

THE ROLE OF NETWORKING IN THE FOUNDING AND DEVELOPMENT OF START-UP TECHNOLOGY COMPANIES

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Abstract: The paper deals with researching the role of social networks in the creation and development of technological start-up companies. The multiple-case design method has been applied. There have been carried out the case studies of four start-ups in the Moravian-Silesian region in the Czech Republic in the framework of the research. All data was obtained from semi-structured interviews with co-founders of start-ups. The research results have demonstrated the importance of social networks in the development and in the creation of start-ups, in particular for the creation of the incorporation of the team, recruiting the staff, consulting, and the creation of a network of partners, raising funds and building the legitimacy. The focus of the networking activities is, to a large extent, based on the chosen strategy, motivation and funding. The research has also presented the diversity of networking strategies and their benefits.

Key words: social capital, social networks, entrepreneurship, start-ups

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Introduction

Social networks and networking have a key role in entrepreneurship (Leite et al., 2016). Social capital is one of the important factors of innovation, a source of organizational benefits and value creation (Adlešič and Slavec, 2012). Entrepreneurs have certain ideas, knowledge and competences for entrepreneurship, but they also need some other resources, which they themselves do not have, to be able to develop and offer a particular product or service. The research therefore focuses on actions and ways of getting support, knowledge or approaches to resources through their social networks, and on the impacts of these activities. The results of the researches of business networks in the last decades have been summarised in survey studies by Hoang and Antoncic (2003), Slotte-Kock and Coviello (2010) and Hoang and Yi (2015). Research of business networks in the prevailing degree focuses on the initial phase of the business, in particular the establishment of the company (e.g. Brüderl and Preisendörfer, 1998; Semrau and Werner, 2014), however, there are studies of the other stages of the development of business activities (Klyver and Hindle, 2007). Social capital

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and social networks have become the subject of interest of research technology companies (e.g. Anderson et al., 2007; Heuven and Groen, 2012; Mønsted, 2010), which are the main source of potential growth in advanced economies (Groen et al., 2012) and regions (Schönenberger, 2014). Research studies deal also with the possibility of obtaining the information, knowledge and other resources for internationalization of business activities from members of the networks (Kwan Tang, 2011; Al-Laham and Souitaris, 2008; Bartoš et al., 2015), including the searching of structures and networks, so-called born-global companies (Freeman et al., 2006; Baranowska-Prokop and Sikora, 2015). Important area becomes also the examination of links between business and other actors in the framework of the entrepreneurial ecosystem (e.g. Motoyama and Watkins, 2014). Business incubators are not important only for their traditional services such as the provision of space and guidance, but also for its contribution to the development of social capital and networking (Adlešič and Slavec, 2012).

The start-ups ecosystem has developed more and more in the Czech Republic in recent years. In this paper, there is researched the role of social capital in the specific context of the start-up technological companies in the transition of the Moravian-Silesian region. The Moravian-Silesian region achieves lower economic performance than the average economic performance of the Czech Republic and among the most important problems of the region include high unemployment rate with a strong share of structural unemployment. Any support the emergence of a knowledge-based economy and enterprising represents one of the possible solutions of the future development of the region (Mezulánik et al., 2010; Gawel, 2010).

The paper presents final results of research among the four start-ups in the Moravian-Silesian Region in the Czech Republic. The research was carried out in the framework of the project “*The Model of the regional ecosystem, its simulation and verification in the conditions of the Moravian-Silesian Region*“ and it was prepared in the framework of the programme “Promoting science and research in the Moravian-Silesian Region” (program code RRC/05/2014).

The aim of the research is to describe and to analyze the role of social capital and social networks in the founding, creation and development of technology start-ups in the Moravian-Silesian region in the Czech Republic. The research focuses on the content and the benefits of social networks in the early stages of a business. In the framework of the research the four case studies were developed. The results of the research do not qualify for a generalization for all companies with the similar intention. The first part of the paper includes an overview of the literature concerning the role of social networks with a focus on technology companies and start-ups. The following part is devoted to case studies of four start-ups in the Moravian-Silesian region in the Czech Republic and the analysis of semi-structured interviews. The paper conclusion defines propositions and recommendation on the basis of the results of the research for further research.

Literature Review

Social capital and networking is especially important for small technology companies and start-ups. Knowledge entrepreneurs are more focus on networking than traditional entrepreneurs. Among the most important resources that the social network acquire include (1) information, (2) access to finance, (3) access to information, knowledge and skills, and (4) social legitimacy (Klyver and Hindle, 2007; Kozubiková et al., 2015).

Social networks provide in the early days of business such technology resources, and innovation (Pettersen and Tobiassen, 2012; Žemaitaitienė et al., 2016). One of the features of small innovative firms is their volatility and flexibility, their attempts to create new networks, to change the structure of the networks and their willingness to leave the network, if the network does not bring results. Networking allows small businesses to create new forms of technological relationships, which may create new business opportunities and develop technological innovation (Mønsted, 2010). Pettersen and Tobiassen (2012) stress the importance of the examination phase, before the establishment of the company. This phase has a large impact on the growth and internationalization of new firms. According to Hite and Hesterly (2001) the initial phases of the business process are more socially embedded. With the growth of the company, the network becomes more calculative and includes a larger and more diverse set of assigned function or office-based links.

The initial phases of the entrepreneurship are the perception of opportunities, the ability to gain access to resources and the ability to get legitimacy (Florentina-Cristina et al., 2013; Belás et al., 2015). These three variables are important for the survival of start-ups and the networks have an impact on the way how the entrepreneurs deal with the following variables. Technology start-ups should obtain the resources, skills and found both internal and external partners. Technology companies are often built on new technologies and innovative business models, which leads to the absence of objective information and documents about their new activity. The result is a lack of legitimacy. Founding entrepreneurs have to find a strategy to gain legitimacy (Elfring and Hulsink, 2003).

Technology-oriented small firms have already internationalized their activities in the early stages of their business. Their entries to a number of international networks, however, do not replace the embedding in the local regional universities and sector networks. Internationalisation is thus associated with a successful networking on the local level and cooperation in the field of research and technology (Keeble and Lawson, 1998).

Strong ties have a greater influence on the international performance than the weak ties for high-technological small and medium-sized companies (Kenny and Fahy, 2013). According to Romijn and Albu (2002) the strong ties may be important in some cases, in other cases, the weak ties or both types of contacts can be just as important. Different types of innovation are associated with different types of relationships. Radical innovation requires a strong collaborative links with

customers; incremental innovations are commercialized through different types of downstream networks (Partanen et al., 2014).

There are ways of networking negotiations, which manifested in technology companies. For example, we can distinguish for networking orientation and *tertius iungens* orientation the orientation. Networking orientation express tend of individual to reflect other people, which assumes that might be useful. *Tertius iungens* orientation indicates a propensity for creating links between unrelated individuals, yet if entrepreneurs believe that these people can be mutually useful (Obstfeld, 2005; Ebbbers, 2014).

Research Methodology

Hoang and Antoncic (2003), in their first survey study, recommended greater use of qualitative methods in research on social capital and social networks in entrepreneurship. Methodology of case studies is among the established guidelines of qualitative research (Štrach, 2007). The multiple-case design method has been applied. Multiple case studies usually offer richer theoretical framework and they are more robust (Pettersen and Tobiassen, 2012; Gabrielsson et al., 2014). In the case of multiple-case designs, it is important to monitor the replication logic rather than sampling logic. Individual case studies are perceived in a manner similar to multiple experiments (Yin, 1994). In the context of the creation of case studies, interviews have been carried out with the founders of start-ups. In the framework of the research there have been used also some secondary sources for more information (companies websites and other online sources).

The selected companies have had to meet several criteria. It had to be a technology start-up, older than 1 year and less than 5 years. The product had to be applicable to different markets. At the beginning all projects required input capital on product development. The companies were selected on the basis of personal contacts or recommendations. This research does not generalize the objective of its results to all technology start-ups in the Moravian-Silesian region in the Czech Republic. Interviews were conducted with one of the founders. The interviews took place from in May 2015 till July 2015.

Table 1. An overview of basic information about case studies

	S1	S2	S3	S4
Establishment	2012	2012	2014	2013
Product	projectors for videomapping	tool for the presentation and management of sales teams	analytical tool for e-shops	project management software
Number of employees	>10	>20	>10	10>
Global strategy	yes	yes	yes	not yet

The interviews were realized by the first of the authors of this article. The length of the interview ranged from 50 to 60 minutes. Interviews were recorded and

transcribed. Transcripts of the conversations were the basis for the analysis and the comparison of the studied cases.

The results were analyzed using the encoding. In the statements of the respondents referred in this paper were altered the names of the actors and the companies. Semi-structured interviews were focused on 5 basic areas: the idea/opportunity, team/social capital, funding, context and strategies.

Findings

When the companies were established, there were used strong and weak ties. In two cases (S1 and S3) the foundations were based on fellowship or friendship. In the case of S2 the incorporation was the origins of the team associated with the economic cooperation already existing companies of the two founders. An interesting role was fulfilled by the provider, in S4, which brokered the meeting of potential founders.

S1: We have known so half a year and somehow we're in it together.

S4: It was by accident. I had one client, who we did the e-shops and Web sites. He was very happy with us and he is Petr Svoboda's neighbour (co-founder) and a businessman as well, and he said, let us meet you. So we went for coffee and so it was well indeed.

When team building, all the companies used the network of strong and weak ties. Strong ties served as intermediaries. The technological focus of companies creates the possibility and the need to use contacts from universities and social networks provide access to talents with the necessary skills. In the case of start-ups, which do not have the large starting capital, are characterized by a high degree of risk and uncertainty, it can show the need to get the right people, who would be able to professionally apply well in big companies, but they are attracted by the start-ups environment.

S1: So the other buddies, who we knew we want to the team, they are quality people, so we basically called them, we asked them what they were doing. They have finished school and started to work with us. So now we're in the same boat. They are friends, but a lot of people are what we did not know, the experts.

Personal development of the company S2 was also allowed with the placement of the firm to environment of science and technology park (STP) of the local university. The science and technology parks provide are organising the links between firms, experience and abilities of students and academics.

S2: There we took advantage of it, that the Company (previous and still working firm of majority founder of the company) was on the STP, where it was possible relatively good hiring people, students. Programmers, who then got to us, they are project managers and advanced designers. So it worked out pretty well.

Social networks are important for access to different skills that are not directly in the vicinity of the founders of start-ups. This can include individuals with expertise beyond the purview of the founders.

S3: We just managed to find people who were seniors, juniors, and left their places, because they didn't like the jobs and they wanted to do what they enjoy. [...] We came to them on the recommendation. University message boards, startupjobs.cz, a Facebook group.

The last start-up has not needed yet to take a wider team of employees. Despite they reflect an importance of the need to find a man setting to the team.

S4: Because the first person terribly wrenches the company because we are pretty small, and if we have chosen the wrong so that we feel the feedback immediately. [...] I know one girl that I saw somewhere once a year for beer, and I studied with her in a high school and we finally got together with her.

All analysed start-ups have been financed in the first phase from their own resources, in the case of more experienced entrepreneurs from resources of their previous business projects, and their investment. The problem with the financing in the initial period could create the suspense between the strong ties (S1). Previous business projects allow surviving the difficult initial period of building the business (S2, S3, S4).

S1: We basically lived from what we have saved and family support, and so on, and even the money that we put into it at the beginning so they were our building savings that we withdrew. [...] so I'm sure from the side of the family. But the patience after the year was over already and it was pretty tense relationships.

S2: Financing from the beginning it was difficult, because we funded everything from the money in proportion to our shares in the company.

S4: Petr Svoboda invested the primary money. I think at the beginning he gave some money, and then still about twice adding some money more before it kicked.

The next phase of financing does not work without the use of weak ties and the expansion of social networks. In the case of the first start-up, there was the participation at the trade fair, which allowed the establishment of key partnership.

S1: So we're sort of sober and we took the last remnants of power, the last rests of the money that we had. We basically paid a stall in Frankfurt's fair which had 3 x 3 meters and we went there. And this we basically made a tremendous boom. [...] and in this madness we basically have chosen our partner who still works with us now.

Social networks allow the entry of venture capital needed for the further development of the company.

S2: Ivo found them (one of the co-founders), who was once in America, he spent in America about six months last year, I roughly three. He met there at some meet-ups with Mr. Novotny (the founder of the new small investment fund) and they agreed. As we are an interesting technology start-up, it fits them to the portfolio.

A complex combination of personal contacts and providers has proved important in the financing of the third start-up.

S3: Well, it was just through the contacts that I've collected thanks to Mirek and thanks to partners [...] and to them we got through some contacts, recommendations. They have some kind of reference.

In the case of the fourth start-up there was an investment from a local technical university. Another source of funding became an innovation voucher provided by regional government.

S4: So this investment was actually from the school and from Mr. Svoboda. Well, and then we got a quite big help, actually we were during 2014, it was a project of the region and it was a project of the innovation voucher, when we could actually develop the function's communication interface, which we did through the voucher.

Forms of external cooperation vary depending on the strategy of companies and business models. However there is always showed the importance of building the networks. The networking strategy also reflects the experience from abroad.

The first start-up puts its emphasis on creating structures with a variety of persons involved. At the same time it seeks in its vision to create a connection between two distant worlds.

S1: The point is, in essence, that here we have basically some people who have a lot of money and they want to in some way used it. [...] On the other hand we have the artists. [...] and we want to somehow connect these two worlds.

In the case of S2 is based on their networking strategies from foreign experience and involvement in global start-up community.

S2: Through the contacts. America has taught us, that business is just made a lot through contacts. [...] It is based on the fact that you go to those technological meet-ups, you meet there with those people, you have a chance to get interesting contacts and take recommendation on other people.

Despite all the benefits of a collaborative, the third start-up is considered next to the mediation as important the separate search for partners.

S3: Mirek was fine, had some contacts in Prague, when we started doing business. [...] The partners that we have today, so it was not through any connections. I hard called and met them to close everything than it worked. We were really alone.

The company S4 benefited from cooperation with the local university, in particular when legal advice, marketing advice, and the formation of the business model. It also provided credibility in negotiations with companies, but from the perspective of the S4 with university spin-off, creates certain obstacles in dealing with investors.

S4: But it certainly opens up a lot of options. The big effect is that whenever we say when we act with joint stock companies and they can see the young company and utility companies have a little concern. [...] But from the perspective of the larger

companies or investors, the school is perceived such as a rigid partner and they would rather, if the school isn't in the company.

Project S1 is not so heavily institutionally embedded in the regional ecosystem. It actively enters into various business competitions at regional and national level. The company S2 is involved in the local start-up community by placing the company in the local science technology park and the recently created HUB. Despite the importance of the start-up community and the need to act in a regional community, S2 leaders perceive the limited benefit from this community on the current development of their business. In the future, they want more development the community support.

S2: We know start-ups here; we try to help them in terms of some experience. On the other hand, I personally feel that it is also some time and energy that we have to invest, and now we have a clear focus mainly on this, we have succeeded. [...] And when that time comes, we will invest more in the others.

Sceptical in light of its own experience, they look at the functioning of the acceleration programs in the company S3.

S3: I'm not a fan or don't trust completely the form of accelerator for us. I'm not saying it in general, I know even successful companies, but we've decided that we'll go just the other way, and it's in hell this market.

In the case of company S4 there was the important cooperation with the local university. They collaborate with the organizers of the business competition (offering the software for competitors). They are also involved in the project CzechEkoSystem.

Conclusions and Implications

The results of the research have shown the importance of networking and social contacts in the development of all analysed start-ups. The focus of the networking activities is in a large extent based on the chosen strategy and funding.

Although in recent years, the research on social networks has been dedicated to the considerable attention. We believe, however, that the role of social capital in the specific context of start-up technology companies has not yet been examined in detail in the Czech Republic. At the same time, it was not yet deeper searched a role of social capital and networking in the regions with newly forming business start-up ecosystem.

Proposition 1: *When getting the first employees, both the strong and weak ties are important for start-ups as well.*

Previous research has brought conflicting results on the role of strong and weak ties. The results of our research have demonstrated the implementation of the strengths and weaknesses in obtaining the first employees. The combination of strong and weak ties was used for all companies, regardless of previous experience of the founders of start-ups. The strong ties do not allow access to the required

talents with the required skills. For all of these start-ups has proven the importance of the use of key contacts from the universities. Start-ups used a network of classmates, academic staff as providers of contacts were not used. Academic staff could be asked for more research projects, for example in the area of biotechnology, etc.

Proposition 2: *Start-ups based by entrepreneurs with business experience have a clearer strategy for the use of social networks in obtaining financial resources.*

Start-ups based and managed by entrepreneurs with previous business experience and a clear global strategy (S2 and S3) showed open orientation for a network of potential investors. They benefited of both their previous contacts, but also targeted their networks with the aim of obtaining financial resources. Networking activities to obtain the finance for start-up-based entrepreneurs without previous experience of the business were less concentrated and have experienced greater heterogeneity. At the same time they could not fully benefit from previous contacts.

Proposition 3: *The local elements of the entrepreneurial ecosystem focused on supporting entrepreneurs (incubators, accelerators, Hubs) do not produce for start-ups with global ambitions after a successful entry into the market an efficient network.*

Through a local imbedded of start-ups, the research results have shown that start-ups with global ambitions have made used in a very limited local entrepreneurial ecosystem and the focus of the network outside the region. Gradually created a local business start-up ecosystem does not allow the start-ups already in the initial stage of business to provide the necessary finance, contacts and knowledge. They have been focusing on the entrenched networks and the stronger network at the national level (in the case of the Czech Republic especially in Prague) and the international level.

Over a relatively short period of existence of the analysed start-ups and assumption of memory options and information from the past years, it would be appropriate to implement the longitudinal research. The problem is memory of all respondents and with it also being wrong consecutive issues in the past. In accordance with previous studies and their recommendations, e.g. the research of academic entrepreneurs (Mosey and Wright, 2007) or biotech start-ups (Maurer and Ebers, 2006), should be at least for a period of 12 months, or the academic year. In terms of obtaining longer-term perspective and gain deeper knowledge, it would be appropriate to implement the research even in the longer term. Further research could take advantage the interviews with more than one representative from each company.

The research sample was represented by four different start-ups with different basic characteristics and different growth strategies, financing, etc. It would be appropriate to implement a more qualitative research studies for companies with similar characteristics (e.g., companies that obtained in the three years since their establishment a venture capital). The research sample is based on the small number

of firms in the context of transforming the region and start-up ecosystem and applies to a given context. There may be differences between the newly-developed start-up ecosystems and any emerging ecosystems of the more developed regions of the Czech Republic. Similarly, there may be differences between ecosystem of the Moravian-Silesian region in the Czech Republic and other similar regions abroad.

An important direction for research should be the exploration of networking activities and strategies in relation to the results of the start-ups. From the perspective of further research it would be appropriate to focus on quantitative and statistical verification of the results through a questionnaire survey. Such an investigation would allow a generalization formulated conditions.

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ROLA SIECI W ZAKŁADANIU I ROZWOJU START-UPÓW FIRM TECHNOLOGICZNYCH

Streszczenie: Artykuł zajmuje się badaniem roli sieci społecznych w tworzeniu i rozwoju start-upów firm technologicznych. W badaniu została zastosowana metoda projektowania wieloprzypadkowego. W ramach badań przeprowadzone zostały studia przypadków w czterech start-upach przedsiębiorstw w regionie śląsko-morawskim w Republice Czeskiej. Wszystkie dane uzyskano z pół-strukturalnych wywiadów z współzałożycielami start-upów. Wyniki badań wykazały znaczenie sieci społecznych w rozwoju i tworzeniu start-upów, w szczególności, w zakresie tworzenia zespołu, rekrutowania personelu, doradzania i tworzenia sieci partnerów, pozyskiwania funduszy i budowania legalności. Główny cel działania sieci w dużej mierze oparty jest na wybranej strategii, motywacji i finansowaniu. Badania zaprezentowały także różnorodność strategii sieciowych i ich korzyści.

Słowa kluczowe: kapitał społeczny, sieci społeczne, przedsiębiorczość, start-upy

創業技術公司在轉型地區的創立和發展中的網絡作用

摘要: 本文涉及研究社會網絡在創新和發展技術創業公司中的作用。多案例設計方法已應用。已經在研究框架內對捷克共和國的摩拉維亞西里西亞地區的四家初創企業進行了案例研究。所有數據均來自初創公司聯合創始人的半結構化訪談。研究結果表明社交網絡在開發和創辦初創企業方面的重要性，特別是在創建團隊，招聘員工，諮詢和創建合作夥伴網絡，提高資金和建立合法性。網絡活動的重點在很大程度上是基於所選擇的戰略，動機和資金。研究還提出了網絡戰略的多樣性及其好處。

關鍵詞: 社會資本，社會網絡，創業，初創企業