

START-UPS' OPINION ON COOPERATION WITH BIG COMPANIES

Terms such as start-ups, cooperation, networking and open innovation could be seen as pillars of knowledge-based economies (KBE). The world's current most innovative economies, which include those of the USA, Finland, and Israel, owe their competitiveness to start-ups. Silicon Valley has become a global model. The concept of a start-up is usually associated with innovation, hence the growing interest in these entities not only from individuals who have an idea for an innovative business or a way to commercialise the results of their research (e.g. the results of their master's or PhD dissertations), but also from regional organisations, and even governments. An excerpt from the preface to Dan Senor and Saul Singer's book (2011), written by Szymon Peres, in which he pointed out that the prerequisites for Israel's success in creating start-ups and innovative economy should be found in human capital, is an illustration of politicians' interest in start-ups as "levers" of economies, and, above all, in the relationships between people. Multiple declarations of support for the development of start-ups have also been made by the Polish government.

In Poland, throughout the last 10 years the number of start-up has increased. The awareness and knowledge of young people (e.g. studying at technical universities) related to this topic is much bigger. But more than half of start-ups with a mature ecosystem have only been operating for up to 4 years, and in Poland for up to 2 years (Arwaj et.al., 2020). The environment supporting start-ups becomes more friendly. The environment (ecosystem) and supporting tools to establish a start-up are more friendly and sophisticated, e.g. the simple joint-stock company as the legal frame of establishment was introduced in Polish law. It has been established since July 2021 and is dedicated for technological start-ups.

To create innovation we need not only a new idea of business and new technology, but also the networks. Joseph Schumpeter, Michael E. Porter, and other authors (including Kastle, Steen, 2015) indicated that networks favour the creation of innovation. "Innovation happens in networks – networks of the brain, networks of people and networks of firms" (Kastle, Steen, 2015, p. 117).

In 1973, Mark Granovetter studied the strength of connections in networks and found that weak ties promote information transfer and are a source of research. On the other hand, strong ties and established connections probably convey redundant information (Kastle, Steen, 2015, p. 109). Information, often obtained as a result of new collaboration, is an inspiration for innovation. Hence, as Kastle and Steen write, network structures are a determinant of innovation, and the development of the system (and implicitly also of enterprises) takes place through innovation (Kastle, Steen, 2015, pp. 109, 117). Shan et al. (1994) examined the relationship between cooperation among companies and the innovations created by start-ups in the biotechnology industry. Several control variables were associated with collaboration and innovation. However, the results only confirmed that cooperation among companies influences innovation. Dittrich et al. (2007), and Dodgson (2015) highlight the important role of cooperation in terms of strategic alliance of venture capital, R&D consortiums, a partnership between universities and industry and between government and industry in creating innovation, even in companies that are already technologically advanced. Over the past 20 years researchers have found that cooperation has taken place in IT, transport, chemical (Schilling, 2009), biotechnology, and new materials sectors (Rothaermell, Deed, 2004), (Faems et al., 2010). Dodgson (2015) analyses collaboration from the point of view of enterprise and innovation. He attempts to identify its contribution to complementarity, encouraging learning, and developing the organisation's potential, as well as dealing with uncertainty and complexity. Conclusions from the research of Joel Baum, Tony Calabrese

and Brian Silverman (2000) carried out for the biotechnology sector indicate that participation in alliances as well as the size of the network and the effectiveness of its operation have a positive impact on start-up development.

Reports published by the Start-up Poland Foundation paint a picture of growing cooperation between start-ups and corporations. In 2019, almost 40% of start-ups collaborated with corporations, which is a 10% increase compared with the previous year (Krzysztofiak-Szopa, Wisłowska, 2019). In addition, 75% of those start-ups that cooperated with corporations assessed the effects of this cooperation as good or very good. The number of cases in which a corporation is a strategic client for a start-up went up by 3% on the previous year.

Based on the research, it was concluded that the corporations present in the Polish market are extremely keen to support the start-up industry. In a similar report from 2020 (Arwaj et al., 2020) an example of the cooperation between PKN Orlen and start-ups was discussed. Partnership in programmes such as ScaleUp and GovTech was described, which allowed for a greater depth of knowledge of the available solutions, choosing the most interesting ideas and pilot tests to be run on PKN Orlen's infrastructure. The company has announced that it plans to develop tools for acquiring innovation on an ongoing basis because this will enable it to build a strong position not only in Poland, but also globally.

- 98 the risk of being taken over by a large company, some panellists simply avoid cooperation with large businesses and look for a market niche where they can make bespoke, tailored offers.

These opinions about pros and cons of cooperation with huge companies should be verified by deeper research.

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