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# *A Diagnosis of Polish Start-Ups*

Diagnoza start-upów funkcjonujących w Polsce

**Keywords**: start-up; start-ups' ecosystem; entrepreneur; Polish market

**Słowa kluczowe:** start-up; ekosystem start-upów; przedsiębiorca; polski rynek

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## Introduction

Spreading globalization, numerous civilizational changes, and the necessity of adjustment to current trends, lead Polish entrepreneurs to rely upon novel organizational forms. When establishing their companies, they decide upon structures such as e-organizations, project organizations, network organizations, learning organizations, virtual, fractal organizations, and start-ups. Undeniably, these belong to companies with high risk of failure. On the other hand, they may offer a satisfactory return on investment. Start-ups, whose popularity in Poland has been growing on annual basis, deserve particular attention.

In relation to the above, the objective of the present paper is the analysis of start-ups operating in Poland, and an indication of prospective tendencies for development. The comparison of national and international systems of start-ups will enable deficiencies resulting from establishing such businesses in Poland to be highlighted. Particular attention will be devoted to start-ups established in the Lublin Voivodeship. In addition, Lublin clusters, which constitute the primary aggregate

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of start-ups in the region, will be examined. The article will use secondary sources in the form of reports prepared by other institutions (such as Foundation Startup Poland, Compass, Deloitte).

## 1. Terms and definitions

The definition of the term "start-up" is burdened with several discrepancies and ambiguities. The literature of the subject raises numerous approaches and considerations associated with the issue. According to Blank and Dorf, a start-up may be identified as a temporary organization searching for a reproducible, profitable and scalable business model. On the other hand, a start-up's business model belongs to a pattern filled with suppositions and ideas. The company itself, though, does not possess any clients, and knows little about them [Blank and Dorf 2013, p. 19].

Foundation Startup Poland devised a definition of start-ups convergent with academic and political views. The definition states that such companies belong to enterprises whose key element of business model is based upon technologies and information processing [Skala et al. 2015, p. 10]. A year later, the scope of the definition was expanded to fit the requirements of the foundation's studies. A premise was made that a start-up constitutes an enterprise which meets one of the two conditions: it represents digital technologies (i.e. technologies or information processing constitute one or more key elements of its business models), or it develops new solutions encompassing IT/ICT [Skala and Kruczkowska 2016, p. 12].

On the other hand, in their report titled "The diagnosis of start-ups in Poland", Deloitte states that a start-up constitutes a business which has been operating for no longer than 10 years and with the view of developing new services and products in conditions of high uncertainty. Such businesses frequently encompass the following:

- IT solutions and those supporting digital transformation;
- ICT and multimedia;
- Technologies related to optimization of renewable energy sources and energy consumption;
- Medical and biotech technologies;
- Materials and nanotechnologies;
- Industrial technologies.

As far as Damodaran's considerations are concerned, the most important features of start-ups, termed "young companies", are the following [Damodaran 2009, pp. 4–5]:

- lack of clearly defined history (insufficient financial background, short history of operations or lack of thereof);
- no income (or very low income) and losses resulting from operational activities;
- dependence on borrowed capital (initial capital, founders own capital, EU grants, private investors' capital);

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- significant risk of failure (young entrepreneurs are frequently unable to launch their own products or services on the market).

Undeniably, start-ups need to be associated with an innovative approach towards management, and the application of novel technologies. They pose a considerable challenge for modern entrepreneurs because they are associated with significant risk. However, if the offered products or services become attractive for potential clients, such companies are rewarded with high profits. Polish entrepreneurs have started applying this organizational structure more frequently. They take into account technological advances and focus on developing completely new (original) products or services.

## 2. Polish start-ups vs. international market

According to studies conducted in 2016 by Foundation Startup Poland in cooperation with Warsaw University of Technology [Skala and Kruczkowska 2016], Polish start-ups create unique and valuable jobs. The majority of these start-ups consist of very young companies, at an early stage of identification of potential clients' needs. The fact that 52% of the evaluated start-ups state they generate satisfactory income is noteworthy. This is due to the fact that half of start-ups in Poland are financed with their own capital. On the other hand, companies financed externally utilize EU grants (24%), venture capital (22%), and support of business angels (17%). Studies indicate that ¾ of Polish start-ups develop their businesses by means of their own capital, including sales profits. Unfortunately, only 50% of these generate regular income. 46% have no profit or generate it sporadically. 2% claim they operate a non-profit business.

As far as location is concerned, the greatest concentration of start-ups is located in Warsaw, Cracow, Tri-City, and Poznań. In addition, significant enterprises are located in Wrocław, Szczecin, Białystok, Łódź, Lublin, and Katowice. Startup Poland Report states there were approx. 2,700 start-ups in Poland in 2016 (12% more than in the previous year). The majority of these offer their products and services on B2B basis. European studies indicate that Polish start-ups can be considered young companies (up to 2 years on the market). As far as this criterion is concerned, Poland, as a hub of the youngest entrepreneurs, ranks third in Europe (Romania as the first with 1.3 years, and Italy as the second with 1.7 years on the market).

According to studies, 19% of companies consider hardware as their core business. ¾ of companies deal with production and design. A detailed analysis indicates that 14.2% of start-ups deal with software development and services for mobile devices. 13.8% focus on e-commerce. The majority of start-ups (77%) utilize B2B sales model. Unfortunately, patenting in Polish companies, which is considered as an epitomizing innovation, is very low when compared with European and international leaders. In light of the above, results of studies are surprising. They indicate that a large percentage of start-ups declare patenting, which gives a full picture of innovative solutions implemented. With reference to Polish companies, 14% of

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start-ups (1 in 7) are applying for a patent, or are already enjoying a national or international patent protection.

Studies reveal that national start-ups are rooted in Poland (95.4% of employees and 94.9% of founders are Polish by birth). These results are very high when compared with other EU member states, where percentage values do not reach half of those noted in Poland. Unfortunately, insufficient knowledge with regard to patenting and its benefits is clearly visible. Polish reality has a very long way to go when compared with such powers as the USA or Israel. Therefore, the implementation of R&D projects which would combine experience and knowledge of start-ups and scientists constitutes the greatest challenge of the 2014–2020 EU financial perspective.

As far as export is concerned, international markets constitute the objective for 47% of the evaluated start-ups. Half of national exporters obtain 50% of their profits from international trade. 54% of export encompasses EU member states, and ¼ of companies declare sales to the USA. In turn, sales to Russia are important for 1% of start-ups. Undeniably, the majority of young entrepreneurs plan to expand internationally, and develop their products and services with global market in mind.

When considering the position of Polish start-ups in the world, a reference to 2015 Startup Ecosystem Report is worth making. Silicon Valley leads the ranking, with New York, Los Angeles and Boston following suit. Europe gained significance. London occupied 6$^{th}$ position, Berlin – 9$^{th}$, Paris – 11$^{th}$, and Amsterdam – 19$^{th}$. Unfortunately, Polish locations did not qualify in the ranking.

Main conclusions of the report are the following:

1. Head of the ranking is occupied by Silicon Valley. Bay Area is the region of swiftly developing start-ups dealing with technologies.
2. The most dominant start-ups' ecosystems can be observed in North America and Europe (16 out of 20 positions).
3. The only Latin American start-up ecosystem on the list of 20 is São Paulo (significant VC resources).
4. A noticeable increase in the number of ecosystems in Asia was observed (Singapore advanced from 17$^{th}$ to 10$^{th}$, Bangalore – from 19$^{th}$ to 15$^{th}$).
5. Europe is constantly advancing in the ranking.
6. Poland is still missing in the game.

According to 2016 Deloitte report titled "The diagnosis of Polish start-ups", the maturity of such companies in Poland amounted to 1.93 (1 to 4 scale). The model of the maturity developed by Deloitte encompassed: financing, human capital, social capital, legal regulations, and institutional environment. Poland is relatively successful with regard to the latter two. A detailed analysis revealed the following:

1. Financing for start-ups is underdeveloped. It is clearly a result of low savings in national economy, limited number of venture capital funds and business angels, and the lack of fiscal incentives for investments in start-ups.
2. Human capital in Poland is untapped (despite a considerable number of engineers and students of technical fields of studies) due to low applicability of higher education. In addition, low productivity also poses barriers.

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3. Social capital constitutes the weakest link of Polish start-ups due to low trust, incapacity for cooperation, negative attitude towards failure, risk aversion, reluctance for knowledge sharing.
4. Average friendliness of legal regulations due to unclear tax collection system, and the establishment of businesses being troublesome. Even though public support for R&D is significant, these resources are inefficiently allocated.
5. Average friendliness of institutional environment, which is developed unevenly. Government administration's activity supporting the development of start-ups is visible. However, such assistance is usually short-term and insufficiently coordinated. In addition, business-science cooperation was evaluated as low due to unclear rules of cooperation and lack of incentives.

The primary objective of the evaluated start-ups encompassed the generation of high profit in a short period of time. Every third company focused on achieving significant market position (disregarding profits). Moreover, studies by Deloitte evaluated the influence of start-ups on Polish economy in a few years' perspective. It is predicted that in 2023, start-ups may generate PLN 2.2 billion of added-value, create 50,300 jobs, which will translate into profits of Polish households reaching PLN 757 million.

In light of the above, the development of Polish start-ups may generate numerous benefits for Polish citizens. It will not only contribute to the improvement of Polish economy's financial condition, but also improve the well-being of the society. Unfortunately, much determination, goodwill of authorities with regard to financial support, and development of less rigorous legal regulations fostering the inventiveness of young entrepreneurs, are required.

## 3. Start-ups in the Lublin Voivodeship

The first application of the term "start-up" in media in Lublin occurred at the end of 2013. It accompanied numerous events promoting entrepreneurship and first initiatives facilitating the application for EU grants targeting business development.

Start-ups are only beginning to develop in the Lublin region. Young entrepreneurs gain external financing and integrate while exchanging experience and knowledge. In consequence, the largest concentration of start-ups can be seen in clusters in Lublin. Such organizations develop a network of horizontally and vertically related companies belonging to the same or similar sector, which cooperate or compete with one another.

Unfortunately, there are no start-ups in Lublin which achieved global success. However, constant development of the ecosystem, organization of events, variety of opportunities for finding investors, and political actions (2014–2020 Operational Programme Eastern Poland) bring the region closer to become internationally recognized.

On the other hand, actions taken by the Lublin Municipal Office aim at supporting the ecosystem of young entrepreneurs by focusing on fostering activities of begin-

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ner micro-companies. As a consequence, entrepreneurs have access to knowledge and advice. In addition, the most creative solutions are appropriately rewarded. By cooperating with business environment institutions, the authorities develop support programmes, which include:

- Lbn#Biznes Start – in cooperation with the Lublin Science and Technology Park (169 teams/applicants participated, 20 of them qualified for a series of workshops and trainings). The award (PLN 200,000) went to Care System which combines medicine and IT.
- A 90-day challenge – in cooperation with Foundation Academic Business Incubator. It resulted in the participation of 60 innovative companies in a 90-days' development program designed by the Lublin branch of Business Link.
- Lublin start-up academy – commissioned by the Lublin Municipal Office, implemented by the Lublin Development Foundation. So far, 63 participants have attended the academy. The project is based upon training and information activities for people interested in establishing a start-up or for those who already manage their own companies.

In addition, the Lublin Municipal Office supports clusters and considers them as a significant partner animating business-science cooperation. Lublin Voivodeship offers assistance in operation and establishment of cluster structures. By doing so, it enables promotion on national and international markets. As a consequence, cooperation of organizations representing industry, education, administration, and local-governments is fostered. It translates into regional innovation's growth, improved coordination of tasks among partners and swift knowledge transfer.

There were 16 clusters flourishing in Lublin at the end of 2015 (see Table 1). Three of these were established on initiative of the Lublin Municipality: Lublin Medicine – Medical & Wellness Cluster, Cluster of Advanced Aviation Technologies, and Lublin Biotech Cluster.

Start-ups' ecosystem in the Lublin region is considerably divided and undergoes constant evolution. Numerous initiatives integrating innovative companies emerge. Unfortunately, there is no particular direction for development and uniform specialization, and no events targeting particular branches. At present, the Lublin Science and Technology Park is the institution which cooperates with start-ups the most frequently. The primary objective of the institution is to foster business-science cooperation by effective knowledge and technology transfer between universities and companies. In addition, an Incubator of Technology operates at the Park. The incubator supports beginner entrepreneurs in establishing their businesses. Lublin Design Institute constitutes another support institution. The institute promotes good practices in visual projects. A group of Inno-brokers facilitates transfer of R&D results.

Business Link Lublin is also active in assisting start-ups. It offers access to a co-working office and numerous private offices. In addition, it supports companies with expert knowledge, tools, consultations, and contacts. Software Camp is another institution of interest. It focuses on ICT and offers offices in an excellent

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location (Zana St. in Lublin). Similarly, Lublin IT Incubator supports IT companies. Additional support for beginner start-ups is provided by several business incubators located at various universities in the region.

Table 1. Clusters in Lublin in 2015

| No. | Date of establishment | Name | No. of members (including companies) |
|---|---|---|---|
| 1. | 2006 | Cluster of Restaurant- and Hotelkeepers | 63 (47) |
| 2. | 2007 | Eastern Cluster of ICT | 103 (91) |
| 3. | 2007 | Lublin Wood Regional Cluster in Lublin | 70 (70) |
| 4. | 2008 | Lublin ICT Cluster | 35 (30) |
| 5. | 2008 | Lublin Onion Flatbread | 21 (21) |
| 6. | 2008 | Lublin Cluster of Enterprises | 15 (13) |
| 7. | 2009 | Eastern Cluster of Metals' Processing | 65 (62) |
| 8. | 2010 | Lublin Cluster of Food Industry | 23 (23) |
| 9. | 2011 | Lublin Green Energy Cluster | 40 (34) |
| 10. | 2011 | Klaster-Group.pl | 15 (15) |
| 11. | 2013 | Cluster of Innovation Design and Fashion | 53 (24) |
| 12. | 2013 | Lublin Cluster | 5 clusters |
| 13. | 2014 | Lublin Medicine – Medical & Wellness Cluster | 77 (55) |
| 14. | 2014 | Lublin Cluster of Business Environment Institutions | 16 (5) |
| 15. | 2015 | Lublin Advanced Aviation Technologies | 25 (18) |
| 16. | 2015 | Lublin Biotech Cluster | 26 (16) |
| 17. | 2015 | Lublin Egg Cluster | 8 |

Source: http://www.lublin.eu/biznes-i-nauka/przedsiebiorcy/klastry/?contrast=default [access: 12.03.2017].

Lublin Voivodeship is not well-developed with regard to the number of start-ups in Poland. However, promotion of entrepreneurship and support for the young and creative are highlighted frequently on the market. Numerous institutions facilitating the establishment of a modern business have emerged. Business-science cooperation fosters synergies. As a consequence, the position of Lublin start-ups will improve both in Poland and abroad.

## Conclusions

The present paper concludes that, when compared with other countries, Poland occupies a low position with regard to the development of start-ups. Studies indicate that national social capital exerts the most negative influence upon the development of innovations in organizations. Values which Poles follow indicate a low level of trust, unwillingness to cooperate and share knowledge, and aversion towards risk and failure. In addition, difficulties arising from the way such companies are financed constitute a further limiting factor. However, the government's policy in this respect has become more favorable and encouraging for the development of novel solutions.

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Half of entrepreneurs finance their operation with their own capital, and their main objective is export. The majority of start-ups apply B2B sales model. Unfortunately, Polish start-ups are yet to be recognized internationally.

As far as the Lublin Voivodeship is concerned, it belongs to regions which do not promote novel technologies and innovative solutions effectively enough. It is Warsaw, Cracow, Tri-City and Poznań, which constitute the greatest concentrations of start-ups in Poland. The 2014–2020 programme supporting young entrepreneurs constitutes a significant help for Eastern Poland. Due to assistance offered by numerous institutions, they have the opportunity to enter the Polish market. On the other hand, cooperation with significant R&D centers and universities contributes to the emergence of synergies and boosts start-ups' creativity.

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**A Diagnosis of Polish Start-Ups**

The paper analyses Polish start-ups operating on the market. In addition, it compares international trends, as well as ecosystems of innovative Polish start-ups. Particular attention was devoted to a meagre but ever-expanding market of start-ups in the Lublin Voivodeship. Clusters in the Lublin region, which constitute the main driving force behind the establishment of start-ups and support for young entrepreneurs in the region, were also discussed.

**Diagnoza start-upów funkcjonujących w Polsce**

Artykuł przedstawia analizę polskich start-upów funkcjonujących na rynku. Dodatkowo porównuje trendy światowe oraz ekosystem innowacyjnych firmy start-upowych działających w Polsce. Szczególną uwagę zwrócono na ubogi, lecz nieustannie rozwijający się rynek start-upów w województwie lubelskim. Poruszono także kwestie lubelskich klastrów, które są głównymi ośrodkami napędzającymi powstawanie start-upów i wspierającymi młodych przedsiębiorców w regionie.