no need of signing long-term agreement.

The advantages of co-working are so important for today's entrepreneurs, beyond economic benefits, that it will develop in the future. We will certainly observe creation of new co-working places form public and private funding, creation of the new services by existing co-working hosts, but first of all - increasing number of start-ups using co-working spaces. From the perspective of the public institutions co-working space is the form of incubation - supporting start-ups and local entrepreneurship, which is effective not only for the beneficiaries but also for the public institutions. For example, in Hong Kong, dozens of co-working spaces have been set up to foster the rapidly growing start-up community, according to Forbes it is among the leading tech locations in the world, along with Silicon Valley and New York City (Strauss 2013). Co-working is becoming increasingly common amongst digital nomads in Asia. Digital nomads are a type of people who use internet technologies to earn a living and, more generally, conduct their life in a nomadic manner. Such workers often work remotely from foreign countries, coffee shops, public libraries, co-working spaces and other public or sharing spaces for living and working.

Conclusions

The importance of sharing economy business models is observed in high developed countries of "Western-world" (USA, Great Britain, Sweden, EU countries). In these countries official documents shaping economic policy shows the new possibilities of sharing economy but also identify the risks of sharing economy for the existing traditional sectors. In the literature we can find many theoretical approaches to defining sharing economy and sharing economy business model, however there are no cross-cultural differences between them – we can say it is global, world-wide phenomenon. The basic assumption for exploring cross-cultural differences among sharing economy business models is to analyse the values perceived by the customers. These values are corresponding with shared values constitute the basis for the culture of societies.

In most of political/practical reports the growth of the sharing economy market value is predicted, with the development of variety of business models. With some caution one could put a hypothesis that the cross-cultural differences would play less role in the development of sharing economy business models in the future, than demo-graphic or psychographic variables.

Current development sharing economy business models, shows that the traditional sectors of services in hospitality and tourism decreased their revenues while they emphasized their own value delivered to the consumers.

Contemporary start-ups can benefit from sharing. In the practical terms of business it means sharing the working space, create a sharing economy business model (electronic platform) or using electronic platforms to reach new groups of clients. Concluding, there are the following possibilities for start-ups to take the advantage of sharing economy:

- creating your own environment – be part of the sharing economy ecosystem (as a general rule for the new-born start-ups),
- working as independent worker use electronic platforms,
- using kick-start platforms as a way to reach other markets and investors,
- creating an „operator" business model – form all of the possibilities it is the most ambitious challenge,
- being a "local" representative for existing sharing economy platforms.

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Sławomir Olko, PhD - senior lecturer at the Faculty of Organization and Management, Silesian University of Technology. Teaches on the courses of strategic management, strategic analysis, innovation management for the management students. His academic background covers the area of cluster management and knowledge management in industrial clusters and networks. In this area he realized two scientific projects for Polish National Science Center (2008 – 2016). Within the area related to practical solutions for clusters and inter-organizational networks, was an expert in two international projects: CNCB - Cluster and Network Cooperation for Business Success in Central Europe;Clustrat – Boosting innovation through new cluster concepts in support of emerging issues and cross-sectoral themes. In the period of 2010-2012, was a member of group of experts preparing Regional Innovation Strategy of the Śląskie region. Author of more than 70 publications on management, entrepreneurship, marketing and innovation.

TRANSNATIONAL ENTREPRENEURIAL INTERNSHIP PROGRAM

The Project "InnoWomEnt - Innovative Women Entrepreneurs of the Future" included a ***Transnational Entrepreneurial Internship Program*** that took place concurrently at I3P - Incubatore Imprese Innovative del Politecnico di Torino S.c.p.a., Technopark Gliwice and Politecnico di Torino.

Twelve female engineering students from Bursa Technical University have been placed in international start-ups for an internship period of 6 weeks. These students were selected based on their scientific, language and social skills, through series of interviews.

During their internship abroad, the students have been mentored and trained to improve their entrepreneurial, linguistic and soft skills. At the end of the internship the students have been awarded ECTS credits by Bursa Technical University for having completed the programme successfully.

After the internship, each student answered a ***questionnaire*** regarding their experience during the 6-week period of work in the start-ups in Italy and Poland. The nine questions focused on the description of the company where they carried out the placement, the description of the tasks performed during the internship and the technical skills acquired; how they benefitted from the InnoWomEnt internship program from the personal and social point of view, and their ideas about how to encourage girls to study science and become independent entrepreneurs in the future.

The testimonials of the students were all very positive both from the professional development and personal growth point of view. Some extracts from these testimonials are reported in this part.

DUYGU AKIN

Mechanical engineering student

"Throughout the internship I have had the chance to put my engineering skills in practice. The assignments given have advanced our creativity and research skills. I had the opportunity to observe and practice work discipline. Communicating with the founders and employees of the company had given me an insight about every growth stage of a start-up. We have proven female competence in male dominated technological fields by performing the tasks given during the internship in the best possible way."

Internship completed at EMT-Systems sp. z o.o. Centrum Szkoleń Inżynierskic

Technopark Gliwice

GAMZE ATİK

Metallurgy and Materials Engineering Student

During my internship at Sudhara Polska, I have gained knowledge about quality engineering, standards that are used by car parts producing companies and inspections they have to pass. Working at an international environment obliged me to improve my English while putting my engineering skills in practice. During my time abroad, I had to chance to observe and understand different cultures and their perspectives. With this internship program, I became more assertive in communicating and socializing with people from different cultures. I also witnessed that the role of women in economic, political fields and other spheres of social life is changing rapidly. Sudhara Polska is a success of a wonderful female entrepreneur. Witnessing her achievements closely have shown me that women can no longer be prevented from contributing to economy by establishing their own businesses.

Internship completed at Sudhara Polska

Technopark Gliwice

GAMZE KARAAĞAÇ

Mechatronics Engineering Student

The engineering education and theoretical knowledge I gained at school helped me comprehend the objectives of the tasks given. EMT engineers trained us on engineering programs and practical skills demanded by the industry to help us complete our tasks. This internship in a different country and culture, allowed me to observe different engineering approaches, practice my English and aided in my personal development. I had the chance to talk and learn from experiences of the founder of EMT. Now, I am aware of the risks I might encounter in my business life and know how to cope with them.

Internship completed at EMT-Systems sp. z o.o. Centrum Szkoleń Inżynierskich

Technopark Gliwice

AYŞEGÜL KAYMAZ

Civil Engineering Student

My expererience at the Polish Green Building Council led me to understand and accept responsibility to improve life for future generations in a sustainable way. The ecological problems such as global warming, climate change, thirst, environmental pollution and rapid depletion of natural resources makes green buildings – once a luxury - a necessity. By this internship, I travelled and lived alone for the first time in my life. I advanced both in academic and personal level. Seeing that I can stand on my feet in a different country has increased my self-confidence. Besides, working among people from different cultural backgrounds with unique perspectives have helped me gain a new vision for life and my future. Now, I think and aim green for our future.

Internship completed at Polskie Stowarzyszenie Budownictwa Ekologicznego

(PLGBC – Polish Green Building Council)

Technopark Gliwice

ÇAĞLA ZAFER

Chemical Engineering Student

Thanks to my internship at ATM, I have gained knowledge on computer programs used for designing machines and had chance to make various drawings with these software. I understood the importance of organizational skills, work discipline and efficient use of time. I believe the success of this company lies in sincere communication and friendship among employees. I observed people greeting each other most sincerely every morning when they arrive at work. This internship program have given me the confidence, encouragement and training to think of starting my own venture when I graduate, instead of searching for jobs.

Internship completed at Advanced Technology Machines sp. z o.o. sp.k.

Technopark Gliwice

FATMA NUR BEDEL

Metallurgy and Materials Engineering Student

Thanks to my internship at SYSDEV, I had the opportunity to gain information on structural and environmental monitoring, which is totally new to me. As Turkey is located in an earthquake region, the measures to be taken against earthquakes must be studied more effectively. Now, I know that environmental monitoring is extremely important in planning for future and taking precautions. I would really like to help my country plan its future and 'keep an eye on our world'.

Internship completed at SYSDEV Srl

I3P

KÜBRA SENA KAZAN

Chemical Engineering Student

Through my internship at SLH I have seen real-life applications of processes and reactors that I was taught at school. I witnessed that science can unite people from different cultures and backgrounds on a common ground. I learned that in order to achieve success, I must fight troubles with perseverance and never give up. This internship experience has helped me understand that a women can achieve anything if she sets her mind to it and believes in herself. Therefore, I would really like more female students to benefit from this program and learn to stand on their own feet.

Internship completed at SLH S.r.l

I3P

TUĞÇE KES

Environmental Engineering Student

Monitoring amount of precipitation is very important in terms of taking measures against overflow, drought and flood. My internship at Waterview had given me insight on monitoring, estimation and calculation of rainfall density by from photographic data. At Waterview, I was impressed by the work discipline which inspired everyone to work harder. The program gave us a chance test our scientific and soft skills, such as foreign language proficiency, and improve them. At our regular meetings with Norberto Patrignani from I3P, we looked into achievements of female entrepreneurs in technological fields and those success stories have given me the motivation and self-belief to pursue my goals.

Internship completed at Waterview S.R.L.

I3P

TUĞBA ÖNENÇ

Metallurgy and Materials Engineering Student

During my internship at Beond, I had the chance to work on physical and microstructural properties of materials, design and development processes, and market analysis of products. I have closely witnessed the transformation of innovative ideas into commercial products. This real-life experience helped me realize that success is not related to gender, but hard work and self-motivation. Through this internship program, I understood the importance of approaching the problems from different angles to reach rapid solutions.

Internship completed at Beond S.r.l

I3P

SELİN ÖZTEBER

Civil Engineering Student

During my internship at Enerbrain, I realized the importance of smart and sustainable construction. We all need to retrench our energy consumption or use it most efficiently to save our resources. As I feel responsible for the well-being of my planet I decided to pursue a career focused on building and designing energy efficient structures. This internship program gave me new horizons by introducing me to new people and environments.

Internship completed at ENERBRAIN

I3P

ECE SÖZBİR

Chemical Engineering Student

My internship at the Technology Transfer and Industrial Liaison Department of Politecnico di Torino had given me the great advantage of working as a volunteer at the European Innovation Academy 2017. European Innovation Academy is a 2-weeks long intensive program that brings entrepreneurs and students together for a world-class mentorship. I had the opportunity to attend seminars given by world-known entrepreneurs. I was held responsible for the international platform. Being able to help people from all around the world has improved my self-confidence. I witnessed that every task could be tackled with ease, when you work with a team spirit. I had the opportunity to work with a very dynamic, responsible, helpful and professional team. The team had been extremely patient with me and tried their best to ensure that Ilearn as much as possible.

Internship completed at the Technology Transfer and Industrial Liaison Department (TRIN) – Politecnico di Torino

BERNA TOPRAK

Chemical Engineering Student

During my time at EnerPaper, I was informed about the production of insulation material from wastes. I had the chance to see the production process of Italy's oldest cardboard manufacturing factory, Cartiera Dell'Adda. I witnessed and adapted to the intensive work of young entrepreneurs. I believe that a society could progress only if women gain their economic freedom and take their part in fields of science and technology. In this sense, girls must be encouraged to become entrepreneurs and given special trainings. The trainings we received at this internship program has taught me the steps to follow in order to establish an innovative company and realize my dreams.

Internship completed at EnerPaper S.r.l.

I3P

Appendix

ORGANIZATIONS PARTICIPATING IN THE "INNOWOMENT" PROJECT

Bursa Technical University

Bursa Technical University was founded as the fifth technical university in Turkey and the second state university in Bursa in accordance with the decree of the Council of Ministers to specialize on certain technological concepts, such as 'Robotics and Smart Systems'.

Bursa, which is one of the most industrialized metropolitan centers in the country, is located in Marmara Region within close proximity to ports and railways. Bursa is considered as the center of the Turkish automotive industry with its 18 organized industrial districts. The textiles, rubber, furniture and food industries are equally strong in the city.

Founded in one of the most industrialized cities of Turkey, the priority of the university is to educate students to become competent engineers and independent researchers. The university comprises six faculties (Faculty of Engineering and Natural Sciences, Faculty of Architecture and Design, Faculty of Forestry, Faculty of Humanities and Social Sciences, Faculty of Maritime Studies and the Faculty of Communication), two institutes (Graduate School of Natural and Applied Sciences and the Institute of Social Sciences), and a School of Foreign Languages. A range of programmes are taught in English, and the University hosts international students.

The education offered is rigorous and its quality is maintained by hard work of international lecturers. Bursa Technical University envisions itself as an international institution with the objective of internationalization across all fields, from activities to student/staff matters. Being new brings the advantage of structuring itself in accordance with European Standards. Flexible in establishing policies and curricular activities from fresh, university adopts Bologna Policies and ERASMUS activities with ease.

University gives significant importance and support to higher education. Co-operative projects and research play a key role in the development of research institutions, therefore staff and students are encouraged to build collaborative partnerships with institutions abroad. Bursa Technical University is an equal opportunity institution committed to diversity of people, thought, opinion and social inclusiveness.

Bursa Technical University recruits staff and students solely on their individual merits - independent of gender, race and religion. University promotes the gender equality in all activities. University adheres to regulations to create an environment where student and staff with disabilities can fully participate in all activities. Faculty and staff has been chosen from those with the background and capability to reach these preset goals.

Bursa Teknik Üniversitesi

Mimar Sinan Mahallesi, Mimar Sinan Cd., 16310 Yıldırım

Bursa, Turkey

http://www.btu.edu.tr

"Technopark Gliwice" Science and Technology Park

'Technopark Gliwice' Science and Technology Park is a modern centre of academic business support. The company came into being in April 2004 and it was founded by the three shareholders: the City of Gliwice, the Silesian University of Technology, and Katowice Special Economic Zone. The main activity of the park is creation and promotion of innovative and advanced technology companies and transfer of innovative technologies from the Silesian University of Technology and R&D units to small and medium-sized enterprises.

The area of Technopark Gliwice is around 2 hectares and it includes 2 modern buildings with more than 4000m^2 of surface, most of which is used for rental premises for modern enterprises.Currently Technopark Gliwice render services for 75 innovative companies. Several of them are representing the high level of technology, but the vast majority of them are newly created initiatives – a companies whose owners or employed persons are mostly university graduates, mainly from the Silesian University of Technology. Technopark has a well-developed offer for students, university graduates and entrepreneurs. The proximity of the Silesian University of Technology, access to modern, well-equipped premises and innovative devices, as well as numerous training and specialized consultancy run by qualified coaches, those are only some of the advantages of our institution.

Among services addressed to enterprises you can find innovation audits, mentoring and consulting packages and the opportunity to join the Virtual Business Incubator, which allows to register your company at a prestigious address without necessity to rent a room. In our park we focus on supporting academic entrepreneurship. Extensive cooperation with various science and technology institutions, universities, science parks, and foreign organizations, as well as a number of projects that have been realized, confirmed the role of the park in the development of entrepreneurship not only in our region.

Technopark Machine Park enables us to offer specialized services such as the production of machines' elements and devices using methods of Rapid Prototyping, coordinate measurements or waterjet machining of objects – in 3D, and 3D design using CATIA and Solid Edge software.

One of many initiatives of Technopark Gliwice is The Day of Science and Industry, which is organized once a year since 2009. The idea behind the event is to present the latest achievements of innovative companies, universities and R&D units from the Silesian region, in the form of experiments and interactive projects. The project aims to contribute to the promotion of technological innovation and research among Silesia residents. Moreover, it is a great opportunity for the representatives of science and industry to meet and to establish cooperation.

Technopark employees have several years of experience in the field of academic entrepreneurship support. Our institution constitutes an extensive, constantly extending web of contacts and relations between companies operating in different areas. It is also

a cooperation platform between science and business.Moreover, Technopark has an extensive knowledge about Silesia Region Innovation Strategy and policy. We are a partner of Marshals' Office of Silesia Voivodeship within regional specialized observatories. We are responsible for ICT observatory delivering actual knowledge about ICT sector in our region. We identify, monitor and forecast ICT trends. We also render services such as audits and trainings for companies and local government.

"Technopark Gliwice" Science and Technology Park

Konarskiego 18C, 44-100 Gliwice, Poland

T: +48 32 335 85 00; info@technopark.gliwice.pl

www.technopark.gliwice.pl

I3P - The Innovative Companies Incubator of Politecnico di Torino

I3P is the innovative companies incubator of Politecnico di Torino and is one of the most important university incubators at the European level. Founded in1999, since now I3P has supported the creation of more than 222 technology-based start-ups in different sectors: ICT, Cleantech, Medtech, Industrial, Electronic, Automation and Social Innovation.I3P mission is to promote the creation of innovative high-tech start-ups, by providing business premises, strategic and specialist consultancy and a network of investors, partners and potential customers.

I3P offers its support to innovators coming from the Politecnico di Torino (professors, researchers, PhD and students), and to innovators coming outside the academic world, both at Italian and international level. Since its foundation, I3P has contributed to the creation of an interesting ecosystem, whose peculiarity is the capacity to generate a good equilibrium between technological spin-offs from the academic research and start-ups coming from "the market", with more entrepreneurial competences and a stronger propensity to the market.Moreover, more and more start-ups are spin-offs of medium and big companies that want to launch to the market "non-core" projects and choose I3P as the ideal place where accelerate the development of their projects, by finding lot of competencies in the "Cittadella Politecnica" and opportunities in the services offered by I3P (consultancy, coaching, support to fundraising and business development).

In 2011, I3P launched TreataBit, a pre-incubation program designed to support the rapid growth of digital projects based on the lean start-up methodology. Since now Treatabit has supported more than 376 business ideas: about 268 projects are online and more than 118 projects have become start-ups. In 2017, 597 business ideas have been hosted, 123 entrepreneurial teams have been supported in the start of their business, 35 new start-ups have been created and 17 of these have been included in the incubation program.

In the last 3 years I3P has increased its capacity of attracting start-ups: in particular, in year 2015 the increase has been +48% in comparison with year 2014 and in year 2016 the increase has been +72% in comparison with year 2015. This shows that I3P has become a key focal point in the Italian ecosystem.From year 2011 to year 2017 the number of start-ups supported in the incubation program has increased from 136 to 222. The total employment in the 163 active startups is about 2100 employees and the total turnover is more than 114 M€ (in 2016). The total investments in venture capital received by I3P start-ups is about 58,3 M€ (from year 2007): 8 M€ in 2016 and 9 M€ in 2017.

Each year I3P promotes the "Start Cup Piemonte Valle d'Aosta" competition, which is the most important regional business plan competition at Italian level. Moreover, from 2011 to 2014 I3P has assured the role of secretary for PNICube, the Italian association of University Incubators. Each year PNICube promotes the "Innovation National Award" (the most important Italian business plan competition, with more than 3400 participants and 1100 business ideas) and the "Italian Master Start-up Award".

I3P has developed an important experience in the definition and implementation of acceleration programs such as Treatabit.com. Focused on digital start-ups, in 5 years Treatabit has attracted hundreds of projects, by giving support to 276 business projects and helping the creation of 103 new start-ups. Some other examples of acceleration programs are the ones in partnership with big companies like Microsoft Italia (Biz&Dev Startup) and Intesa Sanpaolo (FoodIncubator).

In all these cases, I3P has demonstrated to be a good and skilled partner in order to start the experimentation and to develop the program in the following steps. I3P has offered an unique and specific value proposition which has attracted start-ups according to the strategic objectives of the partners. In particular, "Biz&Dev Start-up" has been used by Microsoft like a standard for other local initiatives.

At this moment, I3P has become ad advisory partner for Italian and international universities and public institutions giving support to start-up creation and acceleration programs.

I3P is a publicly owned company whose founding partners are: Politecnico di Torino, Città Metropolitana di Torino, Città di Torino, Camera di Commercio di Torino, Finpiemonte and Fondazione Torino Wireless. It is one of the first Italian incubator to be designed as "Certified Incubator" ex. Law 221/12.

I3P is one of the main promotor of incubation and start-ups support programs, and its activities are in synergy with the global economic and development strategies at local and national levels. In this way, I3P is also a key actor in the technological transfer domain, both of Politecnico di Torino and of other important research centres. Its focus are: technological innovation, research, social innovation and innovative entrepreneurship.

I3P – Incubatore Imprese Innovative del Politecnico di Torino

C.so Castelfidardo 30/a 10129 Torino

https://www.i3p.it/

Politecnico di Torino

Politecnico di Torino (www.polito.it) was founded in 1906 and has its roots in the Technical School for Engineers created in 1859. It is internationally ranked among the most important universities in Europe for engineering and architecture studies, with 33,000 students (out of which 15% are international students coming from over 100 different countries).

Politecnico is a center of excellence for education and research in engineering, architecture, design and planning and it works in close cooperation with the socio-economic system. It is a comprehensive Research University where education and research complement each other and create synergies in order to address the needs of the economic system, of the local community and, above all, of its students.

Politecnico is committed to a strong internationalization process of its teaching, research and technology transfer activities: not only does it work in cooperation with the best universities and research centers in world, but it has also been signing agreements and contracts with important international corporations, as well as local businesses, meaning to be for the latter a focal point for innovation.

Politecnico di Torino

Corso Duca degli Abruzzi, 24

10129 Torino

www.polito.it

The Silesian University of Technology

The Silesian University of Technology (SUT), is the oldest technical university in the region and one of the most prestigious in Poland. It was established in 1945 as a scientific and educational facility for Upper Silesia, the most industrialized region in Poland, and one of the most industrialized in Europe. For over 70 years of its history, it has always been a public institution, playing a cultural and opinion forming role in the region.

15 educational units of the University – 13 faculties, one college and a scientific-didactic centre – currently offer almost 60 study programmes and about 200 specializations, including the whole spectrum of engineering studies. Aside from technical programmes, candidates may also study administration, business analytics, mathematics, sociology and management – including project management – as well as foreign languages and pedagogy.

The Silesian University of Technology occupies leading positions in both national and international rankings. It ranked 5th among technical universities and 13th among all universities in Poland in the "Perspektywy" Educational Foundation Ranking. Two study programmes: environmental engineering and logistics were considered the best in Poland, which allowed SUT to rank 4th in the whole country in terms of engineering study programmes. In the SCImago Institutions Ranking (SIR), an international classification of higher education institutions, Silesian University of Technology was awarded the 4th place in Poland and 17th in Eastern Europe.

Nowadays, SUT educates over 20,000 students at all three levels of study: Bachelor (and Engineering), Master and Doctoral studies. The Silesian University of Technology offers 11 programmes conducted in English.Until now, the Silesian University of Technology promoted over 180,000 engineers, over 4,500 doctorates and almost 900 postdoctoral. Graduates of Silesian University of Technology often occupy managerial, directorial and other high positions in industrial corporations, which can be proven by numerous rankings conducted by independent research institutions.

As a prestigious European technical university, the Silesian University of Technology hosts innovative research and development activities, and educates highly professional staff for the knowledge-based society and economy. It also actively stimulates the growth of the region and the local communities. Due to the constant improvement of processes and organization, the university is a friendly and open place for the academic community, in terms of work and development.High position and prestige of the university are built through self-improvement, partnership and cooperation of the employees, students, PhD students and the social and economic environment. These conditions favour creativity, innovativeness and transfer of technologies.

The University is very active in regional activities related to development based on knowledge, technology and innovation. The representatives of SUT took part in the preparations of Regional Innovation Strategy (RIS) of the Śląskie Region for the years 2013-

2020, defining the smart specialization of the region and preparing the RIS implementation plan.The University supports students and academic staff in entrepreneurial activities: starting-up own business and commercialising knowledge. In this area the following units actively support entrepreneurial activities:

- Centre for Innovation and Technology Transfer – supports the processes of formal technology transfer from the university to companies (including start-ups),
- Academic Entrepreneurial Incubator – supports students in starting-up business, providing consultancy in: managerial, organizational, marketing, financial and personal areas.

In the area of academic entrepreneurship SUT cooperates with Technopark Gliwice which is located on the University's campus. Studies in the area of entrepreneurship and management are conducted on the Organization and Management Faculty located in Zabrze. Students of other fields of studies, interested in starting up their business can participate in courses and training in entrepreneurship provided by Academic Entrepreneurial Incubator or Student Career Centre.

Politechnika Śląska

Akademicka 2A, 44-100 Gliwice, Poland

https://www.polsl.pl

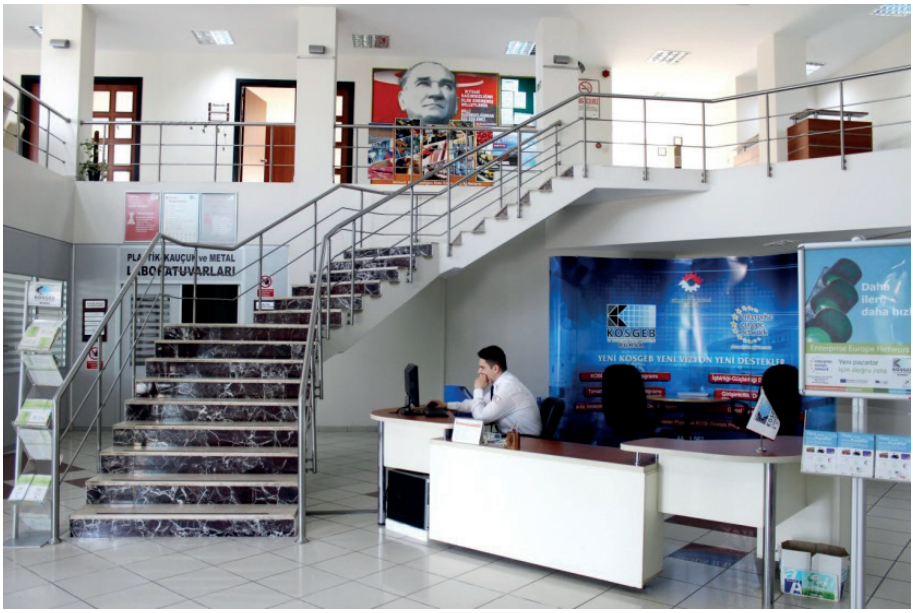
KOSGEB (Small and Medium Enterprises Development and Organization)

KOSGEB (Small and Medium Enterprises Development and Organization), established in 1990 by a special law, is a nonprofit, public organization responsible for the growth and development of SMEs in Turkey and functions under the Ministry of Science, Industry and Technology.Its mission is to increase SMEs' share in economy by spreading culture of entrepreneurship and support development and competitiveness of SMEs.

KOSGEB communicates its support and services to SMEs through 4 different elements: Support Programs, Funding Sources (grants, loan interest support), Laboratory Services and Information and Referral Services. Entrepreneurial trainings are offered in cooperation with chambers, business associations, foundations, municipalities and universities as part of the Entrepreneur Support Programme. Upon completion of these programs successfully, trainees receive the right to apply for grants and loan interest support.

KOSGEB provides its services to SMEs through central or provincial directorates. KOSGEB Bursa is one of the biggest provincial directorates of KOSGEB considering the amount of financial support it provided. KOSGEB Bursa directorate organized more than 200 Entrepreneurial training programs for more than 5000 trainees in cooperation with different organizations. KOSGEB Bursa has also consulted more than 500 new startups and gave financial support (both grant and interest-free credits). KOSGEB Bursa Directorate has been serving as the project coordinator of Enterprise Europe Network East Marmara as part of the call for the European Business Network to be launched within the COSME (Competitiveness Program for Enterprises and SMEs).

KOSGEB is the member of World Association of Industrial and Technological Research Organization (WAITRO) and International Association of Science Parks (IASP). KOSGEB's efforts to encourage entrepreneurship and to help SMEs improve their skills and technology have been supported by the international institutions, such as UNDP/UNIDO (United Nations Development Program/United Nations Industrial Development Organization), WASME (World Assembly of Small and Medium Enterprises), ILO (International Labor Office), World Bank and OECD (Organization for Economic Cooperation and Development).



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