

SGH WARSAW SCHOOL OF ECONOMICS
COLLEGIUM OF SOCIO-ECONOMICS

Magdalena Andrejczuk, mgr (M.A.)

STARTUPS AND THEIR ECOSYSTEM IN POLAND

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Jan Czarzasty, dr (PhD)

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Summary

One of the fastest-growing sections of the economy are new technologies, therefore, enterprises established and operating in this sector are of interest to other companies, investors, but also politicians, media and public opinion. They become the subject of analyses and scientific research. A startup is an undertaking whose aim is to establish a business model as part of innovative activities related to the use of new technologies, conducted in the digital economy sector. These enterprises play a special role in the economies of individual countries, although due to their global nature, their influence is of supranational importance. By introducing new, innovative products or services, as well as expanding their activities to new markets, they respond to new needs and challenges. The wave of their impact affects both breakthrough technologies, digital transformation, but also social change, which is brought about by the revolution in the ways of communication, changes in consumption habits, as well as the emergence of new professions and entire branches of the economy.

The aim of the doctoral thesis is to deconstruct and analyze the model of the functioning of startups in Poland and to describe the type of entrepreneurs who run technological startups. The specific objectives are to identify the conditions for the creation and development of startups and to assess the impact of startups and their ecosystem on the economy. Indirectly, the relationship between the role of the state and the development of innovation and startups will also be analyzed. Finally, the goal is to present the results and conclusions from own empirical research, to which the founders of startups, as well as representatives of the startup ecosystem, were subjected.

Startups are a fraction of the group of companies starting their operations in Poland, as well as among other micro-enterprises. According to the calculations of the Central Statistical Office (GUS), over 370,000 new companies were created in Poland in 2022, while according to the data of the Startup Poland Foundation, startups are a group of only about 3,000 entities. However, due to the dynamics of development, innovation, correlation with research and development activities and the possibility of foreign expansion, and above all, taking into account their contribution to the development of the

economy, they are considered an important element of the Polish economy. On the other hand, these ventures are burdened with high risk, the temptation to introduce imitations instead of innovations to the market, as well as growing competition from enterprises from other regions, especially from Western Europe, Silicon Valley, Israel, i.e. places where the startup ecosystem works most efficiently.

It is assumed that the development potential of startups is practically unlimited due to the use of modern technologies, and the importance of innovation and technology has an incremental impact on modern economies and societies. At the same time, we are dealing with a fairly limited source of research and scientific materials, including publications and conclusions from empirical studies exploring the topic of startups and their ecosystem, mainly due to the novelty of the topic and the relatively recent emergence of research problems of this kind. It is therefore justified to make an effort to thoroughly explore the research area related to startups and their ecosystem, as well as to conduct empirical research with startup founders and representatives of the startup ecosystem, which will undoubtedly enrich the literature on the subject and scientific achievements in this field.

The doctoral dissertation presents an overview of the definition of the term startup, based on Polish and foreign literature on the subject. At the same time, based on empirical material in the form of narrative interviews, an original definition of startups was proposed: **a startup is a young, unstructured company in its initial stage of operation, functioning in a situation of uncertainty, as a high-risk venture, at the same time capable of changing its business model or profile, learning from its own mistakes, easily and often pivoting, with a specific organizational culture based on networking, responsibility for people and time. A startup may not be profitable, but it operates very efficiently and in a short time has a chance for success and significant development and scalability (it can serve a larger market in a relatively short time), introducing a breakthrough technology, innovation (of product, technology or process) to the market, but at the same time, by really building intellectual value that is not available on the market, based on innovative technologies and operating in outstanding industries that have an impact on the economy.**

As part of the analysis of empirical material, as individual in-depth interview with representatives of the ecosystem, who were also indicated as an expert group, the following constitutive features of a startup emerged: **business model** (in the context of searching for a business model and its uniqueness), **innovation, change, new product, service, new technologies** (as a business operating with the use of new technologies), **fast development, scalability** (expansion outside the country), **uncertainty, risk and relationships** (startups are based on relationships, as well as the division of tasks and work, and finally passion and determination). These categories are consistent with the definition presented above and also become a starting point for a deeper analysis.

Relations between startups and the environment, including startup environment institutions, create a startup ecosystem, and it consists of, among others: startups (founders and people employed in startups) – future and present; investors: venture capital, business angels, accelerators, boosters, incubators, mentors, large corporations and their hubs; service providers for the startup environment; policy makers and government (local and national); universities (students, academics) and the media. The startup ecosystem as a place, but also the relationships and interactions between people and organizations, especially the level and connections of capitals (economic, financial, political, intellectual, human, social and cultural) are the subject of wider exploration as part of the work.

Bearing in mind the above introduction, the dissertation analyzes two aspects of the functioning of startups. Firstly, the issue related to the factors conducive to their creation and development, as well as constituting a barrier to this type of undertakings in the conditions of Polish capitalism. Secondly, the impact of startups and their ecosystem on the Polish economy.

The main research thesis of the dissertation is as follows: **due to the dominant features of a Dependent Market Economy, the development of startups in Poland is limited. The introduction of modern technologies and innovations is not possible in Poland on a large scale, because the goals and public funds are allocated to support the startup ecosystem, and not to directly finance research and development or support innovation. Despite institutional barriers, Polish entrepreneurs, who are characterized by a relatively high inclination to risk and innovation**

seeking, create startups aspiring to global expansion.

An important point of the work is a critical and analysis-based attempt to deconstruct and analyze the model of the startups' functioning in Poland in relation to the following aspects: **origins, motives for establishing a startup, innovation versus imitation, scalability, i.e. foreign expansion, as well as impact and relations with the ecosystem, appetite for risk, changes in the company's business model (pivoting) and attitude to failure.** The **correlation of resources and capital (internal and external)** in relation to the startup ecosystem was subjected to a special analysis. At the same time, the ecosystem was examined, with particular emphasis on its potential and impact on the dynamization and development of startups in individual economies.

The following **research questions** were posed in the work:

1. Which features of economies (in relation to the theory of varieties of capitalisms) determine the emergence and expansion of startups? Which features favor and which inhibit this process?
2. How do individual capitals (economic, financial, political, intellectual, human, social and cultural) affect the startup ecosystem?
3. What is the role of the state in stimulating innovation and supporting startups in Poland?
4. Which elements of the Polish state's policy towards the economy have a significant impact on the creation and development of startups?
5. What are the consequences for the economy of the spread of startups in Poland?
6. What is the relationship between the startup ecosystem, startups and the socio-economic environment in Poland?
7. What attitudes towards risk and innovation determine the actions and choices of startup founders?
8. What assumptions for the development and expansion are adopted by people establishing startups in Poland?
9. What are the types of startup founders in Poland?
10. What are the main conclusions and recommendations for Poland regarding the development of startups and their ecosystem?

The paper refers to three theoretical perspectives: 1) the varieties of capitalisms and the “Dependent Market Economy” (A. Noelke, A. Vliegenthart), the features of which are characteristic of the economy in Poland; 2) the role of the state, including the concept of an entrepreneurial state in relation to Poland (the “entrepreneurial state” by M. Mazzucato, welfare economics by G. Esping-Andersen and the information society by M. Castells and P. Himanen), 3) the role of an entrepreneur as innovator – based on the theory of J. Schumpeter, F. Znaniecki and R. Merton. The results of the analysis made it possible to determine the multidimensionality of the functioning of startups in the Polish economy.

Undertaking research on startups stems from the need for a comprehensive analysis of startups and their ecosystem in Poland as well as a thorough query of the literature on the subject, and finally an attempt to create a typology of founders of startups, based, among others, on empirical research. In connection with the above, it will be important to triangulate the research process by combining the analysis of existing data and qualitative research among these entrepreneurs. The empirical research was prepared on the basis of the grounded theory of B. Glaser and A. Strauss. As part of the research methods and tools, the following were used: a library query with a review of the literature on the subject and available research reports; desk research, which consisted in the analysis of existing data; participant observation and narrative interviews consisting in combining F. Schütze's autobiographical narrative interview with an individual in-depth interview based on a research questionnaire.

The first chapter of the dissertation is devoted to capturing the relationship between specific socio-economic characteristics and the functioning of startups. It describes, among other things, the role of new technologies in the economy, including the fourth industrial revolution and selected aspects affecting the digital economy. Definition considerations are also an important issue, i.e. the systematization of terminology related to the concept of startup and startup ecosystem based on a review of the literature and research in this area. An attempt was also made to prepare own definition of a startup based on empirical research. In the following, based on models of

the economy in theories of varieties of capitalism and the concepts of the role of the state in the development of innovation.

The second chapter "Development of startups in the conditions of the Polish economy" begins with a discussion of the processes related to the transformation of the economy and society and their impact on startups, the genesis of entrepreneurship in Poland and the entrepreneurship of Polish socio-economic transformation. The next part of the work is devoted to the analysis of startups in the world and in Poland, based on a comparison with the small and medium-sized enterprises sector, case studies and conclusions from the analysis of existing data, mainly research, rankings and summaries. The next part, related to the startup ecosystem in the world and in Poland, points to the essence of this element in the new technologies industry, and is also an attempt to summarize the conclusions from research and source materials. The dynamics of the startup ecosystem in Poland and the relationship between the network of connections and the level of social capital and the development of startups are also captured. Among the challenges discussed are issues such as: the phenomenon of black swans, the capital gap and the availability of capital, the activities of the state and its role, the startup bubble and controversies surrounding startups and their development potential, as well as company management in conditions of constant uncertainty.

The next chapter deals with the startup ecosystem in the world and in Poland, especially with the subject of the impact of the environment on the development of entrepreneurship in the digital economy, issues related to the innovativeness of Poland compared to other economies, and European initiatives and regulations. The chapter describes the functions and models of the startup ecosystem in the world, including Israel as an example of a leading ecosystem. It also includes conclusions from research on startup ecosystems in the world and a thorough analysis of the startup ecosystem in Poland in terms of position in global rankings. The following elements of the ecosystem are also described: state development institutions (The Polish Development Fund, PFR; The Polish Agency for Enterprise Development, PARP; The National Centre for Research and Development, NCBR) and their financing system, high-risk funds, acceleration programs and business incubators, the environment of business angels and crowdfunding as a form of financing, as well as initiatives

and projects of the startup ecosystem in Poland. The summary focuses on the relationship and dependence between the level of advancement of the startup ecosystem in Poland and the development of startups, based on own research.

The purpose of chapter 4 is to describe entrepreneurs establishing startups in Poland on the basis of own research, as well as to create their typology. It discusses the entrepreneurial orientation and the "entrepreneur gene" as well as the main motives for starting a business in the light of research. The chapter also presents three concepts: an innovator, a social individual according to J. Schumpeter, F. Znaniecki's typologies and R. Merton's types of individual adaptation. They were used to construct a typology of Polish founders of startups based on the conducted research, in particular through the following terms: motives for starting a startup, the idea of creating startups, innovation and imitation, scalability and development of startups abroad, networking and ecosystems, risk, pivots and failures. The chapter also includes the research assumptions of own empirical research, including the grounded theory as the methodological basis of the research, a description of the research methods used in own empirical research, as well as a detailed description of the narrative interview method.

Chapter 5 presents conclusions regarding the role of startups in the Polish economy, especially in terms of such issues as innovation, mobility and scalability, as well as an indication of the directions of the startup ecosystem development in Poland. It presents both the challenges and the main recommendations for the Polish economy regarding support for this type of undertakings.

The conclusion contains a summary of the doctoral thesis as well as the main conclusions and suggested directions for further research. This part also contains a reference to the theses presented in the work. In addition, at the end of the work there is a "Bibliography" and "List of tables, figures and graphs", as well as "List of terms and abbreviations" and attachments containing research scenarios.

Based on the empirical material, the author of the work presented an original typology of startup founders, which includes the following types: 1) hacker type, 2) serial entrepreneurship type, 3) innovative type, 4) hipster type,

5) pirate type. The typology can be used as a starting point to explain what the main characteristics of startups in Poland are, as well as what could potentially be the reasons for the limited development of this type of enterprise. At the same time, she draws attention to the diversity of types of entrepreneurs starting their business as part of technology companies. The main conclusion from this research concerns the need for a broader understanding of this complexity and adapting mechanisms, tools, instruments and support programs to different types of startup founders.

At the same time, a diagnosis of the Polish startup ecosystem was proposed in terms of the capital network and the conditions of capitalism in Poland. To sum up, each of the capitals plays an important role in the ecosystem, the most developed (in terms of potential and strength) are the following capitals: economic (entrepreneurship in general, setting up new companies) and social (relations between startups); other capitals have high potential and less impact: intellectual capital (knowledge and experience, skills) and human capital (talents, competences, attitudes, innovation). Potential and strength of financial capital (own funds, venture capital funds, private equity) and political capital (support institutions, development agencies, subsidies, regulations) are valued the least. In the case of cultural capital (values and principles, e.g. knowledge sharing, pay-it-forward) – on the one hand, the values and principles of the ecosystem are strong, on the other – a very ambivalent approach to "failure", therefore the potential of this capital is assessed at medium level.

The proposed research thesis was verified as follows. The author of the work confirms that due to the dominant features of a Dependent Market Economy (DME), the development of startups in Poland is limited. This is due to the characteristics of this type of economy, which causes barriers and limitations for startup entrepreneurship. The next hypothesis, in turn, is falsifiable, because the introduction of modern technologies and innovations is possible in Poland on a large scale, if the goals and public funds are allocated both to support the startup ecosystem, as well as to direct financing of research and development and support for innovation. The last hypothesis is falsifiable, because despite institutional barriers, Polish entrepreneurs who are characterized by a relatively high inclination to risk and innovation seeking,

create startups that do not aspire to global expansion. This characteristic of Polish startups is an important factor limiting their international success.

In conclusion, the doctoral thesis presents the main challenges related to the development of startups in Poland and a proposal of recommendations for the Polish economy regarding startups, including: 1) building effective mechanisms for distributing EU funds for VCs and investors and access to private financial capital; 2) introduction of broad education in the field of entrepreneurship and entrepreneurial attitudes as well as technological education; 3) creating efficient administrative systems and flexible legal regulations; 4) development of a motivation system for setting up startups and investing in startups, as well as incentives for their scaling; 5) supporting broad partnerships and promoting business (especially big companies) that cooperate with startups, including the commercialization of inventions; 6) creating a complete and coherent strategy for the development of startups and technological enterprises in Poland.