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MASTERS THESIS

**How is high-tech entrepreneurship able to grow in Sofia,
Bulgaria? A social capital perspective.**

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Abstract

Entrepreneurship is considered as a critical factor for the development of transition economies and currently attracts a growing body of research. Following a qualitative case-study research strategy, this paper is occupied with the emergence of Sofia, the capital of Bulgaria, as a location of high-tech entrepreneurship in the country. While the legacy of the socialist past is part of Sofia reality, the entrepreneurs in the capital appear to make considerable efforts to overcome these barriers. Applying a social capital perspective I articulate the link between entrepreneurship growth and entrepreneurs' social context. Internationalization from early stage of start-up development is perceived as the main growth path, which requires the entrepreneurs to accumulate new social relations. Adopting a process oriented analysis, I observe the shift in the social capital content and how start-ups can benefit from their pre-existing and emerging social relations. I contend that the acquisition of social capital by studied entrepreneurs has a specific added value for the studied companies as in this process they are required to adopt new norms and practices that are distinctive from those generally observed domestically. This process, however, poses certain concerns for start-ups' survival prospects due to its high costs.

CHAPTER 1. INTRODUCTION

“Entrepreneurship occurs at significantly higher rate than at any time in the last 100 years” (Thornton, 1999 p. 19). Not only surveys report that following an entrepreneurial career is now perceived as a desired lifestyle (Thornton, 1999), but entrepreneurship is seen as the main driver of economic growth (Julien, 2007). Entrepreneurs have a key role in seizing new opportunities resulting in increase of innovation and employment rates in regions and nations (Pinho and de Sá, 2013).

Entrepreneurship is a fundamental element of today’s knowledge-based economy (Bosma et al., 2002) and is seen as a powerful solution to the challenges Europe is facing with economic recession, high rates of unemployment and national debts. At the same time, the ‘entrepreneurial economy’ is predicted to be at the heart of tomorrow’s most successful economies (GEDI, 2016).

Entrepreneurs and what they do, however, are a reflection of their time and place (Julien, 2007) which leave distinctive patterns on entrepreneurial activities, entrepreneurs’ behaviour, the type of barriers they face and the potential for business growth. This means that the potential advantages of entrepreneurship, as depicted above, cannot always be ensured. Taking this argument as a departure point, this research aims to look at entrepreneurship in particularly dynamic and challenging settings and shed new light on entrepreneurial process in the conditions of post-socialist Bulgaria and particularly in its capital city - Sofia.

Bulgaria is a country in transition. With the fall of the socialist system, the country encountered political, economic, legal and cultural transformations. Entrepreneurship, as a legally allowed profession, is a phenomenon appearing in the last two decades. Entrepreneurs are faced with unpredictable environment due to changing formal institutions and have to cope with a past that has not been conducive to private initiatives (Manolova et al., 2008). As a result, in addition to the well-known challenges that entrepreneurs have to face when starting a venture such as financial limitations and risk taking, entrepreneurs in Bulgaria are faced with undeveloped markets, educational system in process of restructuring and societal distrust. Consequently, available research argues that these conditions affect their capacity and limit the added value that they create for the economy (William and Vorley, 2014; Manolova et al., 2008).

On the other hand, studies of entrepreneurship in transition economies (Luo et al. , 2005) claims that institutional constraints and the dynamic characteristic of the environment requires smalls firms to take more risks, be more innovative and proactive, compared to established firms. Additionally, facing lack of legitimacy, tight budget and organisational constraints, they tend to adopt more market-oriented behaviour in order to capture emerging opportunities. Such explanation sounds even more plausible when one considers that recent statistics and research show that internationalization is seen as a growth path by new and small ventures in Central and Eastern European economies (Manolova et al., 2010). Such view still does not deny that SMEs (small and medium enterprises) in transition economies are less resource-endowed compared to their counterparts in developed market economies and thus they need to be able to ‘do more with less’ (Manolova et al., 2010, p. 257).

In order to shed more light on this complex phenomenon, the attention of this research is directed towards the role of the entrepreneurs’ social context. Academics argue that entrepreneurs are “embedded in ongoing social relations, including personal and professional ties, (non-)equity partnerships and other networks, all of which affect the way their firm develop.” (Elfring and Hulsink, 2003, p 409). The latter represents the core of social capital theory that has enjoyed a remarkable rise

within social science literature in the last decade (Grootaert, 2003). Thus, social capital theory is chosen as guiding framework in this research.

1.1 Research aim and research questions

The research adopts a case-study strategy with the aims to understand how the use of social capital in the performance of entrepreneurial activities influences venture's growth potentials and vice versa in the settings of post-socialist Bulgaria and its capital city Sofia. The analysis is set to capture a range of relational effects in order to recognize the mechanism that social capital unlocks to create conditions for emergence and development of young high-tech firms. From a theoretical perspective, the research aims to develop a framework that can best capture the interplay between social capital and entrepreneurial performance in the chosen context. In order to achieve these goals, social capital is seen a dynamic phenomenon (following Elfring and Hulsink (2007) and Lechner and Dowling (2010)). This means that the research encompasses the contribution of both pre-existing social contacts and newly developed networks in the business establishment process and early growth of the start-ups.

Set aims are translated into three research question that rather feed into each other instead of being 'hierarchical':

1. *What are the characteristics of the social relationships and networks that comprise the social capital used by entrepreneurs and what type of resources do they secure?*
2. *How does social capital contribute to the start-ups performance?*
3. *How does entrepreneurial performance influence the formation of social capital?*

1.2 Societal and scientific relevance of the research and its added value

The potential of studying entrepreneurship and its embeddedness in social context through social capital theory is uniquely rich. This stems from the interest of both practitioners and policy makers, on the one hand and academia on the other.

With the globalization of entrepreneurship, the world has seen an impressive rise of accelerators, educational programs and policy 'experimentation' in search of creating an enabling entrepreneurial environment (GEDI, 2016). The proliferation of entrepreneurship and start-up societies is a phenomenon that has come with growing number of positions in research institutions, professional organizations and journals in the field of entrepreneurship (Thornton, 1999), which try to answer questions such as what determines successful entrepreneurship, in which locations it occurs and how it can be nurtured. Researchers aim at producing advice for policy makers who try to create the strongest local entrepreneurial ecosystems, and guidance for entrepreneurs who are faced with the fact that the long-term existence of start-up companies is rare. Investigating entrepreneurial firms in transition economies has recently started to attract the attention worldwide as an answer to the increase of entrepreneurial firms in transition economies (Luo, et al., 2005). Such research aims to shift the focus from more developed economies to transition and emerging economies (ibid.).

In the last two decades, it has been realized that what influence entrepreneurial processes and outcomes are social networks (Jack, 2005). Researchers have found that entrepreneurs' social capital in the form of social networks may ensure venture survival and provide resource base that is crucial for business establishment and development (ibid.). The fast-growing popularity and diverse application of the concept, however, has led to alarming warnings that more theoretical and empirical insights should be provided in order to validate its potential (ibid.).

On the other hand, the interest of policy makers and practitioners in the concept of social capital manifests itself through discussion papers of governmental institutions, the World Bank, European Commission and the OECD, as well as through its appearance as a theme in numerous conferences (Lynch et al., 2000). The concept of social capital is particularly relevant to policy-makers faced by budget cuts as it shortens the distance between the economic and sociological perspective and thus provide less costly solutions to economic and social problems (Portes, 2000).

The relevance of the study to the general public is two folded. On one hand, entrepreneurship is understood as means of increasing economic activity that creates more jobs and thus more income for the society; and of enhancing living standards and social cohesion. On other hand, the evidence that entrepreneurship occurs and ventures develop within a social context endowed with certain amount and type of social networks, has direct implications for the society. It shifts the focus from personal characteristics of the entrepreneur or institutional settings to beneficial resources that are shared among society members. This means that the members of the society have a direct or indirect impact on the access to ideas, resources, knowledge or financial capital available to entrepreneurs. Sharing their opinions on new product or service, or sharing their personal and business contacts, providing support or endorsing innovative start-ups' ideas in front of the broader public may provide entrepreneurs with resources that are otherwise too costly or even impossible to acquire through arm's length transactions. In this sense, a societal recognition of the impact of social context is important for entrepreneurial achievements.

This research aims to address several research gaps and limitations. On first place, it is recognized, that the growing body of research in the field of entrepreneurship tends to be "heavily US-biased" (Ulhøi, 2005) as it is predominantly based on unique social, historical and institutional characteristics of the US entrepreneurial culture. In this sense, a rationale for performing the current research is that it takes the perspective of a post-socialist country with its significantly different social, historical and institutional characteristics compared to the Western society. In addition, it is claimed that, while most of the network-related literature has been developed in the Western countries, social networks have been found to play an important role in less developed countries (Bhagavatula, et al., 2010) and especially in the transition economies (Manolova, et al, 2014). Expanding the entrepreneurship and social capital literature to include insights from an Eastern European country is an important contribution of this paper.

Secondly, while research on entrepreneurship in Bulgaria is scarce, it has been focused on analysing the transformation of legal framework, formal and informal institutions (Manolova and Yan, 2002; Manolova et al., 2008; Williams and Vorley, 2014). These studies seem to provide an adequate response to the transition processes in the last two decades, however, they have limited potential to explain how entrepreneurial firms are able to grow¹. In this regard, the role of social capital seems to be under-studied and this research sees its potential to add to the knowledge-base in the field.

The present study addresses the call of some researchers for more qualitative analysis in the field of social capital (Edwards, 2010) in order to explain the content of relationships and the driving forces determining networking processes.

¹ Social networks have been considered by research, however, in rather negative light due to the legacy of the country. (e.g. Manolova and Yan, 2002)

Finally, the research emphasizes the notion that networking activities are related with costs in term of time and resource investment necessary to develop and maintain relationships (Semrau and Werner 2009). Thus, it stresses the need for a strategic approach to the design and management of start-ups' relationships and networks.

1.3 Research context

While entrepreneurship is seen to be central to the functioning of the free economy as an engine of economic growth and innovation (Pinho and de Sá, 2013), both formal institutions comprised of political, economic and legal structures as well as informal institutions including norms, value systems and code of conduct influence 'the extent to which entrepreneurship is socially productive and contributes to economic growth' (Williams and Vorley, 2014, p. 842). This argument leads to the assumption that Bulgarian context, marked by its socialist past, has a unique impact on entrepreneurial behaviour, which is why this section aims to sensitize the reader to the characteristics of this context.

Bulgaria is a lower-middle income country in Eastern Europe (Manolova et al., 2008) whose economy was under the command of central planning for almost half a decade as part of the Soviet bloc. Since late 1989 the country has undergone large-scale institutional and economic reforms toward democratization and market liberalization (ibid.). One of the key elements of this process was the establishment of political and legal framework which would allow new private businesses to emerge (Smallbone and Welter, 2001).

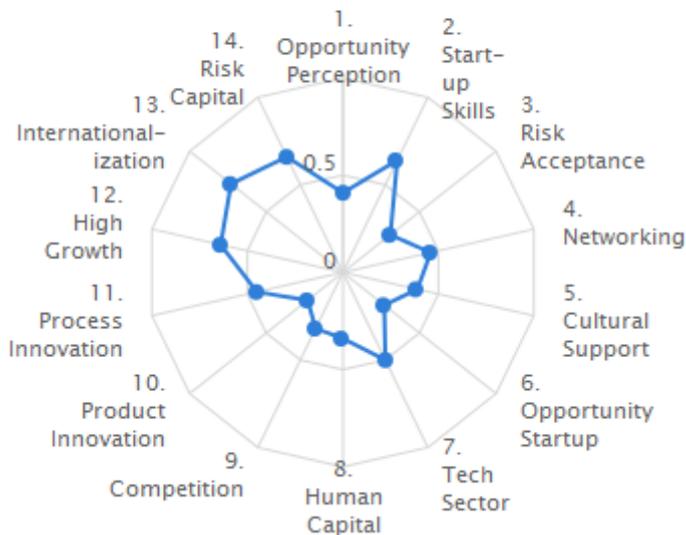
Currently, Bulgaria has favourable macroeconomic conditions according to the ranking of the Global Competitiveness Index for 2012 (30th among 148 countries) combined with relatively favourable condition of doing business in terms of number of procedures and cost (World Bank). Access to financial capital is, however, challenging and the development of the private equity markets is in its 'infancy' (Manolova, et al., 2014, p. 945). Bank credits are reported to be more accessible for established rather than young firms (BSMEPA, 2013). Governance indicators such as corruption and regulatory quality have not shown a steady progress in the last 20 years (World Bank), which has its implications for entrepreneurship. According to Anokhina and Schulze (2009) corruption increases the risk for the entrepreneurs that they will face opportunistic behaviour and will not be entitled to the whole value that they create. This influences the individual decision to pursue an entrepreneurial career (ibid.). Low regulatory quality, on the other hand, is assumed to breed unproductive entrepreneurial behaviour and to increase uncertainty in terms of operational and transaction costs (Williams and Vorley, 2014).

In order to depict correctly entrepreneurial responses in Bulgarian context, several indicators used by the Global Entrepreneurship Index (*figure 1*)² are worth looking at.

² Each pillar of this study is comprised of institutional and individual variable. As the results are used to explain entrepreneurial behavior, individual variables are discussed.

Figure 1: Bulgaria – 14 Pillar Comparison

14 Pillar Comparison



Source: *Global Entrepreneurship Index, 2016*

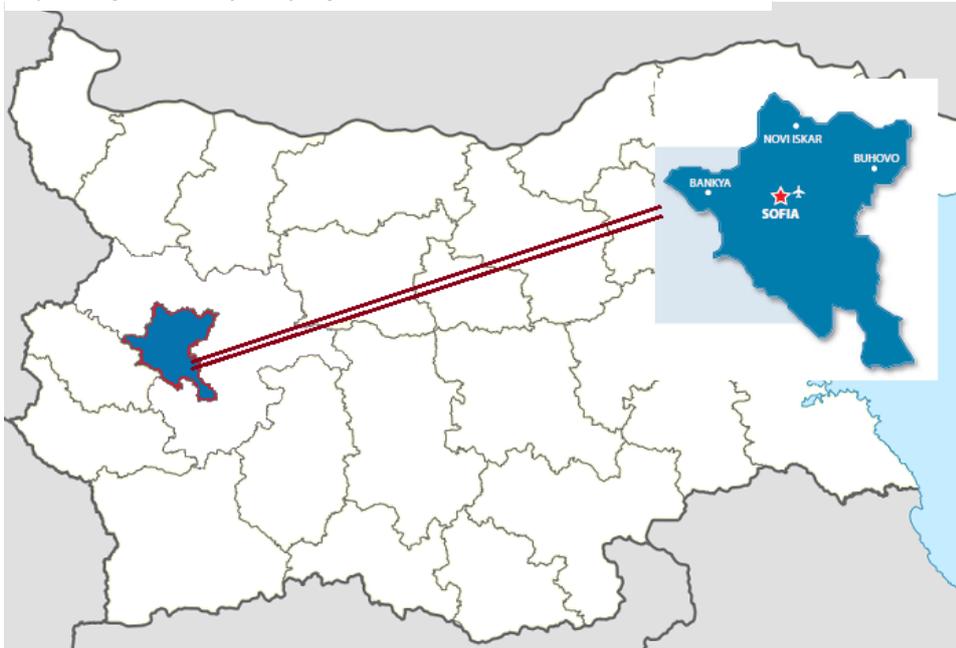
It is observed that opportunity recognition (indicator 1) and opportunity motivation (indicator 6) levels in Bulgaria are low which is reflected in the results of Global Entrepreneurship Monitor (2016) that less than 5 % of Bulgarian population signals intentions to start a business. That is an interesting observation compared to the high level of skills perception that the population has (indicator 2). An explanation may be sought in indicator 3 risk acceptance, indicator 4 networking and indicator 5 cultural support. Low levels of risk acceptance indicates the fear of failure which can be related to the general institutional environment and the legacy of suppression of risk taking behaviour. This may be an underlying reason why entrepreneurs in Bulgaria are geographically localised and with limited growth ambitions (Williams and Vorley, 2014). Networking seems to be an indicator that has been able to progress compared to the beginning of the transition when informal networking has been perceived as illegitimate (Manolova and Yan, 2002). Indicator 5 seems to reflect the findings of Williams and Vorley (2014) that small private enterprises continue to lack legitimacy in transition context, although this indicator also measures corruption which is a reason for its low level.

The high level of internationalization (indicator 13) is in line with the observation of Manolova et al. (2014) that internationalization is an important factor for growth of new and small ventures in Bulgaria due to relatively small domestic market. Small and medium sized enterprises in Bulgaria, however, are found to prefer to export to neighbouring counties due to lack of information about more distant markets and perceived lower competitiveness (BSMEPA, 2013).

Although certain positive patterns can be observed in the discussion above, still they do not seem to explain why Bulgaria and its capital city –Sofia in particular has recently become promoted as a high-tech entrepreneurial hub by international media (Forbs, 2015; Red Herring, 2016) and innovation programmes (Seedstars World, 2015) by ranking Sofia among the 10 cities in the world to start a business. Undoubtedly, this attention has been connected with the fact that in the recent years,

venture capital funding became more accessible in this sector (EIF, 2012), which stimulated the foundation of a growing number of start-ups. However, this international recognition speaks also about their global outreach and quality. In this line, Sofia city is chosen as the spatial unit (*map 1*) and the high-tech sector as the segment of economic activity that set the unique characteristics to study entrepreneurship for this research.

Map 1: Bulgaria and Sofia-city region



Source: author's combination from Wikipedia (author: Tubs) and Institutie of Market Economics (IME)

Sofia city

Sofia bears distinctive characteristics as a result of being the most economically and socially advanced city in Bulgaria (Institute for Market Economics). In order to put the city in comparative perspective to the general environment in Bulgaria, statistics on Sofia-city region, is used. Such approach is adequate as the population of Sofia city represents 93 % of the population of the region which means that most of the economic power takes place in Sofia city.

Table 1: Comparison of demographic, educational and economic indicators of Bulgaria and Sofia city region

Indicator	Bulgaria	Sofia city region
1. Average annual population (2014)	7 223 937	1 316 557 (1 228 282 living in Sofia city)
2. Educational attainment of the population 25 - 64 years of age – tertiary education (%)	27 (for 2014)	36.8 (for 2011)
3. Number of universities and equivalent higher schools	50	20
4. GDP per capita at current prices, in BGN (2014)	11 574	24 982
5. Average annual gross wages and salaries, in BGN (2015)	10 724	13 542
6. Unemployment rate (2015)	9,2	4,4

Source: National Statistical Institute (NSI) <http://www.nsi.bg/>

17 % of the total population of Bulgaria is concentrated in Sofia city which reaches GDP per capita two times higher than the average in the country (*table 1*). Almost half of the Bulgarian universities are located in Sofia city which underlines the higher percentage of population with tertiary education there. Unemployment is significantly lower while the higher prosperity of the population can be indicated by the difference in the average annual gross wages. The number of people who moved from other regions of the country to Sofia-city region is 23 096 for 2015 (NSI).

The bases for reaching such economic results is seen in the transformation of the city from a ‘Soviet-type industrial metropolis’ to a service economy where services represent more than three-thirds of its GDP³ (Dainov and Sauka, 2010 p. 148, NSI). Entrepreneurship has established Sofia as the ‘engine of new national economy’ (Dainov and Sauka, 2010, p. 159). Currently, Sofia city hosts most of the knowledge-intensive (ICT, R&D, law and finance) companies in the country (*ibid.*). According to the statistics on economic activity groupings for 2014, the number of employees in the information and telecommunication sector in Sofia capital region is 59 660, while this number in the region following Sofia is 3004 (NSI). This indicates the critical mass of business activities and human capital in the sector that are concentrated in Sofia. This context also set a road for further increase of entrepreneurial activities in the sector as the growth of entrepreneurial attitudes and successful entrepreneurship serve to legitimate entrepreneurial activities and stimulate others to emulate such behaviour (Williams and Vorley, 2014). It should also be noted that since the year 2000 onwards, Sofia has hosted the outsourcing services, software development and R&D centres for international companies in the field of reference such as Cisco, HP, SAP, VMware, etc., which brought an inflow of international know-how and technological infrastructure in the city. Initially, the tech sector was set to serve such outsourcing projects, however, it has come as natural consequence, that this triggered a processes of building own products and services which resulted in several success stories.

³23 603 million out of 32 232 million in total GDP, NSI

However, specific local policies facilitating entrepreneurship are absent due to the high centralization of Bulgarian policy making (Dainov and Sauka, 2010). Relevant taxes and educational system, for example, are managed on national level (ibid.). Respondents, participating in the empirical research of Dainov and Sauka (2010) on companies in the knowledge intensive and creative sector in Sofia, report their 'hopes that the administration would simply stop getting on their way' (p. 159). As a result, the authors observe 'self-regulating pattern' of entrepreneurship (p. 159). Such observations can be confirmed also by the business-organized alternative education channels or private-led entrepreneurial organizations aiming to develop entrepreneurial culture in the city. The national government, on the other hand, played important role for the provision of venture capital through an agreement with the European Investment Fund (EIF) and the European Commission (EC) in 2010 which deployed an acceleration and seed instrument operationalized through two private equity funds headquartered in Sofia.

The observation of a contrast between the propositions of lacking entrepreneurial tradition and adequate institutional infrastructure on national level, and positive entrepreneurial performance in the high-tech sector on city level, defines the choice of sector and location for this study.

1.4 Structure of the research

The remainder of this research is structured as follows. Chapter 2 presents the state-of-the-art of relevant research on social capital. The review of academic literature is used in Chapter 3 for the construction of conceptual framework suitable to guide the analysis and to realize its aims.

Chapter 4 informs about methodological choices and argumentation. In chapter 5, the research analysis is presented with critical discussions of possible interpretations.

The final chapter represents a conclusive discussion with reflection on research limitations and proposals for further research.

CHAPTER 2. A REVIEW OF THE ACADEMIC LITERATURE ON SOCIAL CAPITAL THEORY

'It's not what you know but who you know'

Aldrich and Zimmer (1986)

Over the last decades, research on entrepreneurship has made a considerable effort to understand the factors facilitating venture emergence and growth success (Semrau and Werner, 2009). The heterogeneity of the field as well as the interdisciplinary nature of entrepreneurship have found different support, ranging from the personal-traits approach towards attempts at integrating sociology and economics, cultural explanations and ecological approaches (Greve, 1995). Broadly speaking, the knowledge base of entrepreneurship has been developed by three disciplines: psychology (McClelland, 1961), economics (Schumpeter, 1934) and sociology (Weber, 1904) (Thornton, 1999).

Currently, the concept of social capital is considered as one of the 'popular and powerful mechanisms' of sociology that is applied in entrepreneurial studies (Huggins and Johnston, 2010, p. 461). Researchers within this field define entrepreneurship as the creation of new organization 'which occurs as a context-dependent, social and economic process' (Thornton, 1999, p. 20) or as the situational exchange of resources and opportunities, which are embedded in ongoing social relations (Hulsink and Elfring, 2003, quoting Aldrich & Zimmer, 1986).

The quote at the beginning of this chapter summarizes in one sentence the basis of the concept social capital and its juxtaposition to the perception of the 'heroic and "atomistic" entrepreneur' (Elfring and Hulsink, 2003, p. 409) as a leading explanation of entrepreneurship success that was dominant in the previous decades. At the end of the 1980s, Coleman's recognition that economic activities are socially situated and depend on underlying social structure (Hulsink and Elfring, 2003) gave a new direction of research in entrepreneurship. This meant that the venture's success is not determined only by the qualities of the entrepreneur but also by the social networks in which he/she is embedded and operates as such. Thus, understanding the nature and utilization of social capital enables new explanations of performance differences among entrepreneurs (Koka and Prescott, 2002).

In order to start a business nascent entrepreneurs have to fulfil various tasks – develop a model or prototype, validate their idea, write a business plan, form a team, etc. Entrepreneurs need different resources such as information, skills, capital etc. to fulfil these tasks, which they do not possess or do not possess in the sufficient quantity and quality (Semrau and Werner, 2009). Thus, entrepreneurs are expected to turn to their social networks as a major source of additional resources, which can also be obtained on lower price (ibid.). Consequently, in the phase of early growth of the start-up entrepreneurs are expected to expand their networks in order to get access to additional resources, to have a timely response to market changes and customer preferences and gain legitimacy (Elfring and Hulsink, 2003). The social contacts who contribute to the successful outcomes of these activities are the social capital of the entrepreneur (Greve and Salaff, 2003). These contacts may include work and non-work connections, professional networks, friends and colleagues from previous jobs, people known by the entrepreneur's ties or relations to organizations or clusters of firms (ibid.).

Scholars adopting a social capital perspective, however, identify difficulties when applying it as an analytical tool (Jack, 2005). Research on social capital has proposed multiple perspectives (social capital as social or individual asset), definitions (community engagement, social networks or trust) and theoretical propositions (different configurations of networks bring different benefits). A following literature review will shed more light on these issues.

2.1 History of the concept social capital and evolution of its definition

Researchers have been discussing three types of capital: financial capital including cash, bank deposit, investment and credit; human capital related to personal skills, such as intelligence and other capabilities acquired through education or experience; and since last three decades, social capital (Portes, 2000). The interest of the present paper is in the last type. It emphasizes the positive consequences of sociability while these consequences are understood within the broader discussion of the term capital. In this way it reveals a new meaning of capital that is nonmonetary (ibid.).

The concept of social capital has been used to understand a wide variety of social phenomena. One of the first applications of the concept was in community studies with an emphasis on strong, crosscutting personal relationships by Jacobs in 1965 (Nahapiet and Ghoshal, 1998) and in analysing the significance of social capital for the individual by Loury in 1977 (Nahapiet and Ghoshal, 1998).

Since then, theoretically the concept has been extensively developed with acknowledged contribution of James Coleman, Ronald Burt, Robert Putnam and Alejandro Portes (Woolcock, 1998). Coleman and Loury studied the role of social capital for the development of human capital, Baker analysed its impact on the economic performance of the firm, Putnam and Fukuyama extended its application to geographical regions and nations, respectively (Nahapiet and Ghoshal, 1998). Given the fact that at this time researchers increasingly recognized that entrepreneurship is embedded in a social context, it was inevitable that academia extended the logic of social capital to studying entrepreneurship (Koka and Prescott, 2002, quoting Burt, 1992 and Tsai and Ghoshal, 1998).

In this early stage of the conceptualization of social capital, defining what is at the core of the concept generated two conflicting opinions.

Coleman employed a functional approach to social capital arguing that:

Social capital is defined by its function. It is not a single entity, but a variety of entities having two characteristics in common: they all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within the structure. Like other forms of capital, social capital is productive, making possible the achievement of certain ends that would not be attainable in its absence. (Coleman, 1990:302 in Tirmizi, 2005, p. 32)

Coleman considered as forms of social capital the obligations, expectations, trust, information channels, norms and sanctions, which are embedded in social relationships and facilitate individuals' actions (Tirmizi, 2005, Kirst, 2009). Adapting Coleman's definition to present social capital as a community attribute, Putnam defined the concept as:

"features of social organization, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions" (Putnam, 1993:167 in Tirmizi, 2005, p. 32).

An alternative to the functional approach to social capital is considered the network approach. Researchers refer to the seminal work of Bourdieu who defined social capital as:

the aggregate of the actual or potential resources which are linked to the possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition - or, in other words, to membership in a group - which provides each of its members with the backing of the collectivity-owned capital (Bourdieu,1986:249 in Tirmizi, 2005, p.37).

According to Portes (2000), Bourdieu's definition makes social capital 'decomposable' in two elements: social relationships that provide individuals with access to resources possessed by their social ties and

the amount and quality of these resources. In this sense, social capital is a relational asset and trust, norms, sanctions and obligations are seen as attributes of social relations and structures of social networks (Lin, 2001).

The network approach was further developed, influenced by the work of network theorists who referred to social networks or network structure as the core of social capital (Fu, 2004). They realized that the approach may reflect two perspectives – egocentric and socio-centric (ibid.). The egocentric perspective, looks at the relations that individual actors have with one another (ibid.). In this case, social capital consists of direct relationships of the individual with others and individuals who they can reach through their direct ties. The socio-centric perspective considers that social capital is based on the relative position (location) that an individual takes within a network which may provide them with a competitive advantage (ibid.). Robert Burt's work is representative for this perspective arguing that social capital is based on the identification of the location of individual nodes in a network and assessment of their distance to a strategic location that would allow them to broker the flow of information between individuals (structural hole) (Kim and Sherraden, 2014; Lin, 2001).

Researchers, however realized that looking at social capital as a one-dimensional, structural phenomenon is not enough to conceptualize its complex nature (Fornoni, et al., 2011). Granovetter has been one of the first authors acknowledging the presence of multidimensional character of social capital and distinguished between structural and relational dimension (Nahapiet and Ghoshal, 1998). The structural dimension of social capital presents the patterns of connections/ linkages between actors – or in other words who you reach and how you reach them (ibid.). It concerns properties of the network as a whole (ibid.). According to Koka and Prescott (2002) the structural dimension of social capital is characterized by network size, density, centrality and structural holes. The relational dimension focuses on the nature/ characteristics of the personal relationships formed by individuals through a history of interaction that influence their behaviour. Such relational assets are respect and friendship, trust and norms of behaviour, obligations and expectations, or routines (Nahapiet and Ghoshal, 1998, Koka and Prescott, 2002). According to Koka and Prescott (2002) the nature of advantages that these two dimensions provide are different and thus they should be treated separately within the general analysis of social capital. It can be observed that while, the socio-centric perspective has been largely adopted within the structural dimension of social capital, the egocentric perspective can be nested in both of them depending on selected characteristics. Finally, researchers identify a resource dimension of social capital, developed on the ground of the sociological work of Lin (2001) (Fornoni, et al., 2011). This dimension refers to the value and diversity of resources accessible through social networks and their dependence on the qualities of the ties within the individual's network such as their occupation and job position (Lin, 2001). A synthesis of these three dimensions together with the measures that researchers developed to analyse them and indicators adopted in order to capture these measures is presented in Table 2.

Table 2: Dimensions of Social Capital, based on Lin (2001)

Dimension	'Measurement'	Indicators
Structural	Network location or direct relationships	structural holes, density, size, centrality, betweenness, closeness, eigenvector
Relational	Strength of ties	intimacy, intensity, interaction and reciprocity
Resource	Network resources Contact status	range of resources, variety of resources contact's occupation, authority and sector

This multidimensional understanding of social capital incorporates trust, norms, sanctions, etc., as elaborated by the functional approach of Coleman, however they are seen as attributes of social relations and social networks and not as social capital itself. In this sense, analysing social capital as trust, norms and obligations (functional approach) would mean to omit the fact that these attributes appear and exist due to particular social relations and network structures. This is the view that this paper holds and thus it follows a multidimensional network approach to social capital. The multidimensional understanding ensures a holistic approach to social capital where advantages stem both from network structure and relationship qualities.

The research is concentrated on the entrepreneurs' relations with their contacts and individuals they can reach through these contacts, meaning that it takes an egocentric perspective. The choice is based on the argument that through this approach the author can identify the relations and resources that entrepreneurs actually make use of and thus is seen as providing more accurate results of the advantages of social capital on entrepreneurial performance and behaviour. Additionally, a socio-centric view is adopted when boundaries of a network can be drawn (Chung et al., 2013), which is not the object of study here. By applying an egocentric perspective, the structural dimension of social capital identifies who are the entities (actors, organisations or social groups) entrepreneurs reach and whether they represent dense or sparse networks. Within the relational dimension, strong and weak ties are distinguished and the consequences they have for the amount and type of obtained advantages. The resource dimension reveals the content of network relationships.

2.2 Structural dimension of social capital – dense and sparse networks

Initially, the discussion about the importance of dense and sparse networks was marked by the opposing views of James Coleman and Robert Burt (Semrau and Werner, 2014). The concept of network closure or density of social relations was first introduced by Bourdieu (Lin, 2001). Taking a class perspective, he justified the positive effect of dense social networks in the preservation of a group/ class dominant position (ibid.). Coleman, applying the idea on the individual level, claimed that networks of densely tied to each other individuals are advantageous for social capital and result in formation of trust, norms and sanctions (ibid.; Beerkens, et al., 2003). A closed social network where individuals are highly interconnected maintains obligations, sets norms and impose sanctions on forms of social behaviours (Fu, 2004). In contrary, a more open social structure would not allow the detection

and punishment of norms' violation and thus would decrease trust within the members of the network (ibid.).

Contrary to this proposition, Burt (1982, 1992) claimed that firms benefit from sparse networks with few redundant contacts (Semrau and Werner, 2014). In sparse networks individuals are connected to alliances which are themselves not connected to the same networks as the individual (Beerkens, et al., 2003) In addition, it is assumed that these alliances belong to different industries, serve different market segments and work with different technologies (Koka and Prescott, 2002). Within the discussion about sparse networks, Burt coined the term *structural hole* to describe gaps in people's network structure that can be used by them to broker access to certain resources (Fu, 2004)

Lin (2001) argue that the objective of research should be to conceptualize in which situations denser or sparse networks would generate more return. Thus, the aim of the following overview is to present the potential of both dense and sparse networks to bring positive, but different type of added-value to entrepreneurs.

Influence of dense networks

The advantages of *this clique-like structure* of a network stem from the opportunity of the connected individuals to facilitate resource exchange, combine their skills, share their knowledge and benefit from economies of scale (Beerkens, et al., 2003; Semrau and Werner, 2014). Interconnected actors in dense networks tend to possess similar information which enables them to validate it and enhance its reliability (Koka and Prescott, 2002). In such network structure, information is available in a shorter distance and diffuses in shorter time (ibid.). Thus, individuals reduce their resource' acquisition costs and time consumption for searching resources.

In addition, the presence of strong ties with similar contacts enables 'exploitative learning' which increases productivity (Koka and Prescott, 2002, p. 798). In the process of exploitative leaning individuals team up to share costs and risk in obtaining existing, complimentary know-how and in this way avoid duplication of efforts (Beerkens, et al., 2003). Furthermore, the experience in communication or collaboration with particular ties results in the *development of routines and shared language* that enhance communication and knowledge transfer (ibid.). Effective coordination is achieved in this process, reducing opportunistic behaviour and building norms of reciprocity. Dense networks are also supposed to facilitate the emergence of trust and norms of behaviour which enhance the transfer of tacit knowledge and particular information (Bhagavatula et al., 2010). In this sense, dense networks 'lubricate' economic transactions (ibid., p. 248).

Influence of sparse networks

When it comes to sparse networks, the benefits of social capital are related to the access to more diverse set of resources due to the fact that the network ties possess different kinds of information (Koka and Prescott, 2002). Sparse networks are advantageous when entrepreneurs search for new resources or new entrepreneurial opportunities (Lin, 2001). This is why scholars claim that in the early stage of the venture development founders develop a wider web of sparse networks so that they can obtain otherwise not affordable or accessible resources . According to Elfring and Hulsink (2003, p. 413) *sparse networks "facilitate the search for critical asset providers (e.g. investment and technology partners and key customers), who may offer the start-up further access to financial resources, production know-how and complementary technology, distribution channels, etc"*.

In addition, the fact that the network consists of non-redundant contacts enables the individual to get novel, non-redundant information as well. Thus, Burt considered sparse networks as sources of more efficient exchange of new resources that may be 'privileged' for the entrepreneur embedded in a sparse network (Bhagavatula et al., 2010; Koka and Prescott, 2002; Lin, 2001). Additionally, timing is an important feature of the access to information and an advantage of sparse networks is the ability to reach information early (Burt, 1993).

2.3 Relational dimension of social capital – strong and weak ties

The relational dimension focuses on the particular qualities that mark the relationships people develop with each other (Nahapiet and Ghoshal, 1998). Within this dimension, the mix of strong and weak ties has been at the core of the discussion about the benefits that social networks bring (Elfring and Hulsink, 2003; Jack, 2005). Granovetter's (1973) classic work on the strength of weak ties has initiated the research on the impact of ties of different quality – strong or weak. Strong ties are marked by higher emotional intensity, frequency of interaction, reciprocity and degree of intimacy (Kim and Sherraden, 2014). Weak ties are infrequent (ibid.). According to Granovetter, strong ties are typical for family relations or friendships, while connections to business network members represent weak ties, a view that has been changing with further research, arguing that strong ties are not confined to family members and friends (Semrau and Werner, 2014). Since Granovetter's seminal work, researchers empirically analysed how entrepreneurs' performance is influenced by support from strong ties on the one hand and weak ties on the other, trying to identify which type has more potential to bring advantages for the entrepreneur, and to feed back into the theoretical propositions.

Bhagavatula, et al. (2010), Elfring and Hulsink (2003) and Pinho and de Sá, 2013 point out that research findings on the value of strong *versus* weak ties are not necessarily conflicting. Ties of different quality play different roles and have different value depending on the actors concerned and relations' purposes.

Strong ties

The support provided by strong ties is richer, more detailed and accurate as it comes in the form of fine-grained information and tacit knowledge or joint problem solving (Jack, 2005; Elfring and Hulsink, 2003, 2007). These advantages are borne due to the presence of trust and routines of interaction and collaboration that strong ties are endowed with (Elfring and Hulsink, 2003, 2007; Lechner and Dowling, 2003).

Researchers find that start-ups turn to their strong ties when it comes to the feasibility of the opportunity that they recognize for their business and to elaborating on it in greater detail (Greve and Salaff, 2003). Close social support networks like family and friends are important as a source of financial or human capital that is absent within the configuration of the enterprise as well as for advice and feedback on the core ideas (Elfring and Hulsink, 2003, 2007).

In addition, it is argued that strong ties provide access to motivation and links to other social circles (Jack, 2005). They can also be beneficial for development of the firm's customer base and provide information about the local conditions (ibid). Strong ties with institutions with good reputation are an important asset in gaining legitimacy, especially when producing innovative products or service (Elfring and Hulsink, 2003, 2007). However, as the activities of the venture have to be endorsed by the wide public as well, and weak ties are better suited for these purposes (ibid.).

Weak ties

Weak ties represent contacts with whom the entrepreneur has some infrequent and irregular connections (Bhagavatula et al., 2010). The value of weak ties is not related to the weakness of the relation, but to the opportunity they present to connect to various social systems (Jack, 2005). Weak ties, researchers argue, are contacts which move in different social circles than the one in which the entrepreneur operates. This increases the chances that these ties can provide new, non-redundant information (ibid.). Some authors (Elfring and Hulsink, 2003) extend the understanding of weak ties to claim that these are actors working in different social contexts and source of more diverse set of resources. Thus weak ties can be important for providing access to potential markets, innovations and opportunities, new business practice or new business contacts (Bhagavatula et al., 2010, Elfring and Hulsink, 2007).

2.4 Resource dimension of social capital

The resource dimension of social capital reflects the value of resources that networks provide and the strategic contacts that actors possess in their networks. Kim and Sherraden (2014) argue that even though networks may be largely similar in size, density, and ties' strength, they may provide different range of viable economic resources. However, it is observed that empirical research on social capital addressing the access to specific resources in detail is surprisingly scarce (Semrau and Werner, 2009).

In quantitative research, this dimension is discussed through indicators such as number of accessible resources, best resources or variety of resources (Kim and Sherraden, 2014). Other researchers have tried to identify the correlation between particular network structure and categories of resources. These studies argue that depending on the resources entrepreneurs need, they develop different types of networks. Semrau and Werner (2009) identify four categories of resources that entrepreneurs may acquire through their social capital: (1) financial capital, (2) guidance, information and knowledge, (3) social or emotional support; (4) contacts with potential customers, investors or consultants. According to Brüderl and Preisendörfer (1998) networks influence newly founded business by (1) providing channels to information, (2) opening access to customers and suppliers, (3) broadening the financial basis and (4) providing emotional support and unpaid family work.

When it comes to the contacts within the actors' networks, literature refers to contact's power and wealth usually indicated by the contact's occupation, authority position and industrial sector (Kim and Sherraden, 2014). Pinho and de Sá (2013) find that better performing businesses connect to more strategic partners and vice versa. Kim and Sherraden (2014) prove that male entrepreneurs connect with larger number of core associations which have more information and resources, such as economic institutions, while female entrepreneurs often connect with smaller and more peripheral organizations which do not deliver equally viable economic returns.

The occupation and authority of the entrepreneurs' contacts are important indicator of whether they are able to provide the resource sought by the entrepreneur and if they are a reliable contact. In order to have rich information benefits, individuals establish contacts in the places where useful information 'is likely to air' (Nahapiet and Ghoshal, 1998, p. 252). When building their reputation, start-ups seek highly visible partners (Lechner and Dowling, 2003). In the process of developing business ideas entrepreneurs need critical contacts.

2.5 Theory limitations

The social capital theory has its critics, arguing that there are definitional, measurement and interpretive challenges (Kirst, 2009; Lynch et al., 2000) arising throughout its application. It can be observed that the concept covers a wide range of domains such as collaborative planning, water management, health care and entrepreneurship which employ different levels of analysis, definitions and operationalization approaches. This is probably one of the reasons why Jack (2005) claims that there is an analogue between social capital literature and a 'terminological jungle in which any newcomer may plant a tree' (p. 1233).

Woolcock (1998) argue that, as it often happens with promising concepts in social science, limited critical attention has been paid to social capital conceptual and ontological status. He observes that the issue of whether social capital is the infrastructure or the content of social networks, or both, is unsolved by research. Analysing the implication of social capital on economic development, Woolcock says that the concept "... risks trying to explain too much with too little." (Lynch et al., 2000, p. 404). While this can cast doubts on the rigidity of findings from social capital research, it also calls for development of further solid theoretical and empirical understanding. In order to mediate the raised issues, the current research has made an extensive overview of the concept from different research fields which informs the application of the concept as an analytical tool. A multidimensional perspective is taken in order to reveal different outcomes depending on different dimensions. The study performs qualitative analysis with the intention not to measure but to understand the utilization of social capital in the settings of the selected case study. In this way it avoids possible measurement implications.

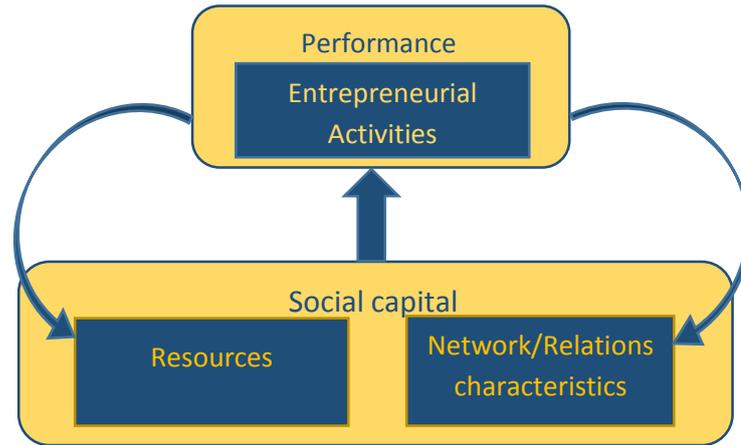
CHAPETR 3: CONCEPTUAL FRAMEWORK

Brüderl and Preisendörfer (1998) identify two strategies to operationalise the network approach on entrepreneurship. The first strategy focuses on the characteristics of the entrepreneur's network such as networks size and density and ties' strength, and analyses the effects of these characteristics on business performance. The second strategy looks at the *activities* performed by the entrepreneurs during the venture formation and development and the amount of support they actually receive from their social networks (ibid.). According to the authors, this strategy also allows the researcher to identify certain relation characteristics such as the degree to which the entrepreneurs use weak or strong ties, or the amount of people they turn to. These characteristics are recognized to have influence on the access to particular type and amount of resources (ibid.). To certain extent this strategy follows the view of Semrau and Wermer (2009). They note that while researchers have been occupied to analyse the *correlation between network characteristics and founders success*, they paid little attention to *how networks and networking activities affect the availability of particular types of resources which consequently can be used to enhance business performance*.

This research follows the second strategy proposed by Brüderl and Preisendörfer (1998) for two reasons. First, the choice is based on the adopted by the author understanding of social capital, namely, that when entrepreneurs' contacts contribute to the achievement of their goals, these contacts are entrepreneurs' social capital (Greve and Salaff, 2003). On second place, this strategy allows for the multidimensional conceptualization of social capital with its structural, relational and resource dimension.

Based on this strategy, the research constructs a conceptual model that frames the analysis as visualized on *figure 2*. Broadly, it represents the interconnectedness between entrepreneurial performance and social capital. The first element consists of different entrepreneurial activities which disentangle the concept of entrepreneurial performance. The second element is the concept of social capital that is believed to enhance entrepreneurial performance. In this model social capital incorporates the structure of the entrepreneurs' network (networks in which entrepreneurs participate in and benefit from) and the nature of the relationships between the entrepreneur and their alters. The second dimension of social capital is the resources that become available due to the structure of the network and nature of the relationships. Finally, the model presents the idea that social capital is dynamic and dependent on performed entrepreneurial activities. In this sense, while social capital enhances entrepreneurial performance, the latter defines the former as well. This reflects the dynamic view on network development as studied by Lechner and Dawling (2010) and Elfring and Hulsink (2007) who argue that post-founding entrepreneurial activities influence tie formation.

Figure 2: Conceptual model



Source: Author's own

Operationalization

Entrepreneurial performance

In order to disentangle the first element of the conceptual model, a technique to chart major events in terms of entrepreneurial activities was adopted (Elfring and Hulsink, 2007).

According to Greve and Salaff (2003) the initial stage of business foundation is associated with the process of motivation and planning, Casson and Della Giusta (2007) talk about opportunity seeking and Elfring and Hulsink (2003) call it discovery and exploitation of opportunities.

According to Casson and Della Giusta (2007) opportunity seeking is mainly about gathering information. In this process, a certain societal need/ problem and the application of a possible solution are identified by the entrepreneur who obtains information from various societal circles in order, for example, to assess the potential local demand (ibid.). According to Elfring and Hulsink (2003) this process includes gathering relevant information about markets, ways to serve these markets and ways to deal with customers.

When realizing a business opportunity, entrepreneurs perform discussions on their initial idea and develop the business concept with carefully selected circle of people (Greve and Salaff, 2003). Entrepreneurs contact others primarily to test the ideas and get emotional and social support (ibid.). The new idea needs to be tested against critical persons who can give valuable advice (Greve, 1995).

Resource acquisition is important step for the further realization of the business idea (Casson and Della Giusta, 2007; Elfring and Hulsink, 2003). Entrepreneurs rarely possess all the resources they need in order to seize an opportunity while they also try to secure resources at minimal cost (Elfring and Hulsink, 2003, 2007). In order to realize their idea, they need to mobilize labour and capital. Ties with resourceful people who can connect the entrepreneur to critical resources is thus important (Greve, 1995).

In the following phase of early growth of the firm, two interlinked activities are discussed by literature. According to Lechner and Dowling, (2003) the young start-up faces the liability of newness and needs to establish its reputation. Elfring and Hulsink (2003) also identify that social networks relate to the process of gaining legitimacy. Legitimacy is connected with the process of understanding the nature of the new venture through the spread of knowledge regarding its business (ibid). In order to achieve

this, entrepreneurs seek ties with ‘highly visible partners’ or ‘prestigious business affiliate’ (Lechner and Dowling, 2003, p. 11, Elfring and Hulsink, 2003, p. 413). The second major event in early growth is securing distribution channels and market share (Casson and Della Giusta, 2007; Lechner and Dowling, 2010). In most cases, this is connected with diverting the trade channels that are developed by existing competition (Casson and Della Giusta, 2007).

Through the exploitation of the initial technology base, firms aim to generate substantial sales which are facilitated by the development of marketing networks (Lechner and Dowling, 2010). Lechner and Dowling (2010) mention the importance of the referral process when, for example, current customers of the firm refer it to others who become customers as well. In this phase entrepreneurs also aim at procurement of knowledge/ information updates on markets and changes in customer preferences (Bhagavatula et al., 2010). As a consequence, the firms enhance their technology platform and introduce product/ service improvements (Lechner and Dowling, 2010). The performance of these activities may require a focus on developing technology partnerships for access to and exchange of technological knowledge (ibid).

Drawing on the above literature review a comprehensive list of eight entrepreneurial activities is prepared. Additional details (specifics) are selected to the outlined general activities and are together presented in Table 3. This comprehensive list allows the research to observe how the different components of entrepreneurial performance are facilitated by social capital as well as how social capital is accumulated in the performance of business activities.

Table 3: Entrepreneurial activities

Activities	Specifics
1. Discovery of business opportunity	Obtain information about the relevance of the new product/ service to the market. Discuss the business idea and receive advice and opinion.
2. Develop business idea	Test business prototype. Get feedback and opinions about customer preferences, secure technological knowledge
3. Acquire human capital	Build founding team and hire personnel
4. Gain customers and market share. Acquire information about dynamics on the market	Get access to the market and build distribution channels. Acquire information about competition. Expand customer base (gain new clients) and secure enhanced market access in existing markets or entering new markets through information updates and referral process.
5. Gain legitimacy and reputation; marketing	Attract reputable partners and spread knowledge about the business
6. Acquire and sustain entrepreneurial motivation	Receive encouragement to start own business, coping with pressure, risk, failures, etc.
7. Acquire financial resources	Enter in partnerships, contacting VCs/ business angels
8. Perform product improvement	Introduce new features of the product that better meet the needs of the market or allow for penetration in new markets

Source: Author's own

Social capital

Based on the elaborated entrepreneurial activities, certain categories of resources that are potentially mobilized through social contacts and enhance performance can be identified. These categories represent the resource dimension of social capital. This research refers to the following categories of resources – information, advice, knowledge, financial resources, entrepreneurial aspirations and access to additional contacts.

The availability of these resources, in case not in possession by the start-up founders, is dependent on who they can contact in order to gain access to them on the lowest possible price. The type, amount and quality of the accessed resources, however, also depend on the characteristics of the relations that entrepreneurs develop with their contacts – weak or strong - or on the characteristics of the network (e.g. an organisation) that contacts, providing the resource form – closely-connected or disperse actors. Thus, the resource dimension of social capital is combined with the structural (network density) and relational dimension (strength of ties) which results in a multidimensional conceptualization of social capital.

The three dimensions of social capital are studied through an ego centred perspective (as opposed to socio-centric analysis that was explained in the Chapter 2). This means that the research explores relationships of each entrepreneur (called ego) with their ties (called alters), i.e. a view as perceived by the individual at its centre, rather than the total network in which the ego and alters are embedded (Semrau and Werner, 2009).

Identification of network/relations characteristics through indicators.

The structural and relational dimension are operationalized by selection of qualitative indicators. Additionally, indicators are selected to identify certain attributes of dense networks and strong ties – trust, common language and routines - in order to receive a more precise picture of how network/relations characteristics determine access to resources. The use of indicators is justified by the complex nature of the concepts, and the need to have a unified understanding of them when studying the different start-ups which can be further compared. Definitions that are too narrow are not considered as they can exclude important issues (Casson and Della Giusta, 2007).

Network density

Dense networks are defined according to theoretical propositions as group of individuals who all know each other and who belong to the same social circle, i.e. present a homogeneous group. They share established routines, language and trust. The presence of these commonalities provides access to these 'communities' and facilitates particular resource exchange. Sparse networks, on the other hand, comprise of individuals belonging to different economic sectors who are disconnected from each other.

Strength of ties

Initially, strength of ties has been defined by Granovetter (1995) as a combination of emotional intensity, frequency of interaction, the degree of intimacy (mutual confiding), and reciprocity (Elfring and Hulsink, 2003). Further research has analysed strength of ties through different indicators such as duration of the relationship, frequency of interaction or time spent on developing and maintaining network contacts as well as trust (Semrau and Werner, 2014; Bhagavatula et al., 2010). In most cases, selected indicators aimed at reflecting a cost perspective (evaluation of time and energy spent on the relationship).

Following prior research practices, this research identifies strong ties on the basis of three indicators which reflect both cost perspective and depth of relationship. In this way strong ties can be identified both among personal and business ties. Selected indicators are also seen as possible to be operationalized within the limits of the current research. First indicator is emotional intensity understood through the concept of *closeness* (Marsden and Campbell, 1984). This means that friends and family relations are emotionally intensive (ibid.). Second indicator is the intensity of interaction that can be identified either through length of the relationship or frequency of communication. The third indicator is reciprocity indicated by performance of reciprocal services. Weak ties, on the other hand, are temporary in nature (Bhagavatula et al., 2010).

Trust

Trust is developed in various contexts – within family, among friends, colleagues or within organisations (Fu, 2004).

While trust can be seen as potentially ambiguous concept (Casson and Della Giusta, 2007), a main characteristic of scholars' definition is that it represents confidence in or reliance on someone's quality or truth of a statement (ibid). This is the definition applied in this study as well. This view suggest that patterns of uncertainty and vulnerability to another party is critical to trust (Lewicki and Tomlinson, 2003). These patterns are identified in this research in case a "voluntarily placing [of] resources at the disposal of another" is reported by the entrepreneurs (Moorman, et al., 1993, p. 82). The research considers both cognitive (calculus) and emotionally driven trust (Lewicki and Tomlinson, 2003). The first implies that the individual calculates how the other party is likely to behave in a given situation depending on the rewards for being trustworthy or due to their good reputation and consistent behaviour of fulfilling obligations. The latter is grounded in perceptions of interpersonal concern (ibid).

Routines and common language

Better understanding between ties (common language) and creation of routines are facilitated by prior history of interaction and collaboration between involved individuals (*repeated ties*) or by the performance of multiple activities with the same tie (*multiple ties*) (Koka and Prescott, 2002). The presence of these indicators (together or separately) serve to identify routines and shared language between the entrepreneurs and their ties in this study.

CHAPTER 4. METHODOLOGY

This chapter is occupied with presenting the qualitative research design conceived by the study and the philosophical assumptions within it. Details about the choice of case study strategy and sampling together with methods for data collection and analysis follow afterwards. Lastly, the chapter discusses the criteria for evaluating its quality and the limitations of the applied methods.

4.1 Philosophical Assumptions and Rationale for Qualitative Research Design

Quantitative and qualitative research can be viewed as having contrasting preoccupations due to the basic *philosophical worldviews*⁴ that researchers bring to the study and consequently the *research strategies* and *specific methods* they employ to conceive the study (Creswell, 2009). These worldviews are related to the questions of how reality is known (epistemology) and what is the nature of reality (ontology) (ibid.).

The author of this research holds a *social constructivist worldview* as an ontological orientation. Reality, or selected parts of it, is not naturally given but socially constructed (Aalvesson and Sköldbberg, 2009). In order to understand how this construction process is conveyed, the researcher seeks to understand the context in which particular events, activities or human behaviour unfold (Creswell, 2009). This worldview reflects the topic of this research, which studies entrepreneurship and entrepreneurial behaviours as related to their social environment and entrepreneurs' interactions with others.

Social constructivist approach is usually combined with *interpretivist worldview* as an epistemological orientation (Creswell, 2009) which is the case for this research as well. The author supports the worldview that the objects of social science – people or communities – have the ability to attribute meaning to their environment and the events that take place there (Bryman, 2012). This requires the researcher to view social phenomena through the eyes of the people that are studied and through the multiple factors involved in a situation (ibid.). This worldview reflects the aim of this research which is *to identify the complex interaction of factors* in terms of social relations, their quality and structure that determines different outcomes for particular entrepreneurial activities.

The adoption of these philosophical worldviews determined the qualitative and explorative nature of this research. However, the inclination towards qualitative research has been influenced by two other reasons as well. Social capital research has been predominately quantitative, while there have been calls for revival of qualitative understanding of social networks (Jack, 2005; Edwards, 2010). Such calls are reasoned by the fact that the two approaches are able to explain different phenomena. While quantitative research identifies the structure of social relations, qualitative research analyses the interactional process which generates this structure and explores the content of the network and its variability (Edwards, 2010; Jack, 2005). The latter is indeed where the interest of this study is placed. In this way, qualitative research has also potential to explain the ambiguities and controversies that quantitative research in social capital produces (Lechner and Dowling, 2010). This means, that by choosing to perform a qualitative research, the added value of this study is extended as it can provide a richer theoretical understanding.

Lastly, a qualitative study shows how events, actions or patterns unfold over time (Bryman, 2012) and the present research aims to analyse the access to social capital both in the business formation process

⁴ Philosophical worldviews are defined by Creswell (2009, p. 6) as 'a basic set of beliefs that guide action'.

and business development. In this sense, it sees social networking as a dynamic process that unfolds over time as well.

4.2 Research strategy – rational for and selection of a case study

This research employs a case study strategy due to the place specific character of the studied phenomenon, its recent emergence and complex nature as well as the wish of the author to gain detailed information.

There is a growing recognition that knowledge-intensive entrepreneurship is place-based, one of the reasons being the network-based nature of innovation and the quality of 'local milieu' (Bradford, 2005, p. v) Innovations seem to thrive in local places as personal, face-to-face interactions spur learning and innovative processes (ibid.). This requires knowledge-intensive entrepreneurship to be analysed in a particular context. The case study strategy allows the researcher, who employs it, to extract such context dependent knowledge (Flyvbjerg, 2001). Sensitivity to context is further required when it comes to study a phenomenon in a transition economy where history has its specific imprint on entrepreneurial culture and places the entrepreneur in different from the Western culture environment. Additionally, social capital research is claimed to be sensitive to the economic activity to which it is applied, which is why researchers usually focus on single economic sector (Liao and Welsch, 2003). Finally, the contemporary nature of the phenomenon required the author to opt for an exploratory research. In this perspective, it is the case study strategy that is best suited to allow a detailed description and in-depth understanding of a phenomenon (Biaggio, 2013).

Entrepreneurship in transition economies has attracted considerable attention in the recent years, however, the knowledge base concerned with the case of Bulgaria seems to be limited to understanding the role of institutions and thus opens opportunities for further research. The primary reason for the choice of Sofia city and the tech-tech sector in particular is that they represent an intrinsic case – a unique situation (Creswell, 2009). Recently the city has been promoted as the 'start-up hotspot of the Balkans' (my-way in web entrepreneurship, 2015) for the high-tech industry. Sofia city and this particular sector seem to stand out compared to the present state of knowledge arguing that socially productive entrepreneurship in the country is hampered (Williams and Vorley, 2014). Thus this research aims to understand how this 'unusual case' is enabled.

4.3 Research methods of data collection and analysis

Data collection

Founders' relationships of selected start-ups have been constructed by one-time interviews conducted by the author through long-distance video calls, and by gathering secondary data from local newspapers and internet visits. In some cases, interviewees were contacted in case of additional questions.

The name-generator approach, a widely applied technique within the ego-centred network analysis, was chosen as an interview approach in order to obtain information about who are the ties of the entrepreneurs, the type of their relation and the type of advantage they provide to the start-up (Elfring and Hulsink, 2007). The advantage of the approach is that it provides detailed descriptive data, mostly used by researchers who seek to obtain a picture of egos' relationships and accessed resources (Najarzadeh et al., 2014). By employing the approach, the researcher asks the ego to provide information about their alters (Lin, 2001). The technique includes follow-up questions that generate

information on the relationship between the ego and alter (potentially also among alters) (Marin and Hampton, 2006). This stage is known as "name interpreter" (ibid.).

The name interpreter questions were used in this research to acquire information to analyse the third element of the conceptual model (relations/ network characteristics) and to uncover the presence of strong ties and dense networks and their attributes as discussed by theory - trust, routines and shared language.

- *Semi-structured interviews*

Interviews with the founders of ten selected start-up companies have been the main source of empirical data collection as interviewing is considered one of the most common and powerful ways to understand people (Jack, 2005). The interview is, however, not a neutral tool as the interviewer and his/ her personal characteristics' create the reality of the interview situation (Denzin and Lincoln, 1994).

Tailor-made questions reflecting the constructed conceptual framework were designed. Entrepreneurs were asked to recall the performance of the selected entrepreneurial activities. These activities were used to identify the accumulation of resources and generate the social contacts that were involved in these activities. Follow-up questions were asked in order to understand the role of the generated ties, the history of the relations and how they developed over time. In case that the interviewee referred to a group of actors related to particular activity or resources, additional questions followed in order to understand the characteristics of these network of actors. Interviews lasted between 50 and 80 minutes.

It should be noted that while all of the start-ups participating in this research are founded by a team of entrepreneurs, interviews were performed with one member of this team and thus the research reflects on the perceptions of these individual entrepreneurs. Interviewees are asked to report on personal experience (e.g. motivation to start a business) and on activities performed by the start-up in general which is connected with the involvement of the networks of other team members. This means that the research is dependent to the way the interviewees report on the nature of all these relationships according to their own perspective.

The construction of interview questions has been considered of high importance for facilitating the collection of research data. In order to receive information that is of relevance to the research questions and the conceptual framework, the author avoided very general questions and the use of technical terms. The wording of the questions, their open structure and their sequence aimed at avoiding loaded questions that suggest particular reply, as well as questions that take the presence of certain issues for granted (Bryman, 2012).

The interviews had semi-structured character. Responses from different interviewees needed to be comparable in order to identify categories of relations and relations content (accessed resources). Thus, all respondents were asked similar questions. At the same time, most of the questions followed an open structure. In this way, the respondents were able to reply in their own terms and in a way that may not have been considered by the author (Bryman, 2012). Questions did not always follow the same order as outlined in the interview guide but in total all questions were asked following similar

wording (ibid.).⁵ Interviews were performed in Bulgarian language and were recorded except one, when notes were taken.

In order to ensure the collection of correct and trustworthy data, the interviews were performed with founders of the companies (except of one case) who are in position to possess all relevant for this research information. However, the reported relations were not further validated by contacting firms' partners.

Due care of ethical issues was conceived in the process of data collection. Interviewees were correctly informed about the purposes of the research and were asked about their permission to be quoted. Interviews were recorded only with the consent of the interviewees. The protection of the research materials was ensured by the author and access to them is available only to ensure the trustworthiness of the performed research.

- *Sampling of start-up companies*

Researchers are rarely in a position that they can interview, observe or survey all possible individuals relevant for the research, which is why they are required to generate a sample (Bryman, 2012). Sampling was also performed for this research due to the time limits of the research process and accessibility to respondents. Details on the profiles of start-ups and interviewees are provided in Annex 2.

Several requirements have been applied in order to ensure a representative sample – companies registered in Sofia city, operating in the high-tech sector and being in initial stage of their development. These requirements ensured a homogeneous population in terms of location context, sector of operation (fast growth, innovative), and age, which are important criteria in order to be able to generalize the results.

Initially, an approach used Neergaard and Madsen (2004) was used and a list of companies which participated in two Accelerator and Seed Fund programmes based in Sofia city was generated. The sampling process followed the approach of the so called accessible cases (Bryman, 2012). Thirty companies were contacted in the period March-May 2016 and those who agreed to participate in the research were interviewed. Additionally, a snowball method was used in order to reach companies that were otherwise not accessible. This method also led to start-ups which were part of the Accelerator and Seed programmes.

Data analysis

The first step in the process of data analysis was to dismantle the collected information to the already defined categories of entrepreneurial activities, resources, and characteristics of reported relationships and networks, as defined by the conceptual model. Each reported dyadic relationship or relation to a group of people was evaluated through the developed indicators that were reflected in interview questions. In this way, data was systematically transformed into units forming an analysis for each start-up (Elfring and Hulsink, 2007). In this perspective, a deductive approach was followed. Categories and indicators were selected as emerging from the knowledge base of social capital theory and empirical data was collected guided by these categories. This stage was related to the analysis required to answer the first and second research question.

⁵ The Interview guide can be found in Annex 1

The second step of the data analysis was to look at the interconnectedness between the performance of the start-ups in terms of entrepreneurial activities and dimensions of social capital. The second step was guided by a deductive and inductive approach. This combination allowed the author to operationalize the predefined categories and indicators and at the same time to interpretatively understand from the empirical case the reasons driving the interplay of these categories and indicators over the set of companies. A cross-case comparison was applied in process-oriented manner (Elfring and Hulsink, 2007).

The performance of this second step required the analysis to look for causal relationships. According to Huberman and Miles (1994) 'qualitative studies [...] are especially well suited to finding causal relationships; they can look directly and longitudinally at the *local processes* underlying a *temporal series of events* and states, showing how these *led to specific outcomes*' (p. 434, stress added). Bringing causality to qualitative research is facilitated by particular understanding of causality (ibid.). It necessitates the researcher to reflect on time as part of the explanation because prior events are connected with later events (plots) and to adopt a variable-oriented reflection (ibid.). And while 'a variable-oriented viewpoint will always show a looping back of assorted effects onto causes that produce new effects [...], the 'plots' still unfold over time and must be understood that way at the case level. This is where the more narrative versions of causal analysis find their place' (p. 434). This understanding of causality also rejects drawing strictly bounded rules (e.g. A before B or when A, always B) as well as determining only one cause for certain effect (ibid.)

The above elaborated approach is considered to reflect the developed conceptual model for this research and thus was followed in the performance of the second step of the analysis. Local processes, including the social capital already at the disposal of the entrepreneurs, facilitate the recognition of entrepreneurial opportunity and result in business foundation. This initiates a process of various entrepreneurial activities which unfold over time enhanced by particular type of social capital while also imposing changes over it.

The analysis of these complex interrelations is performed for each studied start-up, subjected further to cross-case comparison (Elfring and Hulsink, 2007). In this comparison, systematic similarities are sought. This approach allowed the author to answer the third research question.

The results of this work is presented in the next chapter while framed by set research questions.

4.4 Quality criteria to qualitative research

Several criteria, based on Lincoln and Guba (1985 in Bryman, 2012) were considered in order to ensure the quality, rigor and the wider potential of the performed research.

On first place, the **credibility** of findings is ensured through triangulation of data sources and data collection: interviews, company press releases, social media channels, online and newspaper articles were used in the process. In this way richer information was collected specifically about the relations of the start-ups with clients and other partners, the history of the start-up and the members of the team. In certain cases, interview questions were extended in order to cross-check data received from other sources and other way round.

It is recognized that the finding of this research hold 'contextual uniqueness' which causes issues with generalization (Bryman, 2012, p. 392). In order to ensure the **transferability** of results, the research relied on the technique of thick description of the studied phenomenon that would allow others to make judgement on the potential of transferability of findings to different settings (Bryman, 2012).

The author has ensured substantial engagement with the subject through data collection and analysis in order to explore a variety of details. The **dependability** (reliability) of the research is provided by a meticulous documentation of the research process and its accessibility to peers – problem recognition and formulation, construction of interpretive framework, selection of research participants, interview guide, and data analysis decisions⁶.

The **confirmability** of the study is facilitated by the presentation of contrasting perspectives and argumentation of the author for her research design and method choices. In addition to that, the author has been self-critical about choices of methodological nature and shortcomings of the research in general. In relation to transparency issues, it should also be pointed that the author of the research is Bulgarian and has gained work and education experience in the studied regions over more than five years. This allowed a deeper understanding of local culture and social norms in Sofia as well as substantial knowledge related to historical implications in Bulgaria in general.

4.5 Limitations of the methodological approaches

The presence of the researcher in a qualitative study raises issues with the implications of their own values and biases for knowledge construction (Bryman, 2012). In order to overcome such issues, researchers are required to involve themselves in self-critical examination of their own beliefs and attitudes which is challenging to ensure (ibid.). However, as Bryman (2012) points out the research has only limited potential to adopt the views of people being studied. Thus, this paper developed pre-defined indicators based on the current state of knowledge on the topic in order to avoid the influence of author's views in the interpretation process.

In addition, qualitative approach to social capital are seen as partial due to missing data on the total set of ego's network (Edwards, 2010). It is also the recognition of this study that the collection of in-depth information about certain relations is at the expense of a full account of ego's network. This is, however, in essence the nature of qualitative research that is occupied with the depth rather than with the breath of data (Bryman, 2012).

In addition, scholars claim that 'research that investigates established cases and asks about their history suffers from potential bias due to memory decay and hindsight bias, or rationalization after the fact.' (Davidsson and Honig, 2003, p. 311). In this study, founders of established firms are asked to recall the process of opportunity recognition and start-up establishment which poses a risk that they interpret these processes differently over time. In order to cope with this risks, the sample for the study is comprised of start-ups established in the last four years.

A limitation concerns the definition of the concepts that this study analyses. Social concepts can assume a variety of forms and phenomena may reflect one or another of these forms (Bryman, 2012). Thus, understanding concepts through the elaboration of fixed indicators does not allow these concepts to present their nuances and alternatives of viewing them (ibid.). This study recognizes that the developing indicators for measuring the presence of trust, strong relations, routines, etc. may have limited the way they can be understood by different actors and consequently by this research. At the same time, however, it is not clear to what extent a concept can be open for interpretation so it can still guide the performed research (Bryman, 2012). Thus, a group of indicators were selected in a way

⁶ The way interviews are documentation of is presented in Annex 3

they can both *frame* the definition of the concepts and *reflect* their complex nature. The selection of a group of indicators relieves the concern of understanding concepts one-sidedly.

Finally, interviews were performed over Skype instead of face-to-face meetings which can raise ethical concerns (Cooper, 2009) and concerns over the potential of information sharing. Online interviews, however, are seen as particularly relevant in entrepreneurship research, where busy entrepreneurs tend to agree on participation when there is an online option due to their unpredictable schedules (Moulson, 2015). Additionally, videoconferences are part of their business culture and thus it is considered that online interviews would cause little disturbance in communication process and limitations in sharing information.

CHAPTER 5. HIGH-TECH START UPS IN SOFIA: BETWEEN TWO REALITIES. EMPIRICAL ANALYSIS.

Sofia high-tech entrepreneurship is found to operate between two realities. On the one hand, it bears the intrinsic consequences of its context, post-socialist and economically constrained. On the other hand, it gets closer to the norms of its Western counterparts through internationalization. The former means that approaches to entrepreneurship are characterized by certain unique patterns for a transition economy. The latter means that high-tech entrepreneurship in Sofia appears to show distinctive characteristics compared to general knowledge about entrepreneurship in Bulgaria. Detailed discussion is presented in the following sections, starting with a description of the research population of this research.

5.1. Characteristics of research population

Start-up companies in the high-tech sector in Sofia seem to be established by people falling in various age groups – from university students to middle aged, with the former being one-third of the total population here. All of interviewed founders have gained educational degree in Sofia and several of them also studied abroad (Company D, E, G, H and I). In the majority of cases, entrepreneurs have gained substantial work experience (*table 4*), in half of the cases combined with experience in founding previous start-up. Founders of Company C, D and F have taken managerial positions in their previous work experience.

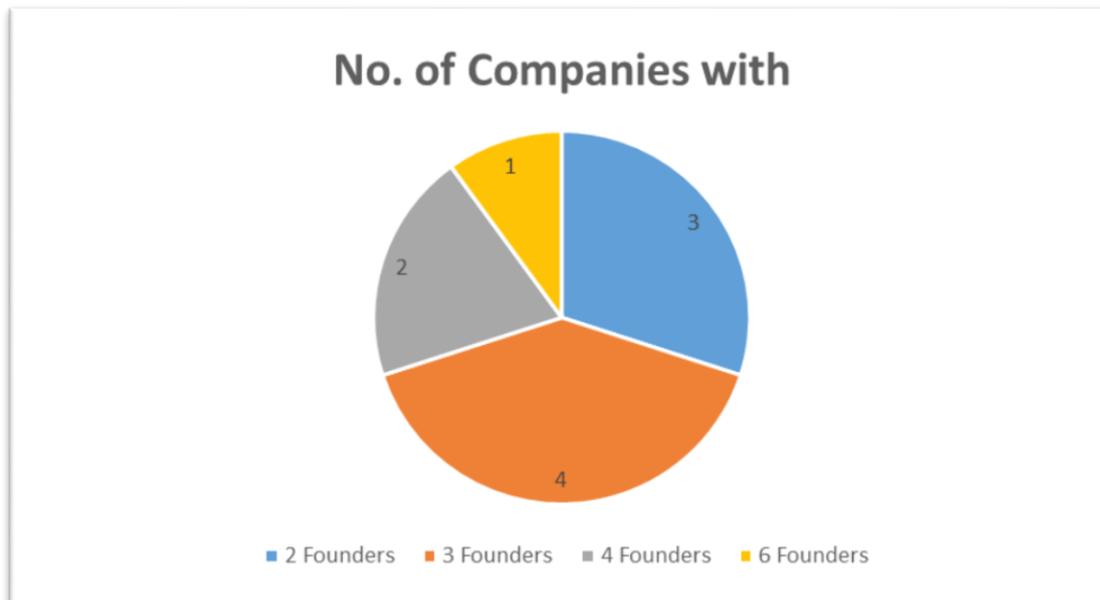
Table 4: Basic characteristics of sampled companies and interviewed founders

Company	Interviewed founder work experience (years)	Previous start-up experience of interviewee	Company foundation date	Business activity	Nº of Employees (without founders)
Company A	+13 Years	Yes	2011	Cloud-based service	4
Company B	+10 Years	No	2014	Online market place	0
Company C	+20 Years	Yes	2014	Mobile App	6
Company D	+10 Years	Yes	2012	Online market place	8
Company E	+15 Years	Yes	2012	Cloud-based service	3
Company F	+20 Years	No	2014	Cloud-based service	5
Company G	+5 Years	No	2013	Cloud-based service	7

Company H	+10 Years	Yes	2013	Cloud-based service	2
Company I ⁷	+ 6 Years	No	2015	Online market place	2
Company J	+3 Years	No	2012	Online market place	7

The start-up companies were founded in the period 2011-2015. All start-ups were founded by a group of entrepreneurs – between two and six (*figure 3*) and have recruited additional personnel. However, for some firms (company G and I) these include part time job positions as well.

Figure 3: Size of founding team



It also seems that in some case, start-ups' business is highly-related with business innovation (online market place) and in others, this is combined with more substantial technological innovation (cloud-based and app services). A detailed description of start-ups' activities is presented in Annex 2. Company B, I and J still function entirely on the Bulgarian market, while the rest of the companies already extended their markets abroad, predominantly in the United States, UK and Middle East.

5.2 Characteristics of social relationships and networks, and type of resources they secure

The empirical work established that weak ties and sparse networks are found to play more important role for sampled start-ups over the process of their growth. This phenomenon becomes visible in comparative perspective of sampled start-ups and is highly related to the process of

⁷ The interviewee from company I was not a founding member. Founding members have +3 years of work experience and previous start-up experience.

internationalization of the nascent companies. Early-stage internationalization is a common pattern among businesses in transition economies (Manolova et al. 2014). Internationalization is what attracts studied entrepreneurs in the high-tech sector in Sofia as well. Bulgarian market is estimated as limited in size or under-developed, in terms of societal responses and financial capabilities, which is why start-ups see potential to grow if they target global clients from the beginning. Internationalization, however, is a resourceful endeavour and increases even further the risk for the start-ups compared to operating at the domestic market (Requena-Silvente, 2005). Sampled start-ups are found to possess only limited possibilities to rely on their strong ties to facilitate this process. In 90 %, entrepreneurs did not have relevant contacts among their previous job occupation or among friends and family who can provide information about demand conditions or distribution channels abroad.

While start-ups are still in the stage of being liable to their newness (i.e. do not have legitimacy) and their smallness (i.e. limited financial resources and human capital), ambitions to expand to distant markets poses a threat of high level of time and financial capital constrains. In these conditions entrepreneurs are required to adopt an open networking behaviour that exposes the firm to opportunities to acquire the various resources it needs.

Relational dimension of social capital

Faced with the need to perform various tasks simultaneously - acquire resources, build legitimacy and look for new opportunities, start-ups turn to their weak ties. Initially this process starts in Sofia due to spatial proximity and soon expands abroad.

Weak ties are comprised of the business clients and acquaintances of the entrepreneurs or newly met people in conferences or other events. For all of the studied entrepreneurs, weak ties have played an important role in bridging them to new information that their social circles did not possess. This has been especially prominent in the process of the initial development of the product as well as after entering new foreign markets. In these processes, the main resource that companies target is information – about customer's preferences, market, competition, distribution channels. Weak ties provided entrepreneurs with an access to a wide volume, and potentially diversity, of perspectives how to build their product (Company A, B, C, E, G, H). Additionally, those who are already able to position themselves in international markets are concerned with their survival there and rely on weak ties to build their reputation (Company A, C, D, F, G). Thus, weak ties offer the opportunity to entrepreneurs to meet new people, who are predominantly potential customers.

Acquiring resources form weak ties, however, requires extensive networking behaviour which is not always within the capabilities of the start-ups. Company I, being recently established, reports that participation in events where it can meet clients and gain legitimacy is constrained due to time limitations. Thus, the company approaches potential clients through social media. Company H, on the other hand, relies on online channels to connect with customers as participation in international events is financially constraining. In this sense, while weak ties are the predominant way for entrepreneurs to gain the resources they need, this type of ties is not always accessible due to their inefficiency (due to large number and distant location) compared to strong ties.

Weak ties are found to play an important role in the decision of the entrepreneurs to join the two accelerators and acquire venture capital form them. This observation relates to the low level of general trust in Bulgaria and the high perception of corruption in institutions among the public (Transparency International, 2013). As the accelerators were recently founded (2012) and were subsidised with funding of the European Investment Fund, such concerns can be raised. Three of the interviewees

(companies D, F, C) have known actors among the accelerators' investors which helped them to take the decision to enter the Accelerators programme. Interviewee of company C comments their participation in an entrepreneurial competition saying:

"We met a lot of people who we couldn't meet otherwise, people from the ecosystem, from the funds who I was just reading about and I was sceptical to the idea of receiving money from funds to make business but I changed my mind".

While taking a smaller share in the social capital of the entrepreneurs, strong ties are found to provide important assets for them in the start-up establishment, initial penetration in foreign markets and performance of product improvements. These are, however, predominantly newly developed strong ties.

Contrary to the proposition of Casson and Della Giusta (2003) that preparing for a new venture, entrepreneurs mobilize a large social network to acquire information, resources and relationships, 90 % of the sampled start-ups in Sofia are found to commit themselves to the start-up idea relying heavily on and limited to the information they received from strong ties. These have been personal or business ties who were further involved in the formation of the start-up team.

The reliance on the knowledge and skills of small number of people, indicates a high level of risk taking among start-ups in high-technology sector in Sofia. However, a reason for this phenomenon seems to be the lack of ties to whom the entrepreneurs can turn to in this stage. To acquire information, especially in relation to international markets, is limited due to the small number of international players located in the country, while events which attract international public happen rarely. Attendance of international events is, on the other hand, resource intensive for the nascent entrepreneurs.

At the same time, family members are found to play a limited role. This finding is in contrast with majority of observations (e.g. Greve and Salaff, 2003; Jack, 2005; Brüderl and Preisendörfer, 1998) that entrepreneurs turn to their family members for initial feedback, to acquire human resources and financial capital or to reduce uncertainty. Often these studies use the indicator entrepreneur in the family to explain the entrepreneurial attitude of the entrepreneurs. In this study only one entrepreneur (Company E) referred to entrepreneurs in the family as an aspiration for an entrepreneurial carrier. This study hypothesizes that the reason for this is the socialist past of the country where entrepreneurship was not legally allowed and which limits the possibility of having entrepreneurs in the family.

Friends and business colleagues are found to form the initial clients' base of the entrepreneurs or facilitate the process of gaining first clients. These results are not surprising and are similar to the finding of Lechner and Dowling (2010) and Elfring and Hulsink (2007). At this point, the start-ups do not possess any legitimacy on the market and could hardly rely on purely market relations. Turning to strong ties, however, has limited potential to build the legitimacy of the company, especially abroad. In only two of the cases (company D and E) entrepreneurs were able to gain reputable clients who can add to the legitimacy of the company on international level. These have been entrepreneurs with business contacts from their previous job occupation and who capitalized on the location of international companies in Sofia.

Detailed, rich in context and meaning information and knowledge is acquired by start-ups entirely through newly created strong ties. The latter are based on frequency of interaction and reciprocal

commitment. These resources are important for entrepreneurs in order to perform product changes. However, a limited number of companies seem to be able to access such knowledge – company A, E and F. In addition, these companies report that their opportunity to engage with such partners is limited due to financial constraints and time consumption. While this type of ties are generally known to demand time and dedication (cf. Lechner and Dowling, 2010), further costs emerge for start-ups in Sofia due to their distance to their partners based abroad and their limited accessibility to financial resources in the early stage of their development.

Structural dimension of social capital

Following the view of Lechner and Dowling (2010) who observe that entrepreneurs develop networks of different compositions, comprised of relations of different content or purpose, the following discussion elaborates on the presence of several network configurations that the entrepreneurs are embedded in and that provide them social capital.

Sparse networks are identified to be the main driver of new opportunities for the start-ups while the latter allow them to grow. Their main contribution is in terms of information and additional contacts which, as it was stated of the beginning, start-ups heavily lack.

The clients' base of the entrepreneurs is found to form sparse networks that provide particular type of social capital advantage for start-ups in Sofia. As part of a fast-growing industry, 70 % of the start-ups (company A, C, D, E, F, G and H) already operate on one or several international markets. Accumulated clients are, thus, disconnected actors operating in different sectors and places. Thus, the entrepreneurs receive diverse information about customer preferences and competition from different contexts, which they initially lacked. This ensures increased alertness among entrepreneurs about possibilities of new combinations.

Sparse networks are also found to serve as social capital to entrepreneurs by providing them with further contacts. For companies A, C, D, F, G and J referrals of their clients to their own networks provided them with new contacts who can be potential clients or partners involved in the product development. Such networks help the start-ups to overcome their liability of foreignness and gain reputation overseas (or domestically in the case of company J). It can be observed that this process has had influence on the growth of these companies as they have been able to recruit more new employees (compared to company B, H and I).

Contrary to the general perception of dense networks as being closed and comprised of people with similar backgrounds, the dense networks in which sampled start-ups participate are relatively open for participation and include people with different experiences. The mechanism they are based on seems to be well depicted by Casson and Della Giusta (2007) who state that a network comprised of a group of people attending an event may have low individual importance, however, since these meetings are repetitive, their combined effect can be significant.

On first place, this phenomenon can be observed among four of the entrepreneurs (company A, C, G, and I) whose embeddedness in the dense networks of two entrepreneurial organizations⁸ provided

⁸ These two organizations are Start It Smart and StartUp Foundation.

StartUp Foundation is founded in 2007 in Sofia. It aims at supporting young people who want to turn their ideas into successful businesses. The organisation performs different activities such as entrepreneurial competitions, training programs and monthly inspirational lectures held in universities with successful entrepreneurs. <http://startup.bg/about/>

access to entrepreneurial skills and aspirations. Furthermore, the repetitive meetings in the events of these organisations allowed the entrepreneurs of two of these companies to cultivate relationships with their current founding team. A facilitating factor in this process is a common interest – to start own business – and common values in relation to risk-taking and pro-activeness which seem to foster trust and collaboration. This observation is in contrast with entrepreneurial literature arguing that founding teams are composed of long-lasting, strong relationships (Neergaard, 2003). It can be hypothesized that this behaviour emerges in Bulgarian settings due to the generally limited entrepreneurial motivation among members of the society or due to higher risk-taking inclinations among studied entrepreneurs.

The emergence of non-profit entrepreneurial organizations in Bulgaria is a new phenomenon which came as an answer to the absence of formal structures that can facilitate entrepreneurship. These organizations represent arenas which bridge otherwise disconnected persons and facilitate their search for complimentary resources in terms of entrepreneurial skills, encouragement or a venture opportunity. In this way certain gaps of the Bulgarian education system, which still lacks instruments to breed entrepreneurial culture, can be filled to some extent. The majority of activities performed by these organizations are concentrated in Sofia and since recently they were able to span their outreach to several other cities in Bulgaria. Thus, it can be assumed that until now their influence could be observed only in Sofia.

Secondly, all of the studied start-ups are found to be embedded in the dense network formed around the two accelerators. Having entrepreneurial skills and experience may be scarce resource in Bulgaria which makes facilities channelling such knowledge extremely valuable. Gathering people with different background and experiences adds to their value. Respondents refer to various resources that they obtain through this network – advice, knowledge, further contacts, and entrepreneurial aspirations. In this sense, actors involved in this network do not seem to possess only redundant information, as social capital theory hypothesizes about dense networks.

While all the studied companies, except one, are not recipients of the accelerators' programmes anymore, they keep integrated in its network. Reciprocity seems to be the 'glue' that keeps the actors involved and collaborative. This dense network provides advantages both for the new participants in the accelerators and for the old ones. This is straight-forwardly expressed by the words of company F:

We participate in almost all of these events [organized by the accelerator], in order to keep in contact with the companies, that's helpful because we have similar problems and help each other. ... We are in contact with the mentors until now – they can be clients, mentors and investors, depends who you can use for what.

This research hypothesizes that this creates social capital not only for the companies participating in this study, but for all the companies involved with the activities organized by the accelerators in Sofia. Additionally, the longer this network exists, the larger it becomes which increases its potential to

Start It Smart is founded in 2009 in Sofia by five fellow students at Sofia University "St. Kliment Ohridski". The aim of the organization is to spread and develop the entrepreneurial way of thinking, while supporting young people to start their own business. There are 40 start-ups founded by the organisation's members. Until know, the organizations has supported more than 300 start-ups in its pre-Accelerator programme, organized over 500 events and attracted over 10 000 participants in its activities. <http://www.startitsmart.com/>

provide resources. Entrepreneurs located outside Sofia, however, seem to face barriers to participate in this community due to spatial distance.

Thirdly, in two cases (company C and F) entrepreneurs are found to be nested in a dense network of actors specialized in their economic niche and functioning on the international market. Frequent participation in organized events abroad allows these companies to become 'insiders' and ensures more 'centric' position of the start-up in the network ("when you go to several events, people there remember you" says interviewee of company C). The density of the network allows the companies to build contacts faster initially as they repeatedly interact with actors and gain visibility among them. Consequently, these networks also provide efficient access to information about international markets.

Thus, this seems to be well-suited strategic approach undertaken by the two companies taking into account the initially restricted time and resources they possess to network. Perusing such a strategic approach, however, may be related to the background of the founders of these companies. They are the ones who possess the longest work experience among studied companies which may indicate that they have larger personal financial resources that they can invest. Additionally, these are actors who took high managerial position, as was noted earlier, which allowed them to gain better relational capabilities⁹ compared to start-ups founded by young teams.

5.3 Advantages of possessing social capital

As presented above, the empirical work has identified that goals set by the high-technology entrepreneurs in Sofia would not be realistic if they rely only on internal resources. The advantages that social capital brings, however, seem to depend on the mechanisms through which entrepreneurs are able to unlock it. These mechanisms influence the extent to which social capital can be advantageous for start-up performance, which is the focus of this section.

The first set of identified mechanisms, by which social capital provide advantage to entrepreneurs, is what Burt (1993) calls *access* and *timing*. These two mechanisms are identified to provide a competitive advantage to entrepreneurs in terms of higher chances of return on investments. They unfold in two particular activities performed by the studied entrepreneurs – in the phase of recognition of profit opportunity and later on in the process of keeping updated on market changes and customer preferences which ensures that timely product innovations are implemented. These mechanisms seem to be much less advantageous for the former activity compared to the latter. In that case, however, financial and temporal constrains do not allow the entrepreneurs to fully act upon the received advantage.

According to Burt (1993) players bring to the competitive arena three types of capital – financial, human and social, the latter being the 'final arbiter of competitive success' (p. 58). It can be recognized that the role of human capital concept in understanding entrepreneurial behaviour, indeed, has attracted a large volume of research (Elfing and Hulsik, 2007; Davidsson and Honig, 2003; Bhagavatula, et al., 2010), arguing that larger human capital in terms of educational background and work experience is a predicting factor that a person may start own business. Going further into this argument, Casson and Della Giusta (2007) claim that entrepreneurs 'seek out the sort of opportunities

⁹ Networking capabilities (Chen et al. 2009), referred also as relational capabilities (Lechner and Dawling, 2010) or management practices (Manolova et al., 2014) refers to the capacity of new ventures to identify, establish, coordinate and develop relationships with different players in the market.

that they consider they are best equipped to recognize and exploit' (p. 223). In this sense, possessed human capital is important, however, the latter can be utilized 'when the information comes through' (ibid.). A body of research (e.g. Burt, 1993) considers that access to privileged information, provided by social ties, renders competitive advantage for entrepreneurs. Explicitly, such gained advantage from access to privileged information can be identified in only one of the cases of sampled start-ups – the founder of Company D, whose job position allowed him to be in contact with international clients and as a consequence of his interaction with them he could recognize the need and at the same time the absence of a particular service. The opportunity recognition process with the rest of the companies seems to fall within the understanding of a second body of research that says that entrepreneurship is not necessarily about being socially privileged (Casson and Della Giusta, 2007) but about the capacity to recognize the significance of a piece of public information. Casson and Della Giusta (2007) argue that this capacity may stem from unusual personal background, such as living in a different country or working in different sectors, which result in formation of distinctive perspectives. Such background can be identified with company B, C, D, F, G, H, I and J¹⁰ who gained education abroad, while the founders of company E have been occupied on projects with international customers. This means that in 90 % of the cases sampled in this research entrepreneurs did not take advantage of access to privileged information but rather made use of the diverse worldviews they were able to gather.

In a later stage, firms make use of sparse networks (*clients or potential such*) to provide them with competitive market advantage by accessing information about market changes, competition and customer's taste. While such information may be accessible through online sources or marketing surveys, the abilities of actors to process volumes of information is limited (Burt, 1993). The network of clients or ties that are potential customers possesses the ability to direct entrepreneurs attention to particular information that is of importance for their product development (in particular, customer's taste – all of the start-ups), for attending the right events where new distribution channels can be accessed (company A and C) or learning about competition (company A, C, D and E).

The advantage of access elaborated in the previous paragraph, however, is strongly connected with the advantage of timing, meaning that if information is received when other actors already possess it as well or when actions cannot be taken to yield advantage of this information anymore, then access is of little value for start-ups. Taking into account the dynamic and complex nature of high-tech industry, timing becomes even more important factor for companies' survival and growth. A strategic approach to this issue has been taken by company F. It relies on a small number of ties possessing substantial information from various social circles, or according to Burt's terminology they are in a position of structural hole (Fu, 2004). As such, they broker access to the diverse information they possess, which reduces the cost for company F to network with various actors. This seems to be advantage particularly at early stage of development as it reduces search costs. The rest of the sampled companies have to perform less resource efficient activities of contacting members among their clients' base which also poses doubts to what extent they get access to information on time.

The second identified set of mechanisms by which social capital unlock advantages for studied start-ups is trust and referrals. These mechanisms relate to three activities performed by the start-ups. They enhance their efficiency, productivity and reduce their search costs. On first place, trust developed among strong ties and dense networks play a crucial role in recruitment. Attracting human capital with

¹⁰ In case the interviewee indicated that another of the co-founders was the first one to identify the idea, his/ he background was taken into account.

adequate qualities and entrepreneurial motivation seems to be challenging and trusted ties are sought by all entrepreneurs as they can confirm the knowledge and motivation of the prospect employee. Secondly, trust appears to be a quality of strategic strong ties among start-ups' customers that facilitates the exchange of tacit knowledge between them and the entrepreneurs (for companies A, E, and F). This process allows the start-ups to develop new capabilities and innovate. Thirdly, trust, in either weak or strong ties, open new opportunities for entrepreneurs to get new clients and enter new distribution channels through referral processes (for companies A, C, D, F, G and J). Consequently, this enlarges their clients' base and build their reputation which indicate their growth prospects.

In the process of their development, start-ups face an increasing demand of high quality human capital while collaboration among all team members needs to be ensured in order to yield collective benefit (Wheelan, 2013). This seems to be especially true for start-ups where separation of obligations is hard to draw and team members are involved in various activities. Trust can facilitate the process of recruitment, ensuring that the prospect employee represent a 'cultural fit' in terms of shared values and visions. Consequently, that determines start-up growth for at least two reasons. Team members are found to be an important source of entrepreneurial motivation for the high-tech start-ups in Sofia. (mentioned by company A, B, D, G and J). The reliability built among team members help entrepreneurs to overcome fear of risk and failure. Secondly, recruiting human capital that possess not only adequate skills but also behaviour and motivation required in the fast growing sector of high-technology, ensures positive performance in front of customers (*the importance of this is further discussed in this section*).

While personal sparse networks of the start-up founders and the dense network around the accelerator provide reliable information to the entrepreneurs about people who fit to their demands, companies also report that recruiting is a 'painful' process (Company J) and that social relations do not always have the capacity to solve problems with recruitment (Company D). While general limitations of social capital in recruitment process, such as small number of founders or founders with overlapping networks, can be an explanatory factor (Neergaard, 2003), it is valuable for this research to look at the influence of the local context.

As it was discussed in the previous section, Bulgarian education is still in its process of re-structuring and the progress of this process seems to face several challenges. Koeva and Yakimova (1998, p. 89) explain that:

"... any academic reshuffling might mean unpopular moves and actions by the administration. The self-interest of most of the faculty and staff supports preservation of the status quo as long as possible because closing certain departments or abandoning some courses might mean unemployment or a reduction of influence, prestige, and power."

The high specialization of teaching personal that was trained to suit the needs of socialist Bulgaria makes re-training a painful process as well (ibid.). Hindrances stem from under-investment also (EC, 2015). Finally, the outflow of students and academics to foreign countries further limits the human capital pool available in the country (Tochkov et al., 2012). At the same time Sofia city seems to have the highest capacity to overcome some of these challenges. Private efforts resulted in the development of alternative forms of education in the IT sector. Additionally, it is hypothesized that the higher level of prosperity in Sofia may attract more Bulgarian citizens who gained their education abroad compared to other cities in the country (which is confirmed by the sample of this case study).

In the early stage of their development start-ups constantly look for new opportunities. As their primary aim is to overcome their liability of smallness and foreignness, they need to expand their clients' base. An important role in this process play trusted ties who refer the company to its network. Entrepreneurs cannot be always physically present when opportunities arise, but what is important is that other people mention their name (companies A, C, D, F, G and J). The possibility of getting such advantage emerges with ties among start-ups' clients or potential such with whom the entrepreneurs already built trust in their capabilities or the start-up performance. In this sense, trust is important mechanism for 'cultivating' referral processes and potentially for enlarging clients' base and gaining new distribution channels. Simultaneous to this process, start-ups also build their reputation as the number of their customers grow. When this process unfolds, start-ups get better prospects to access reputable clients whose reputation build up the legitimacy of the start-up. This process can explain why the majority of sampled start-ups cannot rely on their Bulgarian clients, who lack legitimation abroad, to build their reputation.

High technology firms form a complex, fast and dynamic industry which makes communication crucial for continuous growth. Growth on its end means innovation and start-ups are in good position to benefit from the learning advantage of newness (Manolova et al., 2014). It allows them to combine creativity with emerging requirements of the market (Bhagavatula, et al., 2010). While sparse networks open opportunities for explorative learning and allow for implementation of incremental innovations, several firms (A, E and F) rely on strong ties in order to perform more substantial changes to their product including technological development. These ties are based on trust earned by proven start-up's usefulness for their clients and predictable expectations of the quality of service that the start-up will provide. Additionally, these ties develop common language due to repeated interaction which enhances the efficiency for the clients to turn to the start-up again. Partnerships with clients with purposes of innovation increases the internalization of know-how compared to explorative learning.¹¹

It is interesting to observe that while company A and company E have been relatively longer on the market compared to the rest of the companies, company F is younger which indicates its high-growth potential. This is also the company that has taken strategic decisions in networking as observed earlier in this analysis.

It should be observed, however, that the chances that the mentioned partners, are not in close spatial proximity is high. For company A and F the partners referred above are in particular foreign and thus located in large spatial distance. This poses a doubt that the potential of tacit knowledge exchange may be limited. While Dainov and Sauka (2010) point out that the significance of distance to clients has been losing importance for particular sectors such as ICT, direct and frequent contacts with clients are found to be important for the access to new knowledge (Lechner and Dowling, 2010). This indicates that distance may be a hindrance for the acquisition of more detailed, tacit knowledge from innovation partners. It is interesting to observe, for example, that company E reports that while they work with their Bulgarian clients on new ideas, they are currently unable to involve their foreign clients in such

¹¹ A factor that may influence the number of start-ups which enter in innovation partnerships may be the level of technological innovation involved in their products (cf. Elfring and Hulsik, 2007). This study is not in a position to classify the level of technological innovation of the companies, however, it can note that there are two companies – company A and company F which reported the need to perform R&D activities in the initial process of technology creation. Thus, it can be hypothesized that they perform more radical innovations than the rest of the companies.

activities. Another explanation may be that building trust in local clients is easier than building trust with distant and foreign partners.

Analysing the IT sector in Munich, Lechner and Dowling (2010) claim that companies innovate through technology partnering. Among the studied population here, there is only one company (company F) which has a technology partner providing complementary technology to the company. Trust plays an important role for the start-up to develop reciprocal commitment with this partner even when problems occur:

“It is important to work well with them, even to like each other as persons, because no technology works without mistakes and this is true for both sides. In this way solutions can be found fast and clients are satisfied”

and to capitalize on already developed routines. Additionally, keeping such relationship over time can signal the market that the company is a reliable partner. The development of this partnership can confirm one more time that longer work experience, through which networking capabilities can be developed, play an important role for accumulation of social capital.

Technology partners seem to present multiple advantages for start-ups, as indicated by the case of company F. While a relationship with them can be formed as purely market one, they provide shared-knowledge creation, reputation and possibly access to their clients. The opportunity to take such advantages seems limited for the majority of high-tech start-ups in Sofia. The reasons for the absence of such partnerships can be sought in several directions. First, although Sofia is the main attractor of international technology companies, their number is still limited which decreases the chances of the start-ups to attract such partners locally. Second, technological partnering depends on the level of technological innovation involved in the products offered by the start-ups. It may be hypothesized that sampled companies that perform more incremental innovations, such as online market places, have less reasons to enter in such type of partnerships.

A synthesis of the analysis above is presented in *Table 5*. It visualizes the set of mechanisms, the activities in which these mechanisms are made present and their potential to bring advantage for the studied start-ups.

Table 5: Mechanisms, unlocking social capital advantages

Mechanism	Activity	Potential of the companies to take advantage
<i>Access</i>	<ul style="list-style-type: none"> - <i>Opportunity recognition</i> - <i>Accessing information about market changes, customer preferences and competition</i> 	<ul style="list-style-type: none"> - Limited (observed only with company D) - High (observed with all companies)
<i>Access and Timing</i>	<ul style="list-style-type: none"> - <i>Accessing information about market changes, customer preferences and competition</i> 	<ul style="list-style-type: none"> - Limited (observed only with company F)
<i>Trust</i>	<ul style="list-style-type: none"> - <i>Recruiting personnel</i> - <i>Product improvement</i> 	<ul style="list-style-type: none"> - High (observed with all companies) - Limited (observed with three companies)
<i>Trust and referrals</i>	<ul style="list-style-type: none"> - <i>Enlarging market share</i> 	<ul style="list-style-type: none"> - Medium (observed with 6 companies)

Until now the analysis seem to suggest that high-tech start-ups in Sofia have taken a path that ensures access to economies of scale by entering larger and more advanced markets compared to the Bulgarian one and consequently higher revenues. This path opens chances for them to adapt their product to high-demanding international customers and to be innovative. Acting upon these opportunities, however, is related to resource capabilities in terms of financial capital and time. Networking requires attendance of various events, while the latter are resource intensive. While it can be assumed that financial capital and time are resources limited in amount for most start-ups due to their age and size, studied start-ups appear to be constrained by additional factors – the networking activities that can inform them about foreign markets and distribution channels take place abroad, while they rely on the own resources of the founders. This may be an explanation why studied start-ups differ in the utility of ‘information access’ advantage and the possession of access to the ‘timing’ advantage. Additionally, research on internationalization of young companies particularly argues that internationalization may result in trade-off between investing in entering into foreign markets and investing in innovations (Manolova et al., 2014). Companies A, D and F particularly report inability to utilize perceived opportunities for innovation because of time and capital constrains, while company F and E report that they plan to move part of their personal to the location of their new markets in order to be able to better communicate with their clients.

While faced with these resource constrains, social capital seems to play limited role in the accumulation of financial resources for studied start-ups. In 7 of the cases, ventures were established with the financial capital of the founders. In the other 3, development of the venture idea was initiated when funding form the Seed and Accelerator programme was accessed. This can be explained with the fact that technology-based new ventures may not require large financial capital at its beginning and

thus start-ups may not have been focused on accessing venture capital initially (Neergaard, 2003). The latter is, however, claimed to play a vital role in the commercialization phase (Goldberg, et al., 2011). The process of business internationalization is also resource-intensive (Manolova et al., 2014). Manolova et al.'s analysis (2014) confirms the positive correlation between the diversity of the domestic financial networks for the internationalization of ventures based in Bulgaria. Studied start-ups are, however found to lack access to such domestic or international networks. Until the present moment, sampled companies, have relied on financing of the accelerators (all) and foreign incubation programmes (companies B, D and J). Apart from those, only company F and J were able to acquire capital from angels and venture capitalists with the facilitating role of the accelerators. This reveals a substantial barrier in front of otherwise high aspirations of the start-ups to internationalize and to their survival and growth prospects abroad.

5.4 Accumulation of social capital and its interdependence with entrepreneurial performance

Social capital is a nonmonetary resources, however it can be highly costly to acquire and to ensure the utilizations of its advantages. This is in particular the case with the high-tech start-ups in Sofia. They see their growth prospects in foreign markets, however, 90 % of them are found to lack established relations on which they can rely in their 'quest' to the international arena. Additionally, they approach the latter while they still have not been able to cope with their liability of newness and smallness in the domestic market. This means that they possess limited financial resources, limited time while occupied with searching for different resources and limited legitimacy, all of which represent serious resource constraints. This may explain why Lyles et al. (2004) (quoted by Peng et al., 2008) find that rapid internationalization of local start-ups in post-socialist Hungary is related to lower likelihood of survival.

At the same time social capital seems to be not only a mechanism for acquisition of resources but an important component in the networked economy. As dynamic and complex, the high-tech sector makes communication and interactions crucial in order players to recognize opportunities and have the ability to act upon them. While studied start-ups are found to possess limited relevant social capital initially, this study identifies that they accumulate it in the process of their development, which explains the observation made in the first chapter that weak ties play more important role for the firms than strong ones. As social capital co-evolve with the performance of entrepreneurial activities, this study argues that start-ups are dependent on their entrepreneurial performance (as activities and quality of performance) for the formation of social capital which can consequently feed back into their growth. This can explain why previous sections identified different patterns of social capital across companies. Additionally, it is found that this mechanism of social capital formation requires the start-ups to acquire particular entrepreneurial behaviour that is similar to their Western counterparts. In this way they disengage from routines and practices of doing business domestically.

The first and foremost change in the social capital of sampled start-ups is that the number of their ties grows considerably in size. After being able to develop their product, relying on ties in close spatial proximity, and to perform first sales in domestic markets, entrepreneurs search for ways to enter distribution channels on foreign markets. Such entrance, however, is hard to reach when the company

is small, new and foreign. A strategic approach of studied start-ups (B, D, E, F and J) seems to be taken in order to connect to 'facilitators', whose reputation and developed networks can be used¹².

Research based on observations of Western economies proposes that start-ups enter in technology partnership that build their legitimacy and consequently open new relational opportunities for them (Lechner and Dowling, 2010). As it was explained in the previous section, high-tech start-ups are constrained to use this approach, especially before gaining reputation and visibility abroad. Thus, such ties for studied start-ups become foreign incubation programmes or advisors with global reputation. An advantage of reputation ties over approaching separately potential clients abroad, is that they are able to provide single point of access to a large number of resourceful partners. These ties, however, are not located in the spatial proximity of the entrepreneurs as the chances to identify actors/ organizations who are globally known and have connections to international markets in Bulgaria are limited. What should be noted is that these ties emerge based on perceived trust in the good performance of the start-up. Such trust on its end can be granted in case the start-up can propose something innovative and proactive. The latter may be the reason for the high risk-taking behaviour of the sampled entrepreneur which was noted earlier. This observation is in line with Peng et al. (2008) argument that emerging economies need to perform risk-taking measures in order to overcome their competitiveness weaknesses.

By initiating a process of internationalization, entrepreneurs start building new relationships abroad and this process creates new social context for them. Building such new social context distance the entrepreneurs from the practices of doing business domestically. This process is visualized in Table 6 and is explained further in this section.

¹² Firm C, G and H reported addressing clients separately through online channels; company A found it hard to elaborate on this issue due to the length of time that it has been operating on foreign markets; company I still have not made steps to approach international clients.

Table 6: Acquisition of social capital as dependent on certain factors fulfilled in performance of entrepreneurial activities (column 2) and entrepreneur's behaviour required to cover the factors (column 3). The arrows represent the advantages of acquired ties/ networks on each step.

Activity	Factor, facilitating the access	Required behaviour to fulfil the factor
1. Acquiring reputational tie	innovativeness, pro-activeness	Risk-taking
 <u>Opens access to new ties</u>		
2. Acquire clients	fulfilment of obligations and expectations	Commitment
 <u>Refer the firm to their network, enhance relational capabilities and product's fit</u>		
3. Build customer's network	meet raised expectations	Customer (market) orientation
 <u>Provides access to emerging new opportunities, build reputation, and increase revenue</u>		
4. Acquire innovation ties	trust, common language	Commitment
 <u>Provide access to know-how and new prospects for growth</u>		

While reputation relationships are partners who introduce the start-ups to a new network, this initial visibility needs to be expanded and utilized. This is related to the process of gaining customers, where start-ups need to show their commitment to deliver the results sought by the potential client. Such commitment, instead of purely opportunistic behaviour, is important as it can ensure that the (potential) client will further refer the start-up to their networks in case a new opportunity arises. This quality is in contrast with the opportunistic behaviour that entrepreneurs in Bulgaria are claimed to have (Williams and Vorely, 2014; Manolova et al., 2007).

Lecher and Dowling (2010) point out that customers become part of the entrepreneurs' social network if they lead to benefits beyond the direct purchase they make. In this perspective, it can be observed that certain customers have become important part of the social capital of the entrepreneurs as they open new distribution channels through referral processes. Additionally, interaction with (potential) clients help the start-ups to adjust their product to the requirements of high-demanding partners and to refine their networking capabilities¹³.

¹³ Networking capabilities (Chen et al. 2009), referred also as relational capabilities (Lechner and Dawling, 2010) or management practices (Manolova et al., 2014) refers to the capacity of new ventures to identify, establish, coordinate and develop relationships with different players in the market.

Shaping reputation based on building knowledge of good start-up performance in customers is universally important for companies who observed that their customers referred them to others (companies A, C, D, F, G and J). In this way, purely market relations with customers turn to social and feed into the social capital of the entrepreneur. This initiates a self-enforcing mechanism. The referrals provided by newly shaped social capital of client ties open an opportunity for the start-up to meet new clients and consequently to diversify their clients' base, including already more prominent clients. Including internationally known companies in the start-up client's base, gives access to the reputation of these clients and provides the start-up with social capital which can be used for increasing further the start-up clients' base (especially mentioned by company A, which is the oldest one among the population). In this sense, reputation is gained directly through referrals and consequently indirectly through the reputation of globally known clients. Entering this process, start-ups build a sparse network and rely on it to open new opportunities for them without the need to maintain the network as such.

This self-reinforcing process is facilitated by customer (market) orientation behaviour of studied entrepreneurs, a quality which is generally claimed to be a key element of Western philosophy (Luo et al., 2005). The latter means that start-ups have a strategic focus on their customers as a source of new ideas and motivation to innovate in order to respond to customers' requirements (Luo et al., 2005). It can be recognized that all sampled start-ups take the opportunity to learn from their customers and this process is seen as crucial for implementing improvements. A positive correlation between internationalization and customer orientation behaviour has been found also in other transition economies, such as China (Luo, et al., 2005). Logically, the intensity of this process should depend on the size and sparsity of the network of clients, which stimulate the start-ups to innovate. However, this study is unable to capture this issue precisely.

The growth of the firm and the enhancement of its capabilities together with the access to new opportunities seem to increase the entrepreneurial orientation of the start-ups. Proven usefulness in relationships with clients sets the base for building trust and for strengthening certain ties. This mechanism is recognized with companies A, E and F. The proven usefulness of their work and developed understanding over repetitive interaction with certain customers allowed activities of joint creation of knowledge. These activities require more intensive communication and thus strengthen the ties, while the latter allows to exchange more fine-grained information and know-how. In this process, the trust between partners enhances problem-solving and reciprocal understanding which prevents from opportunistic behaviour. Product development partnerships are, however, resource consuming and thus seem to appear when the company has been able to gain revenue. This may explain the small number of companies involved in this process. It is worth observing that company F is one of the companies which was able to receive several sources of financing which increase its abilities to network on foreign markets, while company A reported that currently it can sustain itself through its revenue. This observation confirms one more time the evolutionary nature of social capital that unfolds over time depending on the entrepreneurial performance.

CHAPTER 6: CONCLUSIVE DISCUSSION AND FINAL REMARKS

6.1 High-Tech Entrepreneurship in Sofia: Between Bulgarian Context and Western Markets

Adopting a social capital perspective, this research has been able to provide substantial observations of the role of social capital for entrepreneurship emergence and growth in the high-tech sector in Sofia. Initially, the absence of strong ties which can facilitate business growth poses threats that start-ups have limited chances to rely on social capital in order to enhance their performance. This also makes social capital highly recourse consuming as it needs to be newly accumulated in the stage when the firm is still new and small.

Apart from drawing findings in relation to the process of firm's growth, the social capital perspective taken by this research led to observations of some distinctive differences between available knowledge about entrepreneurship in Bulgaria, as it was depicted in the first chapter of this study, and the high-tech start-ups based in Sofia. In the concluding part of this research, this section aims to highlight to what extent social capital has played a role for the emergence of these different characteristics.

Opportunity recognition is a complex process. It is a combination of entrepreneurial alertness, information asymmetry and prior knowledge, social networks, personality traits and the type of opportunity itself (Bhagavatula, et al., 2010). Levels of opportunity recognition in Bulgaria are found to be very low (GEDI, 2016). The social capital of entrepreneurs in this research is found to facilitate this process in two ways. For one company, it created information asymmetry by providing privileged information. For the rest of the entrepreneur, social capital played a role through social ties. These are the limited number of strong ties to whom they turned to discuss a potential profit opportunity or the entrepreneurial clubs that they joined searching for partners sharing their entrepreneurial orientation. In this regard, connecting to similar minded people has facilitated the initial elaboration on a recognised societal/ business problem. Only in one case, an interviewee referred to entrepreneurs in the family which social capital research usually observes as an important explanatory factor for entrepreneurial career. This observation is context specific and confirms the implications of local conditions (socialist past) for social capital.

The fear of failure in Bulgaria is also very low and represents one of the lowest among the indicators adopted by GEDI (2016) referred to in the first chapter. This case study identifies that initially, risk acceptance among entrepreneurs is driven by the nature of their business, rather than their social capital. While low knowledge-intensive firms can make a profit from their business even if they are geographically localized and short-term oriented, high-tech start-ups see limited opportunity to sustain their business in the domestic market, which drives companies to internationalize. This process on its end contains high risk due lack of information, limited resources and low margins of error. To certain extent this risk is alleviated through social ties among the accelerators' network where entrepreneurs have access to entrepreneurial knowledge that they do not possess. Consequently, when firms access foreign markets, the process of firms' growth co-evolve with the formation of social capital, as it was shown in previous chapter. The accumulation of social ties and development of sparse network of clients, however, require risk taking behaviour and openness to innovations. In this sense, social capital cultivates acceptance of risk and prevents short-term orientation.

The narration above seems to be also a plausible explanation why studied entrepreneurs are 'opportunity entrepreneurs' rather than 'necessity ones' as. Thus, they show much higher entrepreneurial motivation compared to the general conditions in Bulgaria.

Networking activities become increasingly important for studied entrepreneurs due the exposure of the business to distant international markets. High level of internationalization can be seen as an adequate behaviour by companies whose national economies are small and purchasing power and innovation is low, while neighbouring markets bear similar characteristics. Consequently, Bulgarian start-ups have to cope with liability of newness and foreignness simultaneously which makes their business more risky and financially constrained. Social capital seems to play a crucial role for building the legitimacy of the entrepreneurs in front of international counterparts which creates future options for relationships and establishment on the market. Particular attention should be paid to the role of international IT companies located in Sofia. They have the potential to provide two advantages for entrepreneurs – connections for those working for them and legitimacy for those who get them as clients, which is facilitated by the fact that they are in close spatial proximity.

The high level of internationalization has its positive consequences on the entrepreneurial attitude of the start-ups in Sofia as it embeds them in new social context. Opportunistic behaviour is excluded. Developing relations of commitment, reciprocity and mutual obligations and expectations is seen to ensure the resources needed by the start-ups to grow. The competitive advantage they receive through feedback and information from customers, the visibility through referral processes and know-how through repetitive interaction and building trust would be limited if they rely on purely market relations. Consequently, the accumulation and use of this social capital combined with possessed human capital ensure the growth prospects of the start-ups.

On the other hand, as networking activities are related predominantly with the exposure of the firm to foreign markets, several domestic implications can be observed. Sampled companies show very low intensity of membership in trade or business organizations. In only one case such relationship was identified. In addition, while some of the start-ups mentioned the need for R&D in the process of development of their product, they did not mentioned partnerships with Bulgarian research institutes. These two observations, combined with the fact that the majority of clients of the start-ups are on foreign markets, are alarming in relation to the potential of the start-ups to transfer their know-how or skills to others as well as to make their technology accessible to a wider range of users who can further exploit or develop it. In this sense, high-tech entrepreneurs seem to have limited capacity to provoke the creation of innovative capabilities in the domestic market which could bring generally more positive social attitude to innovations.

6.2 Final remarks

Three leading contributions can be stressed as an outcome of this research.

First, it identified that Sofia, compared to other cities in Bulgaria, offers better opportunities for entrepreneurs to gain experience with international companies and clients and to be exposed to a wider variety of worldviews. This plays an important role in the opportunity recognition phase. Currently, Sofia is also the city where a community of entrepreneurs with entrepreneurial skills and international outreach is growing which is set to attract further want-to-be start-ups. This community creates a new and different context in the city.

Secondly, the research identified that higher level of entrepreneurial orientation is associated with the internationalization of start-ups, which also increases the risk of their survival. The ambition of internationalization drives studied entrepreneurs to diverge from local practice of doing business that present research base finds to be of low risk taking, opportunistic and low growth oriented. This

diverging process is rooted in the need for entrepreneurs to fit in the norms and codes of conduct of their Western partners. Additionally, this transformation is seen as a process. The more firms obtain shares of foreign markets, the more they are influenced by a new social context. It is plausible to argue that this is connected with the new social capital that they accumulate. These findings can be useful for managerial practices. This process, however, does not go without threats, and at least two can be clearly identified here. The first one regards the new start-ups. It has been observed that entrepreneurs in sampled companies need to adopt high risk-taking behaviour in order to overcome their competitiveness weaknesses. It can be argued that this risk is higher compared to firms in developed economies which are more resource-endowed, better informed and have chances to approach partners in close spatial proximity. Additionally, their distance from clients and constrained resources are seen as a barrier to internalize competitive capabilities through partnerships. In this regard, the study alerts start-ups about these constraints. The second threat regards the larger impact to local society and economy in terms of potential of knowledge transfer and ambitions for relocation when clients' base abroad grows. In this regard, it can be recommended that tools which facilitate the larger visibility of these start-ups among Bulgarian business and society should be developed by media or policy makers in order to build cultural support to entrepreneurial activities and possibly better connect them with potential customers locally.

Finally, several of the findings of this research were identified to be similar to other studies of transition economies which is a substantial reason to argue that developed conceptual model can fit entrepreneurship analysis in other transition countries where economic sectors are export-oriented. This result can be of help for other researchers occupied with the subject.

6.3 Research limitations and proposals for further research

This paper has a number of limitations. First, the number of companies included in this study is limited while the way a sample is selected can affect how closely it mirrors the true characteristics of the whole population (Fowler, 2009). This may raise concerns whether it can be representative for all high-tech entrepreneurs in the city of Sofia. In order to be able to make general conclusions, the author ensured that the characteristics of the sampled companies are as close as possible to the characteristics of the whole population. Main hypotheses were drawn based on substantial observations of similarities or differences between companies, combined with observations from official documents and research based in other transition economies as a comparison. Additionally, this research is of exploratory nature and as such it is well suited to raise issues that can be further and more thoroughly studied.

On second place the study was based on a partial picture of the start-ups relationships and networks they participate in. The aim of the research was to analyse the ego-network and social ties that particularly contributed to the performance of entrepreneurial activities. Such approach is usually blamed to overlook weak ties and their contribution (Elfring and Hulsink, 2007). This approach, however, allowed the collection of more detailed data about certain relationships and the process of their formation. Mapping and measuring social networks is generally an occupation of quantitative research (Edwards, 2010) and requires the research to have a-priory defined boundaries of studied network which does not correspond to the aims of this research. It was, however, recognised that in some cases performed interviews did not allow the researcher to obtain a clear understanding of the process of tie formation which would have benefited this study. In this regard, a possible solution can be the participation of the researcher in local events where entrepreneurs participate in, in order to make richer observations and possibly have the opportunity to talk to entrepreneurs' partners.

As an emerging topic, entrepreneurship in transition economies seems to open a 'wide door' for further research. Entrepreneurship research in Bulgarian settings is particularly missing which hinders the performance of more in-depth analysis. Opposing views between research, statistics and analysis performed by public institutions seem to inject further confusion. The latter can be alleviated if more research effort are generated.

Social capital theory appears as an adequate response particularly when complex and fast-growing industries are an object of research. High-tech industry currently attracts the attention of both the public and politicians, which means that a further research on the sector would be valuable. In this study, social capital has been found to play much larger role for entrepreneurship in the context of a post-socialist country compared to the Western society as it has the capacity to influence entrepreneurial orientation, norms of reciprocity, openness to innovation, etc. A further comparative study with other industry sectors that are not export-oriented would be valuable research that can confirm or negate the importance of internationalization claimed here. Such study can validate the developed model and further reveal whether the advantages of social capital in transition economies can be seen from additional perspective. In this sense, this research can be valuable for the development of the theory as it initiates this discussion.

A longitudinal research of sampled companies can also be performed after some time in order to see whether causal effects identified here appear for those companies that are currently in earliest stage. Possibly a study can look at whether there are more incentives for companies to internationalize at early stage or entry in foreign markets should be postponed. As it was presented earlier in this research, the opinions on this topic are opposing, which means that there might be different context specific factors that determine the success of the firms in the process of internationalization. This would provide useful insight for newly created companies.

Finally, a piece of research valuable for policy-makers can identify the influence of high-tech start-ups for local economy over time and whether the community now present in Sofia has grown and had influence on larger scale. This study has casted some doubt on the potential of such influence which means that further research is necessary in order to identify what can be the recommendations for better bridging the high-tech entrepreneurs in Sofia with actors who can benefit from their knowledge.

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Annex 1

Interview Guide

PART ONE: Basic Information about the Start-up

Before we discuss the foundation of your start-up and its development, I would like to ask you a few questions about the status of your company and your position in it:

Q1: When did you start the business?

Q2: What is the main activity of the firm? In which sector does it operate?

PART TWO: Entrepreneurial activities

Now, I would like to ask you some questions about the business activities that you performed/ perform when setting up your firm and after that. They aim to identify the resources that you used in order to perform these activities and the people who were involved.

Discovering business opportunity and developing business idea

Q5: How did you come up with the idea about your start-up?

Q6: How did you recognize the need/ demand for your service/ product? (Relevance to the market).

Q7: Can you tell me about the process of developing your idea? What was the first thing you did in order to realize your business idea? Were you working on it alone or were you a group of entrepreneurs?

Q8: In this process, did you recognize a need for additional resources such as knowledge, advice, and opinion? How did you get access to these resources?

Q9: Did you turn to someone to test your idea?

Acquiring financial resources

Q11: How did you get access to financial resources to start your business? Have you been trying to get access to additional funding from VCs/ business angels/ crowdfunding? How did you get to know them?

Acquiring information about the market

Q12: How did you obtain information about the market for your product/ service, its size, customer preferences and the potential for your product/ service's demand (would the demand expand)?

Q13: How did you obtain information about the competition?

Q14: Did you participate in events (or performed other activities) with the aim of getting access to these types of information? What was the outcome of this participation?

Gaining customers and market share

Q15: Who were your first customers? How did you get in touch with them?

Q16: What markets do you currently serve and target – local, national, international? How did you (do you aim to) access these markets?

Q18: Have your customers or suppliers been referring your company to their personal and business connections? Has this been beneficial for extending your market or entering new markets?

Marketing/ gaining visibility

Q19: What was your strategy to gain visibility?

Q20: Have you been participating in events, where you presented your start-up? Does this help you to gain more visibility and new contacts helpful for your start-up? How did these contacts developed?

Getting emotional support

Q21: What motivated you to start own business? Do you turn to someone who can encourage and motivate you now?

Acquiring human capital

Q22: How did you find people with relevant competences that were complimentary to the founders' skills in the process of business formation? Did you use referrals to find team members and hire employees?

Technological development

Q23: Do you receive information from suppliers or customers (or others) about additional services that can be added to what you currently offer or other changes that are desirable for the end-user?

Others:

Q24: Has any of your contacts (partners) recommended your start-up as a potential business partner to another company? Was that a friend/ a connection from your professional or informal network/ an organization that you are a member?

Q25: Are you a member in an organization (business or nonprofit etc.)? Has this membership helped you to create new contact relevant for your start-up and have you turned to them for anything?

Q26: Do you participate in initiatives (Start-up talks, cafes, job fairs, etc.) on topics related to your business? Has this participation helped you to create new contact relevant for your start-up and have you turned to them for anything?

PART THREE: Nature of relationships

Now I would like to ask you some questions about the people that you mentioned as being involved in the performance of your entrepreneurial activities.

Q27: How did you meet with this person?

Q28: What is the occupation of this person?

Q29: Do you know each other for a long time?

Q30: How frequently do you interact with this contact?

Q31: Does this contact also ask you for information or other type of resource (reciprocity)?

Q32: Have you been in contact with this person more than once for business-related issue (repeated ties)? Do you rely on this contact for several issues related to your business (multiple ties)?

Q33: Do you consider that this partner has the relevant competence to provide you with the necessary knowledge/ advice/ opinion, etc.?

PART FOUR: Personal information **(about the founder)**

Finally, I want to ask you a few questions about you as an entrepreneur

Q34: How many years of experience do you have working in the sector where your start-up operates?

Q35: Do you have prior experience in founding a new venture? What did you learn from this experience? Do you use contacts that you develop in you previous start-up for performing activities in your current one?

We arrived at the end of the questionnaire. Thank you for your cooperation.

Q36: Any questions?

Q37: Would it be possible to contact you again if I am still missing some information?

Q38: Do you agree to be quoted by name and company or you would prefer me to keep the information you provided me confidential?

Annex 2

Profile of respondents, their start-ups and business activity

Start-up firm	Name of respondent	Respondent's position	Business activity
Imagga https://imagga.com/	Chris Georgiev	Marketing director & Co-founder	Image Recognition Technology providing Image Tagging APIs for developers & businesses to build scalable, image intensive cloud apps.
Sensika https://sensika.com/	Konstantin Christoff	CEO and Co-founder	Cloud-based, single-access-point information intelligence platform, supports business decisions.
Traincamp.me https://traincamp.me	Mladen Borisov	Head of Digital & Co-Founder	Educational solution for online web courses, classes, and events.
Coursedot https://coursedot.com/	Teodor Panayotov	CEO & Co-founder	Online marketplace for IT training courses
Legaltrek https://legaltrek.com/	Alexander Gvozden	Co-founder & Chief of Product	Integrated legal practice management solution.
Farmhopping https://farmhopping.com/	Rossi Mitova	CEO & Co-founder	Online platform where farmers can have personal storefronts where they can sell their produce and interact with their customers directly
Enhancv https://www.enhancv.com/	Volen Vulkov	Co-founder	Enhancv helps you create compelling human-centric

			resumes that unveil the real person behind.
Majjo https://maj.io/	Svetla Simidchieva	Co-founder	Service for matching applicants and jobs in order based on skills, background and experience.
Ticket https://tickey.me/	Dimiter Dimitrov	Co-Founder & CEO	Mobile ticketing app that allows you to pay fares for public transport - buses, trams, trolleys, metro in your town.
Powerweek https://thepowerweek.com/	Radina Popova	Digital Marketing Executive	Online market place for co-working spaces in nature environment

Annex 3

Documentation of interviews

Name of respondent	Documentation of interview
Chris Georgiev	Notes in Bulgarian
Konstantin Christoff	Voice record in Bulgarian and transcript in English
Mladen Borisov	Voice record in Bulgarian and transcript in English
Teodor Panayotov	Voice record in Bulgarian and transcript in English
Alexander Gvozden	Voice record in English
Rossi Mitova	Voice record in Bulgarian and transcript in English
Volen Vulkov	Voice record in Bulgarian
Svetla Simidchieva	Voice record in Bulgarian and transcript in English
Dimiter Dimitrov	Voice record in Bulgarian and transcript in Bulgarian
Radina Popova	Voice record in Bulgarian and transcript in English