

Technology startups generating innovation in the economy as a result of the commercialization of scientific research

Dr Marek Makowiec

Department of Organizational Behaviour,
Cracow University of Economics,
E-mail: makowiec@uek.krakow.pl

The article concerns the issues on science-business cooperation, It often leads to establishing innovative technological start-ups. The definition of start-up was described, the results of the latest research on start-up environment in Poland were presented and some examples of innovative start-ups were shown. The notion of functioning and development of these entities was briefly presented as well as aspects concerning characteristic features of a start-up business enterprise.

Key words: technological start-ups, innovations, scientific research commercialization, technology and know-how transfer, science-business cooperation

Cooperation of science and business in today's world is a necessity if organizations and businesses want to grow and generate innovation in the economy. Of particular importance, therefore, is the concept of "commercialization of scientific research. "This concept is related directly to the issue of setting up and running own businesses – e.g. in the form of a startup.

A startup – is a project phase or a company in which the project is in a transitional phase of commercialization until scaling their activities to the needs of the mass market [Sperczyński, 2014, p. 20]. A startup is a project in the technology industry at an early stage of development, created to solve the problem of a user [Łopusiewicz, 2013, p. 8].

Developing the definitions quoted above, one can indicate that a startup is a concept of a project, a project in various stages of development or a young company, mainly technological, which is developing own product/ products to satisfy market needs, often-creating new demand, creating a new market, often being on the verge of a spectacular market success. What is very important in the context of a startup – it is always associated with the activity-based on online and mobile sales channels.

A startup will not be any new business venture, as a rule, starting a business, the founder of a concrete business has a plan, thought-out vision of development, for identified customers who are often diversified based on different criteria. For a startup, it is most often formed (although this is not a rule) spontaneously. Many online businesses with a global reputation were born in this way, and yet on the market they are doing quite well.

Currently, the number of startups in Poland is estimated to be approx. 2.500., and watching the interest in these entities and global trends, one can assume that they will successively arrive [Duszczyk, 2016, p. 80].

The latest research by Kronenberg Foundation "Young people and the labor market" shows that every fourth student is thinking of starting a business. Specialists from the investment market note that promising young companies are getting investors easier (from large global funds to national business angels). An additional drive can be given by the new EU funds [Duszczuk, 2016, p. 80].

It should be noted that innovative startups, not only are related to the Internet and software development industry. For example, the latest edition of the "Eagle of innovation" in mid-December 2015 was won by the company GeniCore from Konstancin, that bases on their own inventions – specializes in innovative sintering of composite materials. It can become a world leader in the sector, whose value amounts to tens of billions of Euros. This startup has patent protection of their inventions in the EU, Korea, Japan, South Africa, Russia and the United States.

Another example – also in December 2015, four prominent 18-year-olds from the Tri-City (Trójmiasto), operating under the supervision of a biotechnologist, professor Michael Obuchowski, won the investor (Black Pearls VC fund), which will fund their research project. It aims to develop a therapy alternative to antibiotics, which gives a chance to resolve the global problem of antibiotic resistance [Duszczuk, 2016, p. 80].

Polish examples of innovative startups can now multiply. Virtually every industry can identify a very innovative entity. The web portal "Startup Poland Foundation" currently registered already close to 600 startups from across Poland.

Companies at the stage of startup can arise in any field and industry. Most, however, are associated with new technologies.

To the specific characteristics of startup companies included as a rule are (based on [Łopusiewicz, 2013, pp. 8-9]):

- Low start-up costs – the original version of a business idea usually arises in a small group of people who are developing a prototype version of a startup;
- Cohesive and working together team of "enthusiasts", developing a specific project. Such "passionate" people are usually relatively easy to find investors and other valuable co-workers, which in turn may transfer into a financial success;
- Higher than in the case of standardized businesses risk – when one creates a startup there is no assurance that the product will take on the market. It happens that it is formed without a business model that would bring monetization idea. The activity in the startup phase aims to find the optimal business model, which is often associated with the change of strategy (i.e. pivot), that the firm took at the beginning;
- Higher than standard projects return on investment – the most important for a startup is not, as it might seem, millionth investment, but finding the market and gaining a significant number of users involved.

On the basis of the latest report prepared by Deloitte, one can indicate that the key to sustainable development startups in Poland are: funding, legal regulations,

human capital, social capital and institutional environment [Diagnosis of the ecosystem of startups in Poland, 2016, p. 4]. The results of the report indicate that the main area of activity of startups was broadly defined ICT industry (almost half of the cases of researched companies), almost 1/3 of it related to creative industries and media. The main sources of financing surveyed startups were own funds and money from current operations. In the study, there was also a high percentage of startups backed by venture capital funds [Diagnosis of the ecosystem of startups in Poland, 2016, p. 5].

The report also shows that one can observe a very large impact of science on the creation and development of start-ups in Poland. Almost a third of the ideas for this kind of a company came from the earlier research. Every second entity cooperates with the scientific community [Diagnosis of the ecosystem of startups in Poland, 2016, p. 83].

At the beginning people having an innovative idea for a product/ service, wishing to set up a startup should answer questions concerning, among others, who will be their customers?, or will they actually need this, what will be on offer?, how to get to the identified customer?, what action to take in order to provide them with a value?, whether there are sufficient resources (financial, intellectual, human) to achieve this?, in the end – whether they will be able to make money and how much will it cost?

They are rather standard questions on the basis of which the business model of a typical startup is created. The success is written as a rule, to those who quickly get answers to these questions. In this context, it is not so important the role of a particular idea, like the product itself or its quality. Most important, however, is to achieve as soon as possible product-market fit (finding the market and meeting the demand).

Bibliography

1. *Diagnoza ekosystemu startupów w Polsce. Raport, 2016, (red.) M Burnat-Mikosz, Deloitte, Czerwiec.*;
2. *Duszczyk M., 2016, Nadchodzi epoka polskich start-upów, „Bloomberg Businessweek Polska”, nr 1, Styczeń.*;
3. *<http://startuppoland.org/startup> (dostęp: 03.06.2016).*;
4. *Łopusiewicz A., 2013, Start-up. Od pomysłu do sukcesu, Wydawnictwo Samo Sedno, Warszawa.*;
5. *Sperczyński G., 2014, Przygotowanie do wyceny. Startup okiem praktyka, Wydawnictwo Helion, Gliwice.*