

POLISH STARTUP ECOSYSTEM: A COMPARATIVE STUDY

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Abstract - This study attempts to investigate Polish startup ecosystem and compare its main features with other European countries. The specific problems of Polish startups are connected with the relatively rare acquisition of external support, despite the growing availability of financing and progressing legal changes to support young entrepreneurs under the "Plan for Responsible Development". Most likely it has a socio-cultural background, affecting lower confidence and greater conservatism of Polish startups.

Keywords - startups, startup ecosystem, entrepreneurship, Polish startups

I. INTRODUCTION

Startups can be defined as "human institutions designed to create new products and services under conditions of extreme uncertainty" [Ries 2011] or broader as organizations created for the purpose of repeated search and scalable business model according to Steve Blank.

Startups are an increasingly important element of modern economies, they also constitute the policy objective supporting the development of a knowledge-based economy in less-developed countries, because they are perceived as a chance to catch up with innovation leaders. While the development of domestic corporations that conduct research and development activities (R&D) often requires decades, startups can develop even within a few months. Startups are at the same time very innovative companies, often cooperating with, for example, universities or individual researchers to conduct innovation or R&D activities. No wonder that the potential of startups was also noticed in Poland and their role in building an innovative economy was underlined in the latest development strategy: "Strategy for Responsible Development". The document also presents the proposals of numerous instruments that were intended to support Polish startup ecosystem and enable a dynamic growth of their number in Poland as well as facilitate their scaling-up process.

The aim of this study is to analyze current situation of Polish startups and assess the Polish startup ecosystem in the context of selected European countries. As some of new instruments announced in "Strategy for Responsible Development" have already been launched also a preliminary assessment of their functioning will be included in this article. The following analyses were based on statistical data, strategic documents and official announcements from Polish Ministry of Investments and Economic Development [former Ministry of Economic Development] and also statements and interviews given by representatives of Polish startups and people who once were founder of a startup.

II. POLISH STARTUPS CHARACTERISTICS

In 2015, there were 2,432 startups in Poland, and in following years a number of 2700 was reached. Around half of them provided ICT solutions and solutions supporting digital transformation. This wasn't their only field of activity: over 30% declared working in creative industry and multimedia solutions and over 12%: technologies of optimization of the use of energy and RES. Most of them operated using a B2B model and were founded by young teams of 25-35-year-olds. Average age of Polish startup is 2 years, which makes them young in comparison with 2.4 years EU average [ESM 2016]. At this stage of development startups needs for funding may still be relatively low, yet almost $\frac{3}{4}$ of startups report to be at the development stage, when the product or service is already launched to the market. It can be assumed that at this stage their source of financing shifts from personal funds of the founders to money from current operations. The percentage of Polish startups not showing any revenues is below 13%, which means the vast majority brings profits.

The majority of startups in Poland are still focused on the domestic market, which is a main difference between our country and other EU economies, especially small countries like Sweden or Baltic republics. However, while not seeking clients outside the country Polish startups hire specialists from abroad, undertake international cooperation and participate in foreign acceleration programs. Internationalization may concern many aspects and in majority of Polish startups do not differ from the EU average.

In 2017, 57% of startups selling only in Poland were seeing this as an opportunity to try their hand first on the local market. This might seem to be a right way to start a business relatively safely, but it is a scale of action that determines the success of startups, and therefore they should be focused on global operations from the beginning. By definition, the business model or product/service offered by startups should be scalable, and therefore not based on conditions

specific to a given economy. Otherwise, they might be forced to limit their activity only to the domestic market and to expose themselves to foreign competition from entities offering similar solutions, but on a larger scale. In subsequent editions of research on Polish startups, the number of self-financing entities decreases, while the number of those cooperating with business angels is growing, but still 62% of Polish startups do not use any form of external financing. This situation might have its origin in undeveloped funding system. Number of business angels per 1 million citizens in Poland is only 4, while in United Kingdom 44, and percentage share of venture capital investments in the GDP 0,005 which is incomparable with 0,284 in USA or 0,383 in Israel. On the other hand availability of public support is far better as there are both national funds and cohesion policy programs designed especially for startups.

In Poland many startup founders do not consult their ideas for fear of potential theft, which later on leads to attempts to implement misguided visions and therefore market failure. Before launching new products or services it is crucial to talk to people in the industry, potential users and investors (as startup owners state themselves), as it allows to estimate market needs and the possibility of obtaining funds to satisfy them. Otherwise conservative Polish startups in this area are at a high risk, because of barriers that can be defined as socio-cultural.

III. POLISH STARTUP ECOSYSTEM ANALYSIS

Startups do not arise in a vacuum and do not get financing easily. For their emergence and development, an ecosystem is needed. A start-up-friendly environment needs to cover several different areas, from human and social capital, through institutional environment and legal regulations to the financing [Deloitte 2016]. Startup ecosystem includes: business environment institutions (BEI), government and local government administration, scientific and research units, private entities financing startup projects (including business angels, banks, venture capital funds (VC), public and local government institutions).

An important element of the startups ecosystem, most likely having a stronger impact on their market success than financial support, are acceleration programs. Startup accelerators have been operating in the world for about a decade. According to Seed-DB one can find 234 such initiatives. First of them Y Combinator, founded in 2005 in Mountain View, invested over USD 3 bn in 842 companies. Some of these companies are well known: Dropbox, Airbnb, Reddit, Weebly. Silicon Valley remains a role model, to which everyone aspired shaping their startup ecosystems. However nowadays Europe is looking for a model to support startups, which do not

constitute imitation of the actions taken in the United States [Can European...]. The role of national specificity is underlined more and more often in relation to startup ecosystems, which affects the strong diversification between individual economies of the European Union.

However, diversity is increasingly often understood as the strong side of Europe in compaction to United States, as each country can find a different startup specialization. Poland should also find its own model of startup ecosystem, despite the fact that we can still learn a lot from other European countries. In Poland, an important aspect of the startup ecosystem is its low level of development, especially with regard to market-based funding institutions. The question arises whether poorly developed networks of business angels and venture capital decide on the mentioned above choice of startups by their own funds? Not necessarily: the market for venture capital and business angels is growing at a similar rate as the same startups and larger companies relatively quickly have the ability to attract investors abroad.

When it comes to startups two most successful EU economies are: Sweden and United Kingdom. UK benefits from its leading position, attracting capital and specialists from abroad to additionally increase the potential of its startups. As an example of such activities can be used entrepreneurial visas, of which United Kingdom benefited greatly before other EU countries managed to introduce similar instruments.

In the case of Sweden, cultural factors are very favorable for startups: a low level of avoiding uncertainty and high social trust facilitates both setting up new companies, attracting investors as well as clients willing to buy innovative products and services. Polish startups are dealing with a different environment, not only because of the fact that our startup ecosystem is much less developed. Also economic, social and even cultural conditions are different, which affects the behavior of startup founders and the entire ecosystem. Social capital is the weakest element of the Polish startup ecosystem. This manifests itself in a low level of trust, lack of cooperation skills, risk aversion and negative attitude towards failure and also people who have failed in their previous entrepreneurship. There is a lack of openness to sharing knowledge and involvement in social life. Poland lacking social capital, at the same time has a highly valued human capital, for example computer programmers. Among young, well-educated polish entrepreneurs there is a great potential for startup growth. Human capital, however, is not fully used in Poland, especially in relation to founding new companies. On scientific grounds, this is related, among others, to the lack of adequate education for entrepreneurship and business culture, as well as the lack of social support and trust for entrepreneurship [Wach, Wojciechowski 2016].

Polish startup ecosystem is also affected by European Union policies. Both those intended only for Poland

and available to all member countries. For example European Commission is promoting regulatory harmonization, Erasmus for Young Entrepreneurs, and spreading e-skills. Moreover there are also many EU-wide support instruments for startups. For example, as part of the Horizon 2020 Programme there are SME Instrument and the SME Initiative. European Union also promotes expansion of public finance initiatives supporting startups and SMEs in member countries. The above mentioned are only examples of EU activities aiming at supporting European startup ecosystem. Despite existence of instruments including financial support for startups, business angels and venture capital, that Polish startups can benefit from, lack of domestic capital remains a barrier as European financial market remains fragmented with differences in regulations. Therefore EU members willing to develop strong startup ecosystem mostly rely on their own policies and funds, which they devote more and more to various support programs. In majority of the European Union countries, the support instruments for the ecosystem of startups are subject to planning in a perspective of at least five years, while in Poland, often in spite of the availability of cohesion policy funds which are granted for a seven-year period, the planning concerned only the nearest competition, which translates into a semi-annual planning period. This changed only recently, when the program for creating accelerators was allocated PLN 60 million in advance. That is yet incomparable to five-year Hungarian plan consisting of €550 million worth state-funded capital programs [ESM 2016].

IV. EVALUATION OF STARTUP SUPPORT POLICY IN POLAND

In Poland, both programs supporting the innovation of the economy and the SME sector from the moment of accession to the EU are dominated by cohesion policy under which support was granted and goals were set for the funds to be allocated [Szmigiel 2011]. In the 2004-2006 programming period, the aid was granted for the overall development of entrepreneurship, then in the period 2007-2013 a greater emphasis was put on innovative enterprises, and in the 2014-2020 period the companies that benefit from R&D and start-up activities are mainly supported. Respectively in Polish strategic documents, the issue of supporting startups is gradually replacing more general category of supporting the SME sector. It has to be stated that Polish startups have had access to both EU support instruments addressed to the entire SME sector and the domestic business angels and venture capital sector. Still, both sources of potential funds are rarely used, and the Polish business angel and venture capital sector have so far been underdeveloped due to the lack of key legal solutions. Therefore, announcement of the "Strategy for Responsible

Development" regarding support for startups are considered a major change, which was emphasized, among others, by the representatives of the Startup Poland Foundation [startuppoland.org]. Seven out of ten postulates included in the foundation's program declaration, were included in the strategic document and is to be implemented within its framework. Foundation postulates were as follows [innpoland.pl]:

1. Promoting a culture of investing in startups.
2. Consultation with the public sector on the subject of legislative changes supporting the development of the startup ecosystem.
3. Increasing the availability of data collected in public offices.
4. Creation of the position of Chief Technology Officer (CTO) at various levels of administration - from the government to the local government.
5. Increasing the attractiveness of Poland for specialists from outside the EU.
6. Entrepreneurship being a subject in schools from the earliest years, conducted by trained teachers with the support of business practitioners.
7. Better and more effective incentives to create "schools for startups".
8. Simple procedures for transferring public funds.
9. Favorable mechanisms for business angels.
10. Creating a support system and procedures for investing in startups.

"Strategy for Responsible Development" also announced several changes in the law designed to create a new type of company suitable for startups and new financial instruments designed to increase the scale of venture capital financing, but now they are still in the phase of social consultations. On the other hand, with the support of funds from the EU cohesion policy, several instruments of direct support and support for accelerators have been already implemented. Unfortunately, the issue of entrepreneurship education and postulates were not included in the strategy. Even the European Commission points at right entrepreneurial skills, knowledge, and attitude that can be obtained through education, as a first step to starting a business. However, the remaining issues should be reflected in the government's actions aimed at increasing innovativeness of Polish economy. In Poland, it is necessary to develop an entire startup ecosystem and in the latest strategy it was planned to take into account the demands of the startups' representatives. Better access to finance would affect the faster development of Polish startups, but the barrier is not so much the lack of funding opportunities, but the unwillingness of young entrepreneurs to use external financing, which can be explained on the basis of the socio-cultural factors.

The key issue should be the noticing the change in the needs of startups and the gradual introduction of support instruments designed specifically for this type of companies. Polish SME sector suffers from lack of capital and, among other things, seeks to raise funds

for the purchase of machinery and equipment in the EU programs for the development of innovation [Szmigiel 2016]. However this doesn't seem to be the case for startups as their needs for external funds are different. That difference is pointed at as a concept of "smart money": consisting of financial support and specific business knowledge which provides some business angels and accelerators. Trying to address these problems under the Scale Up Program, the government allocated PLN 60 m in support, which is supposed to lead to the emergence of around 200 new innovative companies. Each of 10 chosen institutions that received funds has prepared a project of an accelerator dedicated to a specific industry. The Authors of the Scale Up project believed that the combination of the of startups potential with the experience and resources of large corporations, including state-owned companies, will determine their future success. One of the assumptions of the Start in Poland initiative is to build relationships between startup founders and those responsible for innovations in large companies. However, program developers seem to forget about the issues often raised by participants and mentors of international acceleration programs: that the knowledge needed by startups is specific to the type of company, and furthermore may be country-specific. Moreover knowledge about creating startups among managers of large state entities is doubtful alike the motives of co-operation coerced by the government program. Widely discussed in this context is an example of unsuccessful cooperation between Orlen, who resigned from properly functioning Just Drive application, and startup: Itmagination Automotive. In the light of these events, the preliminary assessment of the program cannot be positive, but the accelerators still may be redefined in the future to meet startups needs for business knowledge of selected experts and create a field for unforced cooperation with public sector. Experts of international accelerators point to the specific problems of Polish startups and the fact that the best mentors are specialists from Poland or other Eastern European countries who know the specificity of this region, especially if they were startup founders themselves. Analogous solutions should be introduced in Polish acceleration programs based on the experience of startup founders, both those who succeeded and those who failed to help the next generation learn from mistakes. Further recommendations for startup support in Poland will be presented in the next part of this study.

CONCLUSIONS

Polish startups self-financing might have been seen as independency if it was dictated by a choice of positive motives, such as dominate among young entrepreneurs in Sweden [Szarucki, Eriksson, Larsson, 2007]. Such positive motives include: the

need for independence or personal development, willingness to exploit the market opportunity, achieving work-life balance or turning hobbies into business. Also a desire to earn more money is considered among those positive reasons for founding new enterprises. On the opposite pole there are negative motives that can be seen more often in Poland. These are, for example: unemployment or fear of losing a job or dissatisfaction with a previous job.

It also partly results from the construction of the Polish startup ecosystem and socio-cultural factors influencing the decisions of entrepreneurs and potential supporting institutions. However, regardless of the specific motives of people who do not obtain external financing this issue affects performance of Polish startups and should be addressed by policy means. From the comments of startups founders, especially people whose projects have not been successful, another aspect of this problem arises. Namely, young people creating startups often have to combine work on a project with studies or other job. While the resignation from studies is relatively easy and some people choose the same path as the creators of many companies known today all over the world, the work is a means of subsistence, which is not easy to give up. Entrepreneurs need both means of subsistence and investments in a startup, which often generate significant profits much later than initially assumed. During this period, startups should be able to finance their operations without having to sell, for example, a significant part of shares or even the entire company, which is what Polish startups are afraid of. These problems occur in Poland with a particular intensity, due to the characteristics of the society, which demonstrates lack of public trust and conservativeness, which affects the slower adaptation of innovative solutions. Additionally experience of those founders that have had a startup but for some reason ceased operations should be valued, especially when it comes to acceleration programs. It should be noted that half of EU members treat re-starters on an equal footing with new start-ups [Muller, Devnani, Julius, Gagliardi, Marzocchi 2016], while in Poland policies focus mostly on those who are first-time startup or SME founders. Authors also emphasize the importance of well-functioning second chance regime for SMEs for employment and economic growth in Europe. This is especially important for Poland as the country lacks business culture that accepts the possibility of failure and allowing learning from mistakes. These features of society affect startup performance and should be compensated by means of policy of equality for re-starters, meaning for example equal support schemes. Also European Commission's Single Market Strategy points at the possibility of missing out on the potential contribution to economic growth and employment by entrepreneurs, who may be held back by the fear of the consequences of failure or by actual failure.

However, this phenomenon is difficult to measure, but in the light of other studies it should be assumed that in Poland it occurs with relatively high intensity. The issue of financial support, both direct and indirect for startups, remains therefore important and should be included in Polish innovation policy. Still, focusing exclusively on the issue of financial support for startups leads to overlooking the complexity of startup ecosystem and also its environment influencing behavior of young entrepreneurs. Among others, the features of societies and the socio-economic situation affect the differences in the motives of creating microenterprises [Szarucki, Eriksson, Larsson, 2007, Hughes 2009]. The current programs implemented under the "Strategy for Responsible Development" are still only fragmentary solutions to complex problems. Therefore, the following recommendations for Polish startup support policy can be made:

1. Detailed analysis of the weak points of the Polish startup ecosystem and efforts to overcome barriers to startup development in all areas of the system affected by economic policy.
2. Creating a basis for entrepreneurship and startups through education system supporting creativity and entrepreneurship.
3. Supporting startup internationalization; for example by visa programs and international funding programs.
4. Building social capital; for example by transparent and supportive law in order to increase social trust.
5. Faster implementation of changes in the law announced in the "Strategy for Responsible Development".
6. Strengthening social security for people who risk bankruptcy of their startup in order to increase the level of entrepreneurship among young people.
7. Modeling on the best accelerators that focus on quality, not the amount of support granted and their adaptation to the specific needs of startups.

Although the number of startups in Poland is systematically growing and their needs are better understood by the authorities, changes in the startup ecosystem must be made much faster. As more markets develop and national startup ecosystems in EU countries achieve maturity, more and more countries are starting to compete for the best startups, offering special facilities for transferring their operations to their area. Therefore, Poland must make efforts to also offer startups competitive conditions including "smart money". Otherwise, the startups will not be created and developed in Poland but in other countries that can attract the best talents.

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