# Social Capital Acceleration in Startup Ecosystems – The Role of Business Accelerators

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***Abstract***

The business accelerator phenomenon is growing worldwide, with an ever-increasing number of active programs and this is so in Germany. Nonetheless, up to now there is little formal academic literature on the subject, especially on the role of business accelerators in startup ecosystems. To address this research gap, the master's thesis investigates the role of business accelerators in social capital acceleration in startup ecosystems, since according the current state of research, social capital counts as one of the core capitals of the startup ecosystem. This is achieved by an exploratory case study approach to the impact of business accelerators on the social capital of startup ecosystems, using Berlin as the location for the case study, which applies as the most developed startup ecosystem in Germany. The business accelerators were examined through interviews, website analysis and observations and the results of the data is compared and discussed in relation to the available literature. The results led to propositions that business accelerators obtain a social capital-accelerating role in the startup ecosystem by fulfilling a framework that is needed to create and increase social capital and therewith allows actors of Berlin's startup ecosystem to speed up their efforts. Moreover, through the accelerating role of Berlin's business accelerators in the process of social capital creation, the thesis demonstrates that by their program, business accelerators also have impacts on the cultural, financial and human capital of Berlin's startup ecosystem. Nevertheless, future research is needed on the results of the thesis to support or even expand the propositions about the role that business accelerators play in startup ecosystems.

## 1 Introduction

### *1.1 Problem Definition and Importance of Research*

Many cities, regions and countries consider startup ecosystems as the 'holy grail', as governments are still struggling to identify ways for enhancing the growth performance of entrepreneurial firms in their region (Isenberg, 2010: 3). The current state of research classifies startup ecosystems as a dynamic and complex organism that consist of various interconnected entrepreneurial actors, organizations, institutions and processes, which are mutually interrelated in a highly complex manner to connect the performance within a local entrepreneurial environment of a city, region or nation (Isenberg, 2010: 3; Mason & Brown, 2013: 5-19; Juling, Freiling & Harima, 2016: 4). According to Napier and Hansen (2011: 3-13), the strength and quality of a startup ecosystem depends on the presence of actors that are specialized and geared towards working with young high-growth firms, as well as on a dense and trustful supportive network between the actors that finally help connecting startups with their required resources in the ecosystem. Similar, Mason and Brown (2013: 5) as well as Juling, Freiling and Harima (2016: 12-13) classify social relations and the resources embedded within the social networks as a core capital of startup ecosystems. This points to the importance of social capital as a success factor for the startup ecosystem and to the importance of research into this form of capital, especially as social capital, which, according to Walker, Kogut, and Shan (1997: 110-118), has important implications for the understanding of the formation of networks that support startups.

Within the last decade business accelerators have recently received much global attention (Miller & Bound, 2011: 3; Carmel & Richman, 2013: 2; Cohen & Hochberg, 2014: 2; van Weele, Steinz and van Rijnsoever, 2014: i). Based on the content of the business accelerator program, Zoller (2010: 1) associates business accelerators with the term 'dealmaker', which is a person who mediates entrepreneurial networks by tying multiple actors of the ecosystem. Feldman and Zoller (2012: 24-26), Carmel and Richmal (2013: 3) and Fehder and Hochberg (2015: 7) also associate business accelerators with the social capital creation within regional ecosystems. However, Zoller (2010: 138) emphasizes that it is impossible to generalize his findings and that the approach of linking business accelerators with the concept of dealmakers needs more examination, which further highlights the importance of the research topic.

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### *1.2. Research Gap and Issue*

After approximately ten years, since the first business accelerators programs where established, according to Barrehag et al. (2012: iii), Isabelle (2013: 18), Cohen and Hochberg (2014: 1) and Kawohl, Rack and Strniste (2015: 6) academic literature on business accelerators has been still comparatively slim or virtually non-existent. The current research on business accelerators has mainly concentrated on the content of the programs, the first attempts at finding a suitable definition for business accelerators and on the direct outcome for graduates of the program, mostly from a financial point of view (Fehder & Hochberg, 2015: 4). Radojevich-Kelley and Hoffman (2012: 57) and Carmel and Richman (2013: 8) point out the need for research on business accelerators that should especially focus on the impact of the business accelerators networking process within the local startup ecosystem. Furthermore, Miller and Bound (2011: 4-7, 34), Isabelle (2013: 22), Cohen and Hochberg (2014: 1-2) and Fehder and Hochberg (2015: 31) mention that there is a lack of understanding regarding the value, efficacy, spillover impacts and the importance of business accelerator programs for the ultimate success of the local startup ecosystem up to now. In addition, there is very few research on how a business accelerator could help develop startup ecosystems in future. Thus, the thesis aims to investigate which role business accelerators play in the perspective of social capital acceleration within startup ecosystems and their further impacts on startup ecosystems, in which the business accelerators work. To discuss broader impacts of business accelerators on startup ecosystems, the thesis will apply the recently developed and literature-based Eight Capital Model of Entrepreneurial Ecosystems by Juling, Freiling and Harima (2016), which helps in understanding and analyzing current conditions and the development of startup ecosystems. As the model has not been applied to practical context before, the paper will apply the model in a practical context on a city-based startup ecosystem and hence contribute to the infant stage of theoretical and empirical research of startup ecosystems, as emphasized by Autio et al. (2015: 1-2).

### *1.3 Research Question*

The overall purpose of the thesis is to investigate the impact of business accelerators on startup ecosystem development from the perspective of social capital and as a result, determine which role business accelerators play in startup ecosystems and how they shape regional startup ecosystem development. Orientated towards a recommended research question concerning startup ecosystem by Autio et al. (2015: 2) of "How do the roles of specific participants, such as [...] accelerators [...] interact with early stages ventures in the ecosystem creation?" and with the knowledge of social capital as core capital of startup ecosystems (Juling, Freiling & Harima, 2016: 12), the following research question is developed:

What role do business accelerators play in the acceleration of social capital within startup ecosystems?

Throughout this study is expected to make contributions to the state of research on the startup ecosystem, about social capital in the entrepreneurial context and to the role of business accelerators within startup ecosystems as well as to give further impulses for research on the research topic at the end of this thesis.

### *1.4 Methodological Approach and Structure of the Thesis*

In order to answer the research question and with the knowledge of the early stage of the research topic as well as the purpose of the thesis, an exploratory inductive qualitative case study research design is selected. Therefore, based on the conceptual background, interviews are conducted, then subsequently coded are provided, analyzed, linked to current literature and finally interpreted concerning the research question.

According to Eisenhardt and Graebner (2007: 26) and Yin (2009: 3), sound empirical research typically begins with strong grounding in related literature and identifying a research gap. Thus, after the introduction, the second chapter contains the conceptual background including the research object, the conceptual lens and the research focus of the thesis. In this paper the object of research are startup ecosystems that are defined and then explained by means of the Eight Capital Model of Entrepreneurial Ecosystems. The conceptual lens of the study is social capital, which is extensively defined and includes the division of social capital in bridging and bonding social capital as well as the source and the benefits of social capital. The research focus lies on business accelerators that, like the research object and conceptual lens, are defined with particular emphasizing of the heterogeneity between business accelerators,

similarities to a related incubator program and research on business accelerators as dealmakers. All three subchapters of the conceptual background are closed with their different current states of research to expose the need for more research. The third chapter deals with the methodology of the thesis, containing the research design, the procedure of data selection, collection and analysis as well as the author's concerns about the research validity and reliability of the thesis. Chapter four sums up the results of the analysis with the main focus on the role of business accelerators in social capital acceleration in startup ecosystems and their role in social capital acceleration beyond the program. The fifth chapter comprises the discussion part of the thesis containing the contribution of the thesis towards the research question, implications concerning the impact of business accelerators on the Eight Capital Model of Entrepreneurial Ecosystems as well as the limitations of the thesis. The sixth and final chapter presents the conclusion of the thesis and recommendations for further research on the business accelerators role in the startup ecosystem.

## 2 Conceptual Background

### *2.1 Startup Ecosystems*

#### *2.1.1 Definition of Startup Ecosystems*

Due to the emergence of the concept in recent years, the literature currently presents no commonly shared definition of startup ecosystems, also identified in the current literature as entrepreneurship/entrepreneurial ecosystem (Spilling, 1996; Cohen, 2006; Stam, 2014; Kelley, Singer & Herrington, 2016) or ecosystem for high-growth startup firms (Napier & Hansen, 2011).

Similar to The Startup Ecosystem Report (Compas.co, 2015), this paper will apply the term startup ecosystem, as the research focus lies on the role that business accelerators play within ecosystems, which almost exclusively work together with startups (Miller & Bound, 2011: 3; Radojevich-Kelley & Hoffman, 2012: 54; Cohen, 2013: 19). Startups differ from other forms of ventures in their age, innovativeness and growth potential. In this study, startups are younger than ten years, are highly innovative with their technologies and/or business model and strive for a significant employee and sales growth (Blank & Dorf, 2012: xvii; Ripsas & Tröger, 2015: 12). Regarding these characteristics, it is clear that startups need access to specialized support and resources that differ in many forms from the needs of classic new businesses (Napier & Hansen, 2011: 3; Mason & Brown, 2013: 4). Thus, the term startup ecosystem, instead of e.g. entrepreneurial ecosystems, seems to be more suitable and applicable in the context of the thesis.

Most of previous studies on startup ecosystems focus on the interdependencies among actors within the ecosystem and the role of the context in enabling or restricting entrepreneurial activities (Stam, 2014: 2). In a very general manner, a startup ecosystem can be described as a dynamic and complex organism (Mason & Brown, 2013: 19) that consists of a set of various individual elements that are mutually interrelated with each other in a highly complex manner within a certain city or region (Isenberg, 2010: 3; Juling, Freiling & Harima, 2016: 4-5). Therewith, a startup ecosystem represents the combination of conditions that shape the context in which entrepreneurial activities take place (Kelley, Singer & Herrington, 2016: 30). The interdependent set of actors within the startup ecosystem is governed in such a way that it enables entrepreneurial action (Stam, 2014: 2) and the resources within the ecosystem are specialized in scaling and developing young-growth firms (Napier & Hansen, 2011: 10). Heavily inspired by Lindsay, Ashill and Victorio (2007: 1), van Weele, Steinz and van Rijnsoever (2014: 3) describe startup ecosystems as "the set of tangible and intangible environmental factors that shape the performance of [...] start-ups, in a geographically and politically defined area". Mason and Brown (2013: 5) define startup ecosystem in a more specific and complex way as "a set of interconnected entrepreneurial actors (both potential and existing), entrepreneurial organizations (e.g. firms, venture capitalists, business angels, banks), institutions (universities, public sector agencies, financial bodies) and entrepreneurial processes (e.g. the business birth rate, numbers of high growth firms, levels of 'blockbuster entrepreneurship', number of serial entrepreneurs, degree of sellout mentality within firms and levels of entrepreneurial ambition), which formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment". To speak of a strong and well-functioning startup ecosystem according to Napier and Hansen (2011: 3), it needs "a critical mass of dedicated investors, established businesses, knowledge institution and service providers all specialized and geared towards working with young high-growth firms [...]

characterized by a dense network and collaboration between the key actors". It can be said that a single ecosystem actor has no significant value working alone in the ecosystem. The quality of a startup ecosystem depends on a close and trustful network between the actors supporting and helping each other and generating a kind of 'glue' between the single actors which connects startups to their required resources in the ecosystem. Finally, it is important to keep entrepreneurs who have succeeded with their startups, active and involved in the form of reinvesting their profit and experience back into the local ecosystem either as investors, mentors or in other ways and thereby contributing to the strength of the ecosystem (Napier & Hansen: 2011: 12-13).

*2.1.2 A Conceptual Model of Startup Ecosystems*

In recent years, some scholars and practitioners (Neck et al., 2004; OECD, 2007; Isenberg, 2011; ANDE, 2013) have tried to develop a conceptual model to describe startup ecosystems. However, Juling, Freiling and Harima (2016: 5-6) have recently shown that these existing models are lacking in theoretical foundation as well as in their logical structure concerning the boundaries and interrelations between the proposed elements. Thus, based on previous theories and concepts, they developed the Eight Capital Model of Entrepreneurial Ecosystems, identifying eight interrelating and entrepreneurial influencing key capitals while considering different logical levels, which form startup ecosystems. The identified capitals are "(i) human capital, (ii) social capital, (iii) financial capital, (iv) political capital, (v) economic capital, (vi) infrastructural capital, (vii) cultural capital, (viii) historical capital" (Juling, Freiling & Harima, 2016: 14).

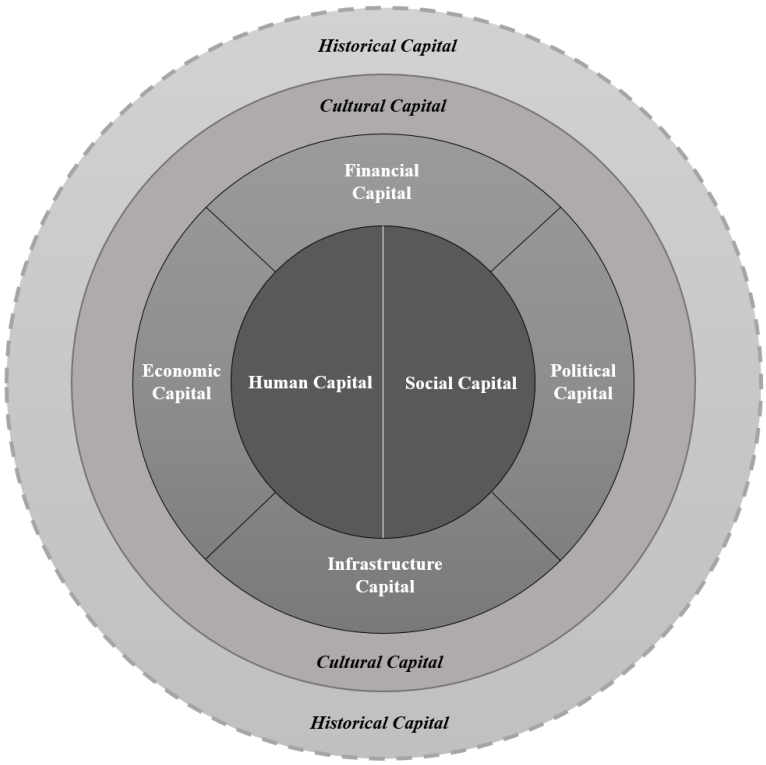


**Figure 1: Eight Capital Model of Entrepreneurial Ecosystems (Juling, Freiling & Harima, 2016: 14)**

The Eight Capital Model of Entrepreneurial Ecosystems is subdivided into four levels. The first level and at the same time the core of the model contains human capital (knowledge and skills of individuals) and social capital (resources embedded within the network of relationships), as both capitals strongly characterize entrepreneurs and can be directly related to the entrepreneurial activities of entrepreneurs within startup ecosystem. The second level of the Eight Capital Model of Entrepreneurial Ecosystems consists of financial capital (availability and access to different types of financial sources), political capital (politically favorable business environment), economic capital (existing industries and consumers) and infrastructure capital (education and research, physical and support) that are closely related to each other. All four capitals are not resources that are related to entrepreneurs, like human and social capital, but are essential for a supportive and efficient ecosystem for entrepreneurial activities. The third

level of the model is represented by cultural capital (entrepreneurial related perception and intention) and the fourth by historical capital (historically embedded attributes of society and culture). Similar to cultural capital, historical capital as an embedded resource in the society and culture of an ecosystem has the least direct relation to entrepreneurial activities within a startup ecosystem. Nevertheless, since history influences many aspects of the society in an ecosystem, it is crucial to reflect the time dimension when understanding, investigating and interpreting the recent situation of startup ecosystems (Juling, Freiling & Harima, 2016: 7-14).

*2.1.3 State of Startup Ecosystem Research*

The Eight Capital Model of Entrepreneurial Ecosystems presents the latest literature-based framework that helps in the understanding and analysis of current conditions and the development of startup ecosystems. Nevertheless, the research on startup ecosystems is still at early stage of development and more theoretical and empirical work focusing on entrepreneurial ecosystem creation and dynamics is needed (Autio et al., 2015: 1-2). According to Isenberg (2010: 3), many regions and countries are still struggling to identify ways for enhancing the growth performance of entrepreneurial firms. Napier and Hansen (2011: 5) point out that there is a growing interest in understanding the dynamics, driving forces, value creation and collaborations in startup ecosystems. Additionally, according to the 3. Deutscher Startup Monitor, startup ecosystems are highly interesting research topics as they allow economic decisions to be illustrated to strength regional ecosystems (Ripsas & Tröger, 2015: 67). As the Eight Capital Model of Entrepreneurial Ecosystems has not yet been practically applied, this paper will apply the model in the practical context of a city-based startup ecosystem to give further contributions to the model in the discussion part of this thesis.

*2.2 Social Capital*

*2.2.1 Definition of Social Capital*

Based on Woolcock (1998: 161-167) and Putnam (2000: 22-23) and according to Adler and Kwon (2002: 19), the definition of social capital can be either focused on external relations between people (bridging forms of social capital) or on internal relations within collectives (bonding forms of social capital).

Bridging social capital focuses primarily on social capital as a resource that inheres in a social network tying a focal actor to different other actors. It is located in the external ties of actors and their actions can be greatly facilitated by linkages to other actors in the social network (Adler & Kwon, 2002: 19). In this view social capital is created through relations among individuals who facilitate action (Coleman, 1988: 100, 1990: 305) and can be seen as "a resource that actors derive from specific social structures and then use to pursue their interests" (Baker, 1990: 619). More precisely, Bourdieu and Wacquant (1992: 119) define social capital as "the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition". Furthermore, Knoke (1999: 18) describes social capital as "the process by which social actors create and mobilize their network connections [...] to gain access to other social actors' resources". Thus an actor's personal social network with other actors, who can be expected to provide support and resource opportunities, can give the actor the ability to secure benefits (Boxman, De Graaf & Flap, 1991: 52; Burt, 1992: 9; Belliveau, O'Reilly & Wade, 1996: 1572; Burt, 1997a: 355; Portes, 1998: 4-6) in the way of privileged access to support as well as resources and lastly, under certain circumstances, converting his social connections into economic capital (Bourdieu, 1985: 242).

Bonding social capital focuses on collective actors' internal characteristics. Social capital of a collective is in its internal linkages among individuals and groups, which contains features that give a collective cohesiveness and further facilitate the pursuit of collective goals (Adler & Kwon, 2002: 21). Brehm and Rahn (1997: 999) highlight the relationships between actors within a web facilitating the intent of collective action for common purposes. Regarding that, Fukuyama (1997: 16) defines social capital as "a certain set of informal values or norms shared among members of a group that permit cooperation among them". Networks, norms and trust in particular, facilitate coordination and cooperation within a collective and affect the economic goal-seeking behavior of its members regarding mutual benefits (Portes & Sensenbrenner, 1993: 1323; Putnam, 1995: 67; Ingelhart, 1997: 188; Casson & Giusta, 2007: 231). Based on prior definitions of Bourdieu (1985: 247-248) and Burt (1992: 9), Nahapiet and Ghoshal (1998: 243) present a suitable and combined definition of both, the bridging and bonding view of social capital, as "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social

unit. Social capital thus comprises both the network and the assets that may be mobilized through that network". Despite these differences in definition, the consensus is growing in the literature that "social capital stands for the ability of actors to secure benefits by virtue of membership in social networks or other social structures" (Portes, 1988: 6).

As the definitions of social capital highlight networks, relations and ties between actors, the question arises of why it is called social capital. Portes (1998: 4-5) and Casson and Giusta (2007: 221) divide the term, social capital, into two elements: the social relationship itself that allows individuals to claim access to resources possessed by their associates, and the amount and quality of those resources. More precisely, social capital has much in common with other forms of capital. Firstly, it can be seen as an asset (Wolfe, 2002: 20) in which other resources can be invested, by expecting future flows of benefits. Through investments in external ties, actors can benefit from a preferable access to information, power or solidarity within the network, whereas investments in internal ties strengthen the collective identity and expand the capacity for collective actions (Adler & Kwon, 2002: 21). Secondly, social capital is appropriable for several purposes, e.g. information gathering or beneficial resource-seeking (Coleman, 1988: 108-109). Thirdly, under certain circumstances social capital can be converted into economic capital (Bourdieu, 1985: 243) and other advantages. Fourth, social capital can be a substitute for complementing other resources, such as compensating a lack of financial or human capital through superior relations with other actors (Burt, 1992: 10) and may improve the efficiency of invested economic capital (Adler & Kwon, 2002: 21-22) by, for instance, reducing transaction costs (Lazerson,1995: 53). Fifth, like physical or human capital, social capital needs maintenance in the sense that social bonds have to be cared for and renewed or they lose efficacy in the long-term, as social capital grows and develops with its use (Adler & Kwon, 2002: 22; Westlund & Bolton, 2003: 82). Nevertheless, unlike many other forms of capital, social capital is not the private property of those who benefit from it and is not used competitively, which makes social capital a kind of a collective good (Hechter, 1987: 34; Coleman, 1988: 116, 1990: 315; Westlund & Bolton, 2003: 88). Burt (1997b: 339) argues that social capital is the quality created between actors and is further located in the actors' relations with others and not in the actor itself according to Coleman (1988: 98), Burt (1992: 58) and Westlund and Bolton (2003: 88). Whereas economic capital is in people's bank accounts and human capital is inside their heads, social capital inheres in the structure of their relationships. To possess social capital, a person must be related to others, and it is those others, not themself, who are the actual source of advantage (Portes, 1998: 7). Moreover, in contrast to other forms of capital, investments in building social capital are not really measurable. According to Solow (2000: 7), social capital cannot really be analyzed within the same conceptual apparatus as traditional capital. Similarly, Nobel laureate, Becker (1996: 5), states that rates of return on social capital cannot be directly measured since utilities cannot be observed. Hence, even if social capital has many things in common with other forms of capital, in some respects the term capital has to be seen more metaphorically in the context of social capital (Adler & Kwon, 2002: 22).

### *2.2.2 Source of Social Capital*

As mentioned before, social capital is located in the structure and content of the ties that make up the social network, which can be mobilized to facilitate actions. Thereby the actors' volume of social capital depends on the size of his network of connections, which he or she can effectively mobilize as well as on the volume of the capital of those actors to whom he or she is connected (Bourdieu, 1985: 247). Based on previous research on the source of social capital (Blumberg and Pringle, 1982; Maclnnis, Moorman, & Jaworski, 1991), Adler and Kwon (2002: 24-27) see the source of social capital in the (i) opportunity, (ii) motivation and (iii) ability created by social relations.

First of all, a network of social ties creates opportunities for their actors. Bridging ties give actors within the network opportunities to access their contacts' resources, whereas bonding ties of collective actors give actors the opportunity to act together more efficiently (Adler & Kwon, 2002: 24). According to Burt (1997b: 339), social capital enhances the actors' ability to identify and develop opportunities and hence get higher returns on their capitals (e.g., human or economic capital) because the actor is more likely to identify and develop rewarding opportunities in comparison to actors that are not linked with other actors. Coleman (1988: 101-109) and Burt (1992: 9) show that direct and indirect network ties provide the opportunity to access support through other actors within the network as well as to access support that other actors can mobilize through their own network ties. Whereas Coleman (1988: 107) points out that a tight network structure helps the creation

of norms and preserves the trustworthiness within the network and thus strengthens social capital. Burt (1992: 17) shows that a sparse network often provides greater social capital benefits. In his view, the relative absence of strong ties facilitates social capital as dense networks tend to convoy redundant information, while weaker ties can be a source of new knowledge and resources. Similarly, Granovetter (1973: 1369-1378) states that weak ties are indispensable to individuals' opportunities as actors who are more weakly tied are more likely to move in circles different from their own and thus can reach more people and access more information and hence, are more likely to hear about opportunities. Strong ties mainly breed local cohesion as the greater the degree of the tie, the more cohesive the community and the more capable it is of acting together, but people to whom an actor is strongly tied are likely to come into contact with the same information as the actor. Nevertheless, besides the extent to which actors' contacts are connected, network ties facilitate linkages between groups that may not otherwise be connected and hence give actors different kinds of opportunities they can use to pursue their intentions (Burt, 1997b: 340; Adler & Kwon, 2002: 24; Casson & Giusta, 2007: 230).

Complementing these opportunities, network structures provide their actors, according to Portes (1998: 5-6), with the second source of social capital, which lies in the motivation of actors to help each other in the absence of direct returns for their engagement. Putnam (1993a: 167), Portes (1998: 9), Knoke (1999: 33) as well as Leana and Van Buren (1999: 542) argue that social capital is based on shared norms and trust of the actors within a network in the sense of the willingness of actors to pursue a collective goal. However, even in the absence of immediate or certain returns of social capital, the engagement of actors helping each other is sometimes motivated by normative commitments (Putnam, 1993a: 172) in accordance with the philosophy "give before you get" (Feld, 2012: 111) or "I'll do this for you now, knowing that somewhere down the road you'll do something for me" (Putnam, 1993a: 183) that foster collective engagement and bonds communities. According to Portes (1998: 7), actors provide privileged access to resources with the expectation that they will be repaid sometime in the future.

Besides the opportunity and motivation, the third source mentioned by Adler and Kwon (2002: 26), is the ability to access competencies and resources that the network provides. Even if an actor is a member of a network and other members of the network are motivated and likely to help, without the right expertise or resources these ties are relatively useless in following the actors goals. Gabbay and Leenders (1999: 2), Leana and Van Buren (1999: 543) and Lin (1999: 467-468) point out that the extend of social capital that is provided within a network, depends on the resources that are available to the actor within the network that the actor can potentially mobilize through its social relations. Finally, as the potential resources depend on the contacts' motivation and on the opportunity created by the contacts within the network, according to Adler and Kwon (2002: 27) all three sources must be present to activate social capital.

### *2.2.3 Benefits of Social Capital*

Since the sources of social capital have been presented, the questions arise of which benefits, as mechanism through which social capital increase an actor's capacity for action and its usefulness in attaining a specific type of goal (Sandefur & Laumann, 1998: 485, 493), can be regarded in relation to social capital. Putnam (1993b: 35-36) has outlined it as "working together is easier in a community blessed with a substantial stock of social capital". According to Sandefur and Laumann (1998: 481), the literature on social capital presents that actors who augment their social capital gain, benefit in the form of (i) superior access to information, (ii) power in form of influence and control and (iii) social solidarity.

Firstly, social capital enhances the access of an actor to a broader source of information (Burt, 1992: 2; Casson & Giusta, 2007: 230), that provides actors access to more timely and relevant information about upcoming opportunities and about other actors that permit more effective instrumental action in competition with other actors (Sandefur & Laumann, 1998: 485-486). For instance, network ties allow actors to gain information about job opportunities (Granovetter, 1973: 1371; Lin, Ensel & Vaughn, 1981: 394; Boxman, De Graaf & Flap, 1991: 69; Fernandez & Weinberg, 1997: 884), innovations (Burt, 1987: 1288), future demands and anticipate customer preferences (Uzzi, 1997: 45-49) and help firms acquire new skills and knowledge (Loury, 1992: 100; Powell & Smith-Doerr, 1994: 34-35; Podolny & Page, 1998: 62). Furthermore, Hansen (1999: 82-85) shows that weak ties within social networks facilitate the cost-effective search by product development teams for new information and that strong ties facilitate the cost-effective transfer of complex information and tacit knowledge. Moreover, in the broader aggregate view of positive externalities of social capital, Burt (1997b: 340-341) shows that social capital enables

brokering activities that bring information from one actor to another and that additionally, the entire network will benefit from an outflow of information.

Secondly, social capital can enhance the power of actors within the social network. Influence and control of an actor within a social network can occur through building up trust, norms (Sandefur & Laumann, 1998: 489) and a set of obligations to other focal actors (Coleman, 1988: 102) or by bridging groups that without the network, were disconnected and by this may get in the position of being able to negotiate terms that are more favorable for their interest (Burt 1992: 47-48). Finally, this benefit allows individual actors as well as the broader aggregate to speed up their efforts (Burt, 1992: 4; Adler & Kwon, 2002: 29).

The third major benefit of social capital is social solidarity, which is obtained among actors when a degree of mutual trust and commitment exists among them that is independent of any specific transactions (Sandefur & Laumann, 1998: 491). Portes (1998: 8) describes solidarity as a situation where people that are in a common situation, learn to acknowledge one another mutually ch other and support each other's initiatives. Therewith trustful relationships give an actor the chance to use its resources more efficiently and effectively in order to attain desired goals (Sandefur & Laumann, 1998: 492). Bourdieu, (1985: 249) states that "the profits which accrue from membership in a group are the basis of the solidarity which makes them possible". Strong and shared social norms, beliefs and values combined with a high degree of closure of the social network, tend to increase the compliance of rules within a social network and therewith allow actors to subordinate their individual interest to the greater interest of the community as well as reduce the need for cost-effective formal controls (Adler & Kwon, 2002: 29; Wolfe, 2002: 20). Moreover, solidarity lowers monitoring costs and leads to higher commitment (Ouchi, 1980: 135), permits faster dispute resolution, prevents the accumulation of grievances and grudges (Nelson, 1989: 379) and transmits more sensitive as well as richer information (Krackhardt & Hanson, 1993: 106). In the broad aggregate, according to Putnam (1993a: 89-90), internal solidarity of members in one association may spill over through members' involvement with other associations and end in a higher level of generalized trust (Adler & Kwon, 2002: 30).

#### *2.2.4 State of Social Capital Research in Entrepreneurial Context*

It is well known that social capital can explain actors' relative success in the way that social capital among others influences career success (Burt, 1992: 116; Gabbay & Zuckerman, 1998: 213), helps workers find jobs (Granovetter, 1973: 1371), creates a richer pool of recruits for firms (Fernandez, Castilla, & Moore, 2000: 1288) or facilitates the creation of intellectual capital (Nahapiet & Ghoshal, 1998: 242). Previous research concerning social capital and entrepreneurship displays that social capital facilitates entrepreneurship (Chong & Gibbons, 1997: 18-19), influences several stages of entrepreneurship (Greve & Salaff, 2003: 30; Casson & Giusta, 2007: 230-232) and contributes to the process of new venture creation (Hansen, 2001: n.p.; Baron & Markman, 2003: 41; Davidsson & Honig, 2003: 301; Liao & Welsch, 2005: 345; DeCarolis & Saparito, 2006: 41). Moreover, regarding Walker, Kogut and Shan (1997: 109), social capital fosters the formation of startups, as startups may have an expertise related to technological innovation but they often lack resources, which are possessed by other actors, e.g. large firms. According to Isenberg (2010: 8-9) and Mason and Brown (2014: 4-21), the support of startups with network-building is at least as important as providing these firms with simple access to financial support. Enterprises and particular startups need to be better connected to other actors to profit from networking benefits. For instance, regarding social capital and financial support, The Global Startup Ecosystem Report state that the vast majority of early stage investments are found through the networks of trusted human relationships (Compas.co, 2015: 17). In an entrepreneurial sense, Leenders and Gabbay (1999: 483) as well as Casson and Giusta (2007: 221) refer to social capital as the set of resources, tangible or virtual, that results in a corporate player through their social relationships, facilitating the realization of their goals and finally show the capitalized value of improvements in economic performance that can be attributed to high-trust social networks. According to Mason and Brown (2013: 5) and Juling, Freiling and Harima (2016: 12), social capital counts as a core capital of a startup ecosystem, as entrepreneurship is inseparable from social relations (Anderson & Miller, 2002: 23) and embedded in social structures (Johannison, 1988: 83). Social relations and networks represent an invisible infrastructure, which influences aspects of entrepreneurship in the way of improving the entrepreneurial intention,

identifying entrepreneurial opportunities and mobilize knowledge and resources that entrepreneurs need for the implementation of the entrepreneurial opportunities (Adler & Kwon, 2002: 22-30; Greve & Salaff, 2003: 4; Casson & Giusta, 2007: 221-224, 230-232; Juling, Freiling & Harima, 2016: 8). Ecosystems that provide a great stock of social capital in the form of social networks, where entrepreneurs have access to valuable new information, capital, knowledge and labor, increase the probability that entrepreneurs identify and recognize business opportunities (Greve & Salaff, 2003: 5; Arenius & De Clercq, 2005: 250; Ramos-Rodríguez et al., 2010: 566). Furthermore, these ecosystems support entrepreneurs in acquiring the resources that are needed, to exploit the recognized business opportunities, to finally start or grow their business (Davidsson & Honig, 2003: 15-17; Isenberg, 2010: 8-9; Mason & Brown, 2014: 4-21). As a results it can be predicated that entrepreneurs with great social capital are more likely to acquire resources through their relations within the ecosystem and therefore increase the probability of survival and the growth potential for their newly established ventures (Brüderl & Preisendörfer, 1998: 213; Elfring & Hilsink, 2003: 413; Hoang & Yi, 2015: 6). Besides the impact of social capital on the individual level of actors within an ecosystem, according to Feldman and Zoller (2012: 24), social capital has certainly affected the vibrancy of the regional economy and the degree of entrepreneurial activity. Similarly, Portes (1998: 19-21) states that social capital is a structural property of large aggregates and that cities, which are moving ahead economically, do so because they have high social capital which tends to lead to economic development. Finally, as social capital has important implications for the understanding of the formation of startup supporting networks (Walker, Kogut, & Shan, 1997: 110, 118), the intent of this paper is to show how the programs of business accelerators foster social relationships and therewith accelerate social capital within startup ecosystems.

### *2.3 Business Accelerators*

#### *2.3.1 Definition of Business Accelerator*

In 2005/2006 (Miller & Bound, 2011: 3; Feld, 2012: 109) the first business accelerators, also known as corporate accelerators (Kawohl, Rack & Strniste, 2015), where introduced by large enterprises, focusing on startups in the early seed and formation stage (Fishback et al., 2007: 5; Bliemel et al., 2013: 1; Cohen & Hochberg, 2014: 4; Ripsas & Tröger, 2015: 17). Besides a small amount of seed capital and working space, their programs offer primarily networking, educational and mentorship opportunities with people inside and outside the program, such as key experts, successful entrepreneurs, program participants and graduates, venture capitalists (VCs), angel investors or corporate executives (Miller & Bound, 2011: 9, 27; Radojevich-Kelley & Hoffman, 2012: 58; Carmel & Richman, 2013: 3; Cohen, 2013: 19, 22; Fehder & Hochberg, 2015: 7). The seed capital provided by a business accelerator is usually kept to a minimum (Bluestein & Barrett, 2010: n.p.) and orientated to the amount of money, which the founder team needs in order to sustain during the program and a short period afterwards (Miller & Bound, 2011: 9). In-house experts, highly qualified mentors and coaches as well as guest speakers (Barrahag, 2012: 54; Bliemel et al., 2013: 5) give the participants educational seminars and support in startup-related subjects like unit economics, search engine optimization, legal and tax advice, pitch practice and furthermore provide individual guidance in addition to seminars (Miller & Bound, 2011: 10; Feld, 2012: 115; Caley & Kula, 2013: 14; Cohen 2013: 23; Compas.co, 2015: 17). Through teaching, mentoring and coaching, business accelerators support startups human capital (Wu, 2011: n.p.; Barrehag et al., 2012: 44; Radojevich-Kelley & Hoffman, 2012: 66) in the form of acquiring technical skills, increasing product and market knowledge, helping to define and build their initial products, identifying market opportunities and promising customer segments, secure resources (e.g., capital and employees), creating powerful networks or improving their business concept (Fishback et al., 2007: 5; Miller & Bound, 2011: 3, 26; Radojevich-Kelley & Hoffman, 2012: 57; Caley & Kula, 2013: 16; Mason & Brown, 2013: 13-15; Cohen & Hochberg, 2014: 4). The programs of business accelerators typically last about three months and finally end in pitch events, called Demo Days. There the participating startups present their businesses to a large audience of qualified investors with the intent of catching their first huge funding, which otherwise would be very difficult to reach without the accelerator program, especially for first-time founders (Miller & Bound, 2011: 10, 27; Bliemel et al., 2013: 4-5; Cohen 2013: 19; Compas.co, 2015: 17). Thus, it can be said that business accelerators are designed to help startups with the new venture process and speed up their market entry (Cohen 2013: 19; Cohen & Hochberg, 2014: 10). In counter witness for the support, most

business accelerators receive shares in the participating startups and thereby get involved in the future distribution of profits (Cohen & Hochberg, 2014: 4-5). Additionally, by supporting startups, the companies behind the business accelerator programs have access to a great amount of young talented people for recruiting new employees and to the innovative business ideas of the startups that can be useful for the company (Kawohl, Rack & Strniste, 2015: 3; Für-Gründer, 2016: n.p.). By working together with high innovative startups, companies have the opportunity to adopt knowledge about new products and service, optimize their intern innovation processes as well as the research and development (R&D) unit, rethink about their position in specific business segments to increase their competitiveness on the market and promote their image as innovative and attractive company (Gaida, 2011: 21; Kawohl, Rack & Strniste, 2015: 12).

Due to little formal academic literature, there is no clear and universally accepted definition of business accelerators (Barrehag et al., 2012: iii; Isabelle, 2013: 18; Kawohl, Rack & Strniste 2015: 6). However, Cohen and Hochberg (2014: 4) presents a suitable definition of a business accelerator, even if relatively slim and abstract, as "a fixed-term, cohort-based program, including mentorship and educational components, that culminates in a public pitch event or demo-day". This status quo is especially justified by the (i) heterogeneity between business accelerator programs, their (ii) similarities to supportive programs called 'incubators' as well as the newness of these institutions (Cohen & Hochberg, 2014: 3; Fehder & Hochberg, 2015: 8; Kawohl, Rack & Strniste, 2015: 3).

The programs of business accelerators are heterogenic in the manner that the programs may vary between for-profit or non-profit, in the amount of financial support, in the size of the equity stake taken, in the length of the mentorship and educational program, in the availability of co-working space as well as in the specific sector or industry the business accelerator focuses on (Wu, 2011: n.p.; Barrahag, 2012: 55; Cohen & Hochberg, 2014: 4-5). Many business accelerators are diversified into industry sector focused programs, e.g. focusing on ICT, energy, education, healthcare, bioscience or clean-tech related startups (Miller & Bound, 2011: 35; Napier & Hansen, 2011: 12; Bliemel et al., 2013: 5; Isabelle, 2013: 19; Cohen & Hochberg, 2014: 2; Fehder & Hochberg, 2015: 6). Additionally, some business accelerators become affiliated with VC firms or business angels, some with corporations, and sometimes others with universities, local governments, or non-governmental organizations (Cohen & Hochberg, 2014: 4-5).

Business accelerator programs bear similarities to the supporting programs for young and innovative firms called incubators, which were established in 1959 (Barrehag et al., 2012: 1; Feld, 2012: 115; Caley & Kula, 2013: 6; Cohen, 2013: 21; Isabelle, 2013: 17). These programs can be defined roughly as "facilities that shelter vulnerable new firms until they can become self-sustainable and survive in the environment" (Bliemel et al., 2013: 3). More specifically, Hackett and Dilts (2004: 57) define business incubators as "a shared office space facility that seeks to provide its incubates [...] with a strategic, value-adding intervention system of monitoring and business assistance". However, with closer examination, these previously known institutions differ in several ways compared to business accelerators (Feld, 2012: 115; Fehder & Hochberg, 2015: 1).

Firstly, incubator programs last for one to five years (Amezcua, 2010: 44) and nurture firms by protecting them from the market selection mechanisms for a long period (Cohen, 2013: 21; Fehder & Hochberg, 2015: 8). However, business accelerators avoid codependent relationships with participants, enhance the founders' attention and discipline and finally speed up the process of failure or success of their participating startups in the seed stage (Miller & Bound, 2011: 28; Cohen, 2013: 21), by their short period of strong growth support and a predefined exit date of the program (Miller & Bound, 2011: 3; Bliemel et al., 2013: 4, 13). According to Isenberg (2010: 8-9) and Mason and Brown (2013: 4-5), it is a mistake to provide startups with 'easy' money over a period of years, as incubators do. Startups must be exposed to the rigors of the market early on, to ensure that entrepreneurs develop toughness and resourcefulness to finally achieve success.

Secondly, in contrast to incubators, startups enter and exit the business accelerator as a group (Miller & Bound, 2011: 3; Caley & Kula, 2013: 12). This cohort-based nature leads to a relationship between the participating startups characterized by close ties and communal identity. Moreover the mentioned relationship often results in helping and motivating each other during the program (Miller & Bound, 2011: 10, 28; Cohen, 2013: 22;), e.g. with problem-solving on technical issues or feedback on interactions with potential customers or investors (Carmel & Richman, 2013: 3). Additionally, coaches and mentors of the business accelerator are often responsible for various participating startups

(Fishback et al., 2007: 5) which can further foster the interactions of startups.

Thirdly, while incubators are mostly non-profit and publicly owned (Hackett & Dilts, 2004: 58; Feld, 2012: 115; Isabelle, 2013: 18), business accelerators are commonly for-profit. Even if the business models of business accelerators vary (Barrahag, 2012: 51), a classic example is that investors invest in business accelerators, which act as kind of a small fund. Some of the funds go towards the costs of running the business accelerator and some are invested into participating startups (Miller & Bound, 2011: 24). Business accelerators usually take equity (5-10%) of startups and expect to make return on those shares (Miller & Bound, 2011: 3, 29; Radojevich-Kelley & Hoffman, 2012: 58; Caley & Kula, 2013: 12; Compas.co, 2015: 17; Fehder & Hochberg, 2015: 6). Additionally, some business accelerator directors and managers are also angel investors, who provide additional financing options and are therefore more closely aligned with the startups (Cohen, 2013: 22).

Fourth, incubators typically accept and graduate startups year-round on an ongoing basis (Feld, 2012: 115), whereas business accelerators accommodate groups of startups once or twice a year within their program. This happens after an intensive as well as competitive application process and depending on the quality of applications and the available space and financial resources of the business accelerator (Bliemel et al., 2013: 4; Caley & Kula, 2013: 14; Cohen, 2013: 22). Through the open application process, business accelerators globally attract startups, which in reverse have an impact on the development of the local startup ecosystem, due to the fact that the startup unavoidably operates in the geographical area of the accelerator. (Miller & Bound, 2011: 5; Cohen, 2013: 22).

Fifth, most incubators offer office space, shared supportive services as well as office resources (Hackett & Dilts, 2004: 66; Bergek & Norrman, 2008: 21; Feld, 2012: 115; Cohen & Hochberg, 2014: 5), but specific mentorship is often offered for an additional fee (Fehder & Hochberg, 2015: 8). Business accelerators conversely offer intensive mentorship, education and great opportunities for the participants to build up their social network and create supportive long-term relationships (Miller & Bound, 2011: 3, 10; Feld, 2012: 115; Caley & Kula, 2013: 14; Compas.co, 2015: 17), which is often the primary reason for startups to participate in business accelerator programs (Cohen, 2013: 22-23). These social network relations can provide participants with the ability to receive subsequent rounds of funding (Barrehag et al., 2012: 44) or increase their likelihood of receiving further help from mentors after the program concludes (Radojevich-Kelley & Hoffman, 2012: 65). According to Winston Smith, Hannigan and Gasiorowski (2013: 1) accelerator-backed startups are more likely to receive the first round of follow-up financing sooner than startups that have not participated in a business accelerator.

Finally, besides the previously presented opportunities for participating startups resulting from the business accelerator program as well as chances for the business accelerator itself, according to Miller and Bound (2011: 3, 12, 27), the connections business accelerators create can also have a positive effect on other actors of the ecosystem (e.g., investors, large technology firms, extern startup founders or service providers); and therewith foster the local startup ecosystem (Bluestein & Barrett, 2010: n.p.). Investors, mostly angel investors, VC firms and commercial banks (Napier & Hansen, 2011: 10; Isabelle, 2013: 21), have through social interactions with business accelerators at events and on demo days, access to a pipeline of investable seed-stage startups, proved by the application process of the business accelerator. Therewith, investors can reduce their cost and time required to find startups to invest in. Moreover, as investors often serve as mentors within business accelerator programs, they previously know the startups and their business plans, which provides them with additional information they need in order to make an investment decisions (Miller & Bound, 2011: 12, 27; Barrehag et al., 2012: 44-45; Kim & Wagman, 2014: 521; Fehder & Hochberg, 2015: 7). By examining the effects of direct and indirect ties between entrepreneurs and seed-stage investors on venture finance decisions, Shane and Cable (2002: 364) show that ties influence the selection of ventures to fund through a process of information transfer. Moreover, in connection with the business accelerators, entrepreneurs have the ability to meet and reach out to other actors of the ecosystem (Miller & Bound, 2011: 12, 27; Barrehag et al., 2012: 44-45; Kim & Wagman, 2014: 521; Fehder & Hochberg, 2015: 7). As a result of cooperations, events or other connections with business accelerators, large technology firms have the chance to scout talents more easily that fit as potential employees, find new customers for their products and services or support new startups and therewith call attention to their brand. External startup founders and service providers can create a network to meet customers or investors for their business by working together with the business

accelerator (Miller & Bound, 2011: 12, 27). Fehder and Hochberg's (2015: 31) findings suggest that regional ecosystems, in which business accelerators are established, subsequently exhibit more entrepreneurial financing activity. This activity appears to be not restricted to accelerated startups alone, but spills over to non-accelerated companies as well, as attracting VCs to accelerator activities (mentorship, demo day) may increase the investor exposure of non-accelerator companies in the same geographical area.

*2.3.2 Business Accelerators as Dealmakers*

Based on the opportunities that business accelerators represent for participating startups and other actors of an ecosystem, the term 'dealmaker', in the context of "key social capital actors who mediate entrepreneurial and investor networks by maintaining active, concurrent ties to multiple firms" (Zoller, 2010: 1) seems quite applicable. Napier and Hansen (2011: 13-15) as well as Zoller (2010: 103) associate business accelerators as organized forms of dealmakers, because of their strong motivation and abilities to connect startups with people of relevance and resources (e.g., investors, mentors, established firms or service providers). Through the mostly professional background, experience and local embeddedness in a regional network, business accelerators overcome structural gaps between groups of actors within a region and play a central role as a fiduciary in mediating, shaping and configuring the regional entrepreneurial network by sharing expertise and resources as well as facilitating communication and information flows, especially between startups and investors. Therewith, business accelerators give participants in their program the opportunity to establish their financial, economic or human capital and thereby facilitate new firm creation. As a consequence the participants potentially contribute to the overall strength and success of a regional ecosystem (Zoller, 2010: 22-37, 115-125; Feldman & Zoller, 2012: 24-35; Mason & Brown, 2013: 11). Related to this, Senor and Singer (2009: 203-204) and Winston Smith, Hannigan and Gasiorowski (2013: 1) see business accelerators as an increasingly powerful mechanism in linking financial capital and human capital. The connections between these two are further understood as crucial components of a startup ecosystem and by this actively engage in facilitating new firm formation and creating new ventures. Through the business accelerator's ties within regional ecosystems, its role of mediating relationships and drawing the community together by making connections between the actors of an ecosystem, business accelerators create social capital surrounding entrepreneurial efforts to form kind of a backbone of the regional ecosystem (Zoller, 2010: 1-2; Feldman & Zoller, 2012: 24-26; Carmel & Richmal, 2013: 3; Fehder & Hochberg, 2015: 7). Thereby, as social capital is associated with more successful entrepreneurial regions (Feldman & Zoller, 2012: 30), business accelerators can be seen as an important, powerful part of startup ecosystems (Feld, 2012: 119).

*2.3.3 State of Business Accelerator Research in Startup Ecosystems*

Over the past decade, business accelerator programs have received much attention across the globe (Miller & Bound, 2011: 3). According to Cohen and Hochberg (2014: 2), the estimated number of business accelerator programs ranges between 300 and over 2000 on six continents and the number is increasing rapidly (Carmel & Richman, 2013: 2; Van Weele, Steinz, & Van Rijnsoever, 2014: n.p.). Since these institutions are relatively new, the academic literature is comparatively poor or even virtually non-existent (Wu, 2011: n.p.; Cohen & Hochberg, 2014: 1). As shown, research on business accelerators has so far concentrated on the definition and distinction of these programs as well as on its outcome for participating startups (Fehder & Hochberg, 2015: 4). However, the research on business accelerators that specifically focuses on networks (Carmel & Richman, 2013: 8) and moreover, on the impact of business accelerators on the local startup ecosystem has been weak as the lack of research includes the shortcoming of comprehensive data sources and the novelty of the phenomena. Little is known about the value, efficacy, spillover impacts and the importance of various aspects of these programs for the ultimate success of the local startup ecosystem in which the business accelerator operates (Miller & Bound, 2011: 34; Isabelle, 2013: 22; Cohen & Hochberg, 2014: 1-2, Fehder & Hochberg, 2015: 31). Even if Zoller (2010: 1-3) puts business accelerators in connection with the dealmaker concept and refers to the business accelerator impacts on the larger aggregate of a region, Zoller points out that it is impossible to generalize his findings and that the concept needs more examination (2010: 138). In that sense, business accelerators represent an interesting area for further exploration (Cohen & Hochberg, 2014: 15), especially for the networking process (Radojevich-Kelley & Hoffman, 2012: 57), the wider impact on startup ecosystems and how business accelerators could help develop startup ecosystems in the future (Miller & Bound, 2011: 4-

7). Regarding participants of a startup ecosystems, Autio et al. (2015: 2) point to a possible research question of "how do the roles of specific participants, such as [...] accelerators [...] interact with early stages ventures in the ecosystem creation?". Influenced by this recommended research question, the thesis takes the approach of examining the regional effect of business accelerator programs on a startup ecosystem and particularly on the regional social capital.

## 3 Methodology

### *3.1 Research Design*

As the conceptual background in the beginning of this thesis explains the research object, conceptual lens and focus of the research topic and points out their states of research, the "research design is the logic that links the data to be collected (and the conclusions to be drawn) to the initial questions of study" (Yin, 2009: 24).

In order to the answer the research question, the purpose of this thesis is to investigate business accelerators from the perspective of social capital by collecting qualitative data to finally create propositions regarding the role of business accelerators in the context of social capital acceleration within startup ecosystems. As the aim of this thesis is to increase the knowledge on the subject of business accelerators that can be used to gain a better understanding and thereby helps to clarify the concept in order to finally create propositions through qualitative data rather than to test a given hypothesis, according to Bryman and Bell (2011: 35) and Sue and Ritter (2012: 2) and the purpose of this thesis can be defined as exploratory.

Based on the fact that the conceptual background has shown that research on startup ecosystems and business accelerators is still in its infant stage, the research of the present thesis follows a bottom up approach (Trochim, 2006: n.p.). After dealing with the conceptual background, qualitative data from business accelerators was collected. Moreover similar patterns among the collected data against the background of the underlying concepts and with regard to the research question were detected. Based on findings and results that have been identified, propositions, which end in the development of conclusions, making a contribution to the research topic, were formulated. As the line of arguments is more open-ended and exploratory, as well as moving from specific observations and findings to generalization (Trochim, 2006: n.p.; Bryman & Bell, 2011: 13, 60), the research approach regarding Hodkinson (2008: 98-99) and Bui (2009: 14) can be seen as inductive.

As mentioned before, the research method of collecting data is qualitative. According to Eisenhardt (1989: 537-538), Shadish, Cook and Campbell (2002: 389-392), Eisenhardt and Graebner (2007: 26), Bui (2009: 14-15) and Bryman and Bell (2011: 386-389), qualitative research focuses on achieving a deeper understanding and interpreting social interactions in a unique set of contexts and is concerned with the creation of theory rather than a statistical generalization by analyzing any measurable factors. According to Stake (2010: 31), qualitative research is marked by a rich description of personal action and complex environment. For collecting qualitative data, instruments such as interviewing experts or personal observations, are recommended to get more in-depth information and insights into complex social processes, which would not be possible to obtain by using quantitative data. As the research topic and research questions point to the need of deeper understanding on how business accelerators work within a particular startup ecosystem as well as interpreting their role with focus on social interactions, qualitative research for most suitable outcome was estimated and primary data, through interviews and personal observations, was gathered. Additionally, the websites of the interviewed business accelerators as second data source were used, which serve later interpretation of the results.

Finally, the research strategy of this thesis is a case study as the present thesis strives for a full context analysis (Cooper & Schindler, 2014: 128). According to Kleining (2007: 201), Bui (2009: 14), Gibson and Brown (2009: 49), Bryman and Bell (2011: 41) and Rohlfing (2012: 9-10), case studies are typically used for exploratory qualitative research and typically combine data collection methods such as interviews and observations (Eisenhardt, 1989: 537; Cooper & Schindler, 2014: 165). Yin points out that case studies are suitable to investigate a "phenomenon in depth and within its real life context, especially when the boundaries between the phenomenon and context are not clear evident" (2009: 18). Furthermore, case studies are appropriate strategies for understanding and explaining presumed social causal links that are too complex for survey experimental strategies (Eisenhardt, 1989: 534; Yin, 2009: 4, 19-20). Regarding to Eisenhardt (1989: 548) and Eisenhardt and Graebner (2007: 25), case studies provide the opportunity for inductively building case-based theoretical constructs and propositions and/or midrange theory, by recognizing patterns of

relationships among constructs within and across cases. As the strategy is compatible with the explorative, inductive and qualitative approach of the thesis, the present thesis carries out a case study in form of an in-depth investigation of business accelerators against the background of the research question to recognize patterns across cases, develop propositions and closing off by contributing to the concepts of the research topic and their state of research.

### *3.2 Data Selection*

The purpose of the research is to contribute to the development of theory. The selection of cases is therefore an important aspect of building theory from case studies (Eisenhardt, 1989: 536-537; Eisenhardt & Graebner, 2007: 27). In contrast to random or stratified sampling that is used in testing theory, the selecting of cases within case studies focuses on theoretical sampling, which describes the process of selecting research participants that are relevant to the research (Gibson & Brown: 2009: 56), theoretically useful (Rohlfing, 2002: 223), polar types in which the process of interest is observable (Eisenhardt, 1989: 536-537), suitable for illuming and extending relationships and logic among constructs (Eisenhardt & Graebner, 2007: 27) and most likely illuminate the research question (Yin, 2009: 26). According to Bui (2009: 126), for qualitative research the sampling procedures are a critical component of the data collection process including identifying the region where the research is conducted and explaining how the participants were selected.

Isenberg (2010: 3), Napier and Hansen (2011: 11) and Masen and Brown (2013: 12-27) point out that each startup ecosystem emerges under a unique set of conditions and circumstances and therefore should be seen as a regional entity. Thus, there is no ‘one size fits all’ approach. Every ecosystem needs a different approach that is customized to its unique local set of circumstances. Based on that, even if Germany as a startup ecosystem has become more dynamic regarding business accelerator programs in recent years (Kawohl, Rack & Strniste, 2015: 3), Berlin applies as “the accelerator city in Germany” (Für-Gründer.de, 2016: n.p.). Moreover, Berlin can be classified as the most well-known and most rapidly growing founder and startup ecosystem in Germany (Ripsas & Tröger, 2015: 15; Metzger, 2016: 3). According to McKinsey Berlin (2013: 12) Berlin is on its way to become the most powerful startup ecosystem in Europe by 2020. The Global Startup Ecosystem Report (Compas.co, 2015: 20-73) ranked Berlin 9th among the top 20 startup ecosystems around the world, moving up from number 15 in 2012, which shows that Berlin is going straight from being a local powerhouse to a global player. Moreover, Berlin toped all other ranked ecosystems in view of its growth index, whose increase can mainly be attributed to an explosion in exits and VC investments. Berlin’s tech scene in particular, has grown very quickly in recent years and is today the home of between 1800 and 3000 active tech startups. However, a prosperous ecosystem for the founding of new businesses thrives on the network between all actors. Meanwhile, Berlin’s startups are well networked within clusters, linkages to established companies, parts of the politics and other actors are still improvable. One form of fostering dialog, especially between startups and established companies, and strengthening linkages among the ecosystems are business accelerators (McKinsey Berlin, 2013: 8-9). Since Berlin has proven to be an interesting startup ecosystem it requires deeper investigation, due to this an online search for interesting and recommended accelerator programs of established businesses in Berlin was conducted. Firstly, the business accelerator was reached via telephone to get specific contact data of an expert who could be contacted for a potential interview. In the second round, an email was sent to the recommended contacts, containing a short introduction to the research topic and the interview request with all necessary information. In the period from the 18th to the 27th of July 2016, seven interviews were conducted and therewith represent a qualified sample for the case study. According to Eisenhardt (1989: 545), “there is no ideal number of cases, a number between 4 and 10 cases usually works well.” Similarly, Yin (2009: 54) states “the ability to conduct 6 or 10 case studies, arranged effectively within a multiple-case design”, or Cooper and Schindler (2014: 166) think that a “minimum of 4 cases with a maximum of 15 seems to be favored”. Four of the interviews were conducted in Berlin in the business accelerator’s office spaces along with a guided tour in the business accelerator’s building to have the opportunity to make personal observations. Three of the interviews were conducted via telephone, as many business accelerators are too busy for a personal appointment, currently not in Berlin or have no time because they get too many interview requests from Master’s and PhD students, which additionally highlights the interest in this research topic. Regarding to Eisenhardt and Graebner (2007: 28), a key approach while conducting a case study is using numerous and highly knowledgeable

informants who view the focal phenomena from diverse perspectives as well as actors from other relevant organizations and outside observers. Thus, the first interview was conducted via telephone with the Transformation and Technology - Experience Center of PricewaterhouseCoopers (PwC) which is not directly located in Berlin, but gave the author many interesting information about their three different in-house business accelerator programs, and about the development and importance of business accelerator programs in Germany and worldwide. The following table shows the interviewee, the business accelerators they work for and key notes about the data collection process. A more extensive summary of the interviewees and business accelerators can be found in Appendix I.

| Interview Partner | Business Accelerator | Data Collection |
|---|---|---|
| **Human Nagafi**<br>Global Business Transformation<br>(Frankfurt) | 1. **PwC Accelerator**<br>2. PwC Experience Center<br>3. PwC and Techstars Accelerator | Telephone interview<br>+ Confidential documents to the different programs |
| **Dr. Alexander Zumdieck**<br>Managing Director<br>(Berlin) | **METRO Accelerator** | Face-to-face interview<br>+ Personal observation |
| **Constantin von Bergmann-Korn**<br>Marketing and Communications, Portfolio Management<br>(Berlin) | **Axel Springer Plug and Play Accelerator** | Face-to-face interview<br>+ Personal observation |
| **Daniela Lopes**<br>Head of Operations<br>(Berlin) | **Startupbootcamp** | Face-to-face interview<br>+ Personal observation |
| **Philipp Limburg**<br>Business Analyst<br>(Berlin) | **Microsoft Accelerator** | Face-to-face interview<br>+ Personal observation |
| **Verena Vellmer**<br>Communications<br>(Berlin) | **Hub:raum** | Telephone interview<br>+ Personal observations |

**Table 1: Interview Partner**

### *3.3 Data Collection*

The research includes multiple qualitative methods for gathering data recommended by Tracy (2010: 843-844). For collecting data, the study used primary data in the sense that the author actively participates in the process of collecting data, as well as secondary qualitative data, which relies on secondary sources of information. Eisenhardt and Graebner (2007: 28) and Yin (2009: 11) point out that theory-building from case studies usually relies extensively on qualitative data from interviews as a highly efficient way of gathering rich empirical data and other sources, such as observations. Hence, within the thesis semi-structured interviews with business accelerator experts were conducted. Orientated towards Gibson and Brown (2009: 88-89), Bryman and Bell (2011: 472-480) and Cooper and Schindler (2014: 153), the author developed an interview guide, as red thread while interviewing experts and prepared a list of questions that help in developing a dialog between the interviewer and the interviewee. Before the first interview was conducted the interview guide was previously tested and adjusted through an examination by the thesis supervisor with regards to logic, content and comprehensibility. The interview guide can be found in Appendix II. According to Cooper and Schindler (2014: 153), especially at the beginning of the interview, the interview guide should begin with broader questions, designed to put participants at ease and give them a sense that they have a lot to contribute, followed by more specific questions to draw out details. Once the interviewee has been welcomed and the research topic has been explained to the interviewee, the author first chooses broader questions about the interviewees themselves to identify them as experts and about the business accelerator program in general, followed by more specific questions about social-capital-related information, which is useful in the final answering of the research question. Furthermore, the remaining semi-structured interview questions associated with the dialog between interviewer and interviewees allowed the participants to answer without implied choices and enabled the interviewees to explain and clarify their answers more broadly if they wanted to, as a way of getting as much as information as possible. Furthermore, by letting the interviewees talk more

freely, the author had the opportunity of learning about important aspects that have not been previously considered and to discuss certain topics in more detail (Gibson & Brown, 2009: 88). All interviews lasted between 13 and 43 minutes, were audio-taped with the permission of the interviewees (Gibson & Brown, 2009: 94) and transcribed, based on the simple rules of Dresing and Pehl (2011). As all interviews were conducted in German, in the results of the thesis all citations are analogously translated into English. The full transcripts of the interviews can be found in Appendices III – IX.

In addition to the interviews, as primary data, between the 20th and 22nd of July 2016 impressions were gathered by observing social interactions among persons before, during and after the personal interview appointments in the business accelerator working spaces in Berlin. As secondary data the author studied the websites of the business accelerator and analyzed other available materials, such as flyer. This is in line with Cooper and Schindler (2014: 165) who state that case studies combine gathering data in the form of gathering interviews, extract information from company brochures along with observations that is often done in the participant's natural setting.

### *3.4 Data Analysis*

The transcribed interviews are then analyzed by coding the data, inspired by the approaches for qualitative data analysis of Eisenhardt (1989: 540-545), Eisenhardt and Graebner (2007: 25-29), Charmaz (2008: 163-165), Bui (2009: 14-15), Gibson and Brown (2009: 131-142), Glaser and Strass (2009: 101-105), Yin (2009: 20) and Mayring (2010: 602-608).

The first phase of the coding process is known as the initial or open coding phase (Charmaz, 2008: 163). At the beginning each interview was closely read and interrogated in order to become intimately familiar with each case (Eisenhardt, 1989: 540; Yin, 2009: 20; Cooper & Schindler, 2014: 166). In this sense and with reference to Eisenhardt (1989: 540), Bui (2009: 14), Mayring (2010: 603) and Stake (2010: 151), after most of the data for the study was collected, certain topics, themes, issues and unique patterns in each case against the background of the research topic and research question have been identified to then codify the data with the focus on possible meanings of this data. Gibson and Brown (2009: 133) call this the search for empirical codes that emerge through the exploration of data, which may be a derivative from an apriority category of the conceptual background or something entirely new that was not foreseen in the original research formulation. Once empirical codes within the cases have been identified, initial codes in relation to the research topic are then defined, split and redefined into two or more distinct elements if the codes become too complex or bring more than one analytic category together as two potentially interesting and closely connected themes prove be prominent features together (Gibson & Brown, 2009: 135-136). Finally, it has been considered and already tried to suggest emergent links between the developed codes and the conceptual background of this thesis, while at the same time being open to new insights that until now have not been considered (Charmaz, 2008: 164; Glaser & Strass, 2009: 251-257; Mayring, 2010: 603).

Since the author has intensively dealt with the coding of each interview, in the second phase the author engages in focused or selective coding that allows the author to sort and synthesize the large amount of data and focus on codes between the cases to evaluate which best explain or interpret the empirical phenomenon (Charmaz, 2008: 163-165; Bui, 2009: 15; Gibson & Brown, 2009: 134). In this sense the author moves beyond individual codes, to a kind of cross-case analysis, which should draw out the relationships between code categories and the significance of such relationships for the development of propositions as well as generalizable conclusions among the cases (Eisenhardt & Graebner, 2007: 27; Gibson & Brown, 2009: 138; Yin, 2009: 20). Therefore, the author investigates which initial codes are most frequent between the cases. By looking for similarities and differences between the cases, the overall cross-case patterns are attempted to be displayed. According to Gibson and Brown (2009: 139), the aim is drawing together a set of codes by grouping the abstracted categories that characterize the data set. Moreover, as mentioned, the idea behind this approach is to go beyond the initial impressions and therewith enhance the probability of capturing novel findings, which may exist in the data (Eisenhardt, 1989: 540-541; Charmaz, 2008: 163-165; Stake, 2010: 182). According to Eisenhardt and Graebner (2007: 25), Yin (2009:20) and Cooper and Schindler (2014: 165-166), this replication logic is central for building theory inductively from cases. Multiple case studies with the opportunity for cross-case analysis, as shown in this thesis, enable comparisons that clarify whether an emergent finding is simply idiosyncratic with a single case or consistently replicated by several cases and therefore is likely to create theory that is more robust because the propositions are more deeply grounded in varied empirical evidence

(Eisenhardt & Graebner, 2007: 27; Bryman & Bell, 2011: 63). In conclusion, the proven cross-cases codes become categories for the result of the thesis, where, if possible, the results based on the analysis are linked with the extant literature to support empirical evidence and finally formulate accurate and interesting tentative propositions of the role business accelerators play in the acceleration of social capital within startup ecosystems (Eisenhardt & Graebner, 2007: 25-29; Stake, 2010: 16). Eisenhardt (1989: 545) states in particular that "tying the emergent theory to existing literature enhances the internal validity, generalizability, and theoretical level of theory building from case study research.". The results of the coding process of the interviews can be seen in Appendix X.

### *3.5 Research Validity and Research Reliability*

According to Bui (2009: 149), Yin (2009: 41-45) and Cooper and Schindler (2014: 257-261), every study design needs to maximize its quality through (i) validity and (ii) reliability of the research. In its simplest way, Bryman and Bell (2011: 41-42) describe the validity of research as being concerned with the integrity of the conclusions that are generated from research and reliability as being concerned with the question whether the results of the study are repeatable. Similarly, Gibson and Brown (2009: 59,182) and Cooper and Schindler (2014: 664, 668) see validity as a characteristic of measurement concerned with the extent that the research measures, what the researcher actually wishes to measure and reliability as a characteristic of measurement concerned with accuracy, precision, and consistency that together describe the extent of agreement of the 'trustworthiness' of processes and the resulting analysis. To maximize the validity of this thesis it was firstly tried to be orientated within the conceptual background of highly ranked scientific journals, despite the novelty of research on startup ecosystem and business accelerator the scientific literature being very poor. Additionally, the different stages of research are emphasized to then explain the research design and strategy. Secondly, reasons for which Berlin is thought of as appropriate for analyzing the role of business accelerators are extensively described. Thirdly, as confirmed by Eisenhardt (1989) and Yin (2009), the analyzed sample of seven cases in form of business accelerators, which can be described as representative, to generalize the results of the study at least for Berlin, which supports the thesis' external validity which is particularly important for qualitative research (Bryman & Bell, 2011: 61). Fourth, an explanation is given, why it is thought that interviews are the best instrument for gathering qualitative data against the background of the research question. For securing the reliability of the study, the author used an interview guide, which is listed in the appendix and can serve as example or template for studies that investigate business accelerators in the context of social capital. Moreover, the detailed illustration of this research approach to investigate the research topic, makes the proceedings of this thesis transparent, which makes the operation of the case study repeatable with the probability of obtaining the same findings and conclusions. Besides the validity and reliability of this thesis, ethical considerations are respected, recommended by Gibson and Brown (2009: 61), Tracy (2010: 846-847), Bryman and Bell (2011: 121-138) and Cooper and Schindler (2014: 45), involving mindfulness of the authors character, actions, and consequences for others. The author asked the interviewees for permission to record the interviews, gave the interviewees an introduction to the research topic so that they could decide to participate or not, avoided asking questions that were too private and offered the interviewees the option of reading the transcribed interviews, which two interviewees made use of. Finally, all participants got the option to read through the finished thesis for personal interest and to avoid deception in the case of this thesis being published.

## 4. Results

### *4.1 The Role of Business Accelerators in Social Capital Acceleration in Startup Ecosystems*

#### *4.1.1 Opportunities through Networks and Linkages of Business Accelerators*

According to Vellmer (Hub:raum), von Bergmann-Korn (Axel Springer), Limburg (Microsoft), Pranter (ProSiebenSat.1), Lopes (Startupbootcamp), Zumdieck (METRO) and Nagafi (PwC) during the accelerator program participating startups are offered access to the network of highly applicable actors of the ecosystem, including actors and units of the company behind the accelerator, corporate and industry partners, corporate customers, mentors communities and potential investors.

Concerning the corporate network, in the case of the METRO Accelerator "startups have access to above 30 executives of METRO from all functions and countries" (Zumdieck, METRO). Additionally, Pranter (ProSiebenSat.1) states that the "network of ProSiebenSat.1 has many touch points which help the participants" and thus the

accelerator gives participants the opportunity to access relevant stakeholders and decision-makers within the ProSiebenSat.1 Group based on the individual needs of the startups (p7s1accelerator.com). The sales unit of the corporation is particularly interesting for the participants as startups need distribution channels to quickly put their products on the market (Vellmer: Hub:raum). Regarding the network of corporate partners, von Bermann-Korn (Axel Springer) mentioned that “nearly all major German corporates are advertising clients of Springer and hence the accelerator disposes a huge network within the corporate world”. Similarly, Startupbootcamp has many cooperating industry partners that usually reach out to one of the participants, up to three or four times per batch in a way such as “Now you have the new sensors, we have a car at the airport in Lisbon, let’s try them out together!” and therewith get the startups first customers, which is very valuable for the startups regarding further product development and access to the market (Lopes, Startupbootcamp). Additionally, Limburg (Mircrosoft) states that “programs of corporate accelerators can offer another access to the industry network than accelerators can that are not linked to a company”. Referring to the network of corporate customers, Vellmer (Hub:raum) shows that during the program, a network of a “large circle of corporate customers” is available to the startups which give startups the opportunity to access their first customers and therewith gather feedback on their products or services. Furthermore, mentor communities around the business accelerators are available for the startups and push them by their own network of contacts (Lopes, Startupbootcamp) as they commonly have great contact possibilities within the regional ecosystem (Limburg, Microsoft). Finally, participants of accelerator programs have access to the accelerators’ investor network (axelspringerplugandplay.com), including business angels, VCs or other mutual Funds (Vellmer, Hub:raum; Limburg, Microsoft; startupbootcamp.org) which is crucial for startups of the program as their hope is to get their first investment at the end of the program.

Besides the simple opportunity for the participants of the accelerator program to access these networks, business accelerators actively engage in linking participants and actors of the regional ecosystem (Nagafi, PwC). This is achieved by (i) introducing their participants to the actors mentioned above or (ii) introducing external actors from economy, politics and industry through partnerships and events to their participants and simultaneously to the work of the accelerator (Limburg, Microsoft). The role of the business accelerators in introducing external actors to the concept of the business accelerator program particularly increases the awareness of business accelerators within the region as well as taking an exemplary function for other corporations that are interest in an accelerator unit for their own company (Limburg, Microsoft; Pranter, ProSiebenSat.1; Vellmer, Hub:raum).

Firstly, according to Limburg (Microsoft), if one is coming to Berlin and would like to get access to the startup scene, ‘docking points’ are needed. When startups get their first docking point through the accelerator program, they are allowed in the circle of supportive actors more easily and have the opportunity to build up and profit from their network quickly. Therefore, accelerator programs are designed to maximize the resources and potential of the participating startup by getting the startup in touch with actors of the startup ecosystem (startupbootcamp.org). Von Bergmann-Korn (Axel Springer) states that accelerators “are in the middle of a very strong and ramified network where they find connection points to integrate the startups" and for doing so, the accelerator teams know the actors involved around the program so well that they can guide their startups towards the most helpful contacts.

For instance, regarding the linkage between startups and mentor communities, accelerator teams try to connect startups with suitable mentors that fit the startup’ needs and well as with the selection of a mentor. For this purpose, business accelerators contact interesting mentors that then meet the startups and decide whether they suit their expertise, are perhaps personally interested in investing in the startup or even know somebody else from their network who could be helpful for the startups or may be likely to invest as business angel or VC (Pranter, ProSiebenSat.1). According to Zumdieck (METRO), the search of mentors for supportive contacts for the participants within their personal network runs intern and extern of METRO like "You have really interesting solutions, I know somebody who could be interesting for you!". Moreover, when accelerator teams “see that a mentor suits one of their participants they try to push both into a closer relationship" (Pranter, ProSiebenSat.1). Another example is that business accelerators often try to communicate and connect their startups with their close customers that may have a more technical background of the industry and can further help the startups in technical or industry specific topics (Nagafi, PwC).

Concerning the relationship mentioned by Pranter (ProSiebenSat.1), von Bergmann-Korn (Axel Springer) describes the atmosphere between the actors within the accelerator program as very familiar, which often accelerates the access for startups to high-carat people. However, the relationship between the mentor community of the accelerator and the participants ranges from only one short talk during the program, working together very intensively, to mentors and startups that even become friends (Zumdieck, METRO). Von Bergmann-Korn (Axel Springer) justifies these differences in the way that "basically you can see the actors as two people, who talk with each other and as diverse as they are, so are their interactions". According to Lopes (Startupbootcamp) and Vellmer (Hub:raum), the relationship depends heavily on how relevant the startup is for the mentor. Mentors choose teams where the dynamic and expertise fits the best. Further they will work more closely and steadily with those, even after the program, in comparison to other startups within the accelerator, which dynamics and expertise are diverse.

Secondly, accelerators help actors of Berlin's ecosystem, such as corporates, to make links with startups as they are not as well linked within the ecosystem as business accelerators (Limburg, Microsoft). Nagafi (PwC) explained that companies often contact the accelerator with "we are interested in your program, we also have interested customers, we would like to be involved". In this case the PwC's accelerator carries kind of a listing of these companies and when they think a company or specialist would suit one of the startups they make the connection between them, even when these specialists are in places around the world (pwcaccelerator.com). Limburg (Microsoft) describes this kind of openness of business accelerators towards actors of the ecosystem as an 'open door policy'. Everybody who is interested in what the business accelerator does can get an introduction to the work, which according to Limburg (Microsoft) often leads to further partnerships which then reduce trust issues with business accelerators. Moreover, Lopes describes the Startupbootcamp as a 'platform' which is open to all actors of the ecosystem who are likely to support the participants. Similarly, Pranter calls the accelerator of ProSiebenSat.1 a 'combining factor' and von Bergmann-Korn (Axel Springer) thinks about the accelerator as a "platform where people can network, close deals and widen their horizon". As an example that an accelerator also links actors that would not be linked without the business accelerator, Lopes revealed that "apparently it needs a Startupbootcamp that for instance, Daimler and EnBW talk to each other and specifically talk about running a collective project". Furthermore, Lopes (Startupbootcamp) and Vellmer (Hub:raum) state that business accelerators, as platforms which are to a certain degree open to all actors within and beyond the ecosystem that are interested in how an accelerator works, play a huge role in the awareness raising of startup businesses. According to Nagafi (PwC) representatives from the classic industry or consultants often have the wrong understanding of how startups work. As a result, the PwC's accelerator organizes awareness-raising events and workshops, with e.g. their mentors, to sensitize them to treat and work together with startups successfully, because when classic industry meets startups "culturally, two worlds collide". Similarly, Lopes (Startupbootcamp) states that business accelerators are applicable when inviting 'old school' businesses, presenting these classic industry business pitches of the participants which then often leads to a "wow-fantastic effect" and therewith opens their minds and raises their interest in the startup world. Besides the awareness-raising effect, according to Limburg (Microsoft), Pranter (ProSiebenSat.1) and Vellmer (Hub:raum), business accelerators also have an exemplary or 'lighthouse' function in a startup ecosystem. Many business accelerators introduce to the participating startups corporations and other players of the ecosystem that are interested in how an accelerator program works. Thereby the accelerators have an exemplary function for other corporations that have until now not made connections or struggle with working together with startups. According to Vellmer (Hub:raum), by introducing corporations to this subject, business accelerators strengthen the startup-related ecosystem and make startups more approachable for corporations.

To keep the term 'platform', business accelerators offer various forms of events with different purposes that build a platform for interactions among actors involved in the accelerator program as well as for actors outside of the program. Firstly, accelerators host events for actors involved in the program. For instance, two times per program Axel Springer has a Mentor-Day where they invite mentors of their mentor network, with consist of around 250 mentors, who during the event meet startups in fixed sessions. In advance, the accelerator team does a form of 'matching' between mentors and startups where they previously analyze which mentor could best complement each startup as not to waste startups

and mentors' time (von Bergmann-Korn, Axel Springer). A further example is the monthly lunch hosted by Hub:raum in the event kitchen of Telekom, where all actors that are involved in the program can network and exchange their experience. These forms of events offer the possibility for startups to have the possibility to ask: "Hey, we are looking for interns. Do you know someone?" or "We start our new round of financing. Do you know somebody?" (Vellmer, Hub:raum). Additionally, Hub:raum also organizes get-togethers with other accelerators where the teams can present themselves and can get in contact with teams from other accelerators. Secondly, business accelerators offer events that are by invitation only. A classic example is the Demo Day at the end of the accelerator program. Even when this event mainly concentrates on the invitation of investors to increase the chance of startups to gain the vital investment at the end of the program, many accelerators also invite actors of the community "who play the great role of a multiplier within Berlins ecosystem" to promote the program and their participants (Zumdieck, METRO). Similarly, Lopes (Startupbootcamp) estimates that around one-third of the tickets of the Demo Day go to actors within the local ecosystem, including partners, mentors or local media (startupbootcamp.org), that are interested or likely to support the startups. According to Pranter (ProSiebenSat.1), on the demo day startups face a "colorful audience", including investors, corporate executives, service providers, business partners (Vellmer, Hub:Raum) and even though other accelerators to increase the exchange between the several programs of corporations (Limburg, Microsoft). Furthermore, a Demo Day typically ends with a networking event where all actors can network among one another (Pranter, ProSiebenSat.1). Thirdly, some business accelerators host external events and workshops in their event space where startups have the opportunity to present themselves and may then have access to "first-class investors and other multipliers of the ecosystem" (Vellmer, Hub:raum). Fourth, business accelerators provide open events to the ecosystem "to foster the exchange between corporates, between startups and between any people who would like to drop in or are interested" (Lopes, Startupbootcamp). Startupbootcamp, for instance, offers conferences, which are open and are a great opportunity for extern people to get insights in the processes of the Startupbootcamp as well as to make contact with other actors of the ecosystem (Lopes, Startupbootcamp). Further on, METRO organizes Meet-Ups "to open the program and so that everybody who is interest can come around" (Zumdieck, METRO). According to von Bergmann-Korn (Axel Springer), business accelerators "have a responsibility to further develop the ecosystem". In that sense, Axel Springer Plug and Play hosts events like the Founder-Speed-Matching where people who are interested in the founding of a business or have already founded their business, have the opportunity to find companions or to complement their team. The event runs like a Speed-Dating event, but instead of singles, people and startups have the opportunity to talk in a five-minute-format to see as many faces as possible, followed by a network event with drinks and food. Fifth, business accelerators implement events for their participating startups that should particularly enhance the linkages between the team and further help startups to get answers to questions, which may arise, challenges and problems within their process of development. According to Zumdieck (METRO) and Lopes (Startupbootcamp), weekly events are introduced to give participants the opportunity to update the other team about their progress and thereby increase the exchange between the teams. These kinds of events include Monday Morning Stand-Ups where all startups come together and talk about problems, plans and progresses (PPPs) which support the communication and exchange among the teams and according to von Bergmann-Korn (Axel Springer), build up an added value. These kinds of Stand-Up Meetings give startups the opportunity to talk about what happened within the past week and what they have to or would like to do in the next week. According to Limburg (Microsoft), sessions like this improve the exchange between the teams in the way of "I had the same case, I would do that in this way.", "I have a contact for you, who can help you!" or "Have you tried this software for this and that? That could work for you as well!". Pranter (ProSiebenSat.1) calls these sessions All-Hands Meetings, were the startups come together to communicate, exchange and share contacts among them, as they are all at a similar stage. Zumdieck (METRO) and Lopes (Startupbootcamp) further point out that through these social events among the participants within the program, the business accelerators give their participants the impulse for interaction and exchange among themselves, which after a while even gets its own dynamic and becomes independent from the impulses of the business accelerator. This development can be explained mainly by the startups being at similar stages as well as through the spatial circumstances

of the business accelerators' working spaces. According to von Bergmann-Korn (Axel Springer), all teams of the program are nearly at the same stage and typically face the same challenges as they work on related products. Particularly during the intensive and stressful months the teams working alongside each other; linkages between the participants are very important for the morale and psychology of the participants and hence the startups act in the way of "give and take" relating to their support for each other (Lopes, Startupbootcamp). The spatial circumstances of the business accelerator in form of open working spaces increase the sharing of support and knowledge among the teams (Limburg, Microsoft). Von Bergmann-Korn (Axel Springer) expressed it quite suitable by saying that all participants are "under one roof", talk to each other, share their experience and therewith "create enormous synergies that finally accelerate" the progress of the startups' development. Additionally, the Startupbootcamp, for instance, has a chef in their spaces during the program who makes lunch for the teams so that all participants sit together at a table and during lunch, they can get talk about the progress or problems of the teams. Furthermore, while visiting the shared working spaces of several business accelerators in Berlin it was noted that business accelerators provide job boards of portfolio companies as well as of allied startups to help the community to find employees or offer their participants a table tennis table for further interacting that is used by the participants to make Smalltalk. Nonetheless, according Vellmer (Hub:raum) it not always needs events or specific circumstances of the working spaces which bring the participants together. Often the team's get in contact with each other through a coffee break in a shared coffee corner or while smoking a cigarette outside the building and start conversations like "You working on that issue? Maybe we can do something together!" (Vellmer, Hub:raum).

The results presented above show that the business accelerators' network of social ties create opportunities for their participants to get in touch, as well as for further actors of Berlins' startup ecosystem, that, according to Adler and Kwon (2002: 24-27), is one of three source for social capital creation. In the view of bridging social capital creation (Putnam, 2000: 22-23; Adler & Kwom: 2002: 19), business accelerators promote their participants' access to various networks that can mobilize support and resources and thereby facilitate the startups on their path of growth. Moreover, business accelerators actively link startups with actors within their great networks and further link actors outside of the accelerator program to startups and among each other through its open door policy or events that are to a large degree open for the community and foster direct and indirect exchange between all actors. The business accelerators' approach of bridging social capital creation can be confirmed by Bourdieu (1985: 242), Baker (1990: 619), Boxman, De Graaf and Flap (1991: 52), Bourdieu and Wacquant (1992: 119), Burt (1997a: 355) and Knoke (1999: 18), who see the creation of social capital in the process by which actors use their social network of relationships to gain privileged access to other actors' support and resources to pursue their interest and then, under certain circumstances, convert their social connections into economic capital. Additionally, similar to Coleman (1988: 101-109) and Burt (1991: 9), the results mentioned above, that direct and indirect network ties provide the opportunity to access support through other actors within the network as well as to access support that these actors can mobilize through their own network. In the view of bonding social capital creation (Putnam, 2000: 22-23; Adler & Kwom: 2002: 19), the open working spaces of the business accelerator promote the sharing of support and knowledge among the teams, especially as all teams are almost at the same stage of business development, typically face the same challenges and have the common aim of developing their business idea as far as possible to finally gain an investment at the end of the business accelerator program. The business accelerators then give further impulses for interaction among the teams by, for instance, weekly social events that support the communication, exchange and sharing of contacts among the participants. This approach is in line with Portes and Sensenbrenner (1993: 1323), Putnam (1995: 67), Brehm and Rahn (1997: 999), Fukuyama (1997: 4-17), Ingelhart (1997: 188), Adler and Kwon (2002: 21) and Casson and Giusta (2007: 231), who see the source of bonding social capital in the internal linkages of groups, which contain features that give a collective cohesiveness and facilitate the intent of collective actions for more or less common purposes. A certain set of shared norms, trust and values among the members of a group facilitate the cohesion and affect the economic goal seeking behavior of its members. Finally, as business accelerators not only give the opportunity for participants and other actors of the ecosystem to network among one another, but also actively try to link and give impulses for communication, exchange and networking between actors of the ecosystem. It can be stated that from the opportunity point of view,

business accelerators are mainly involved in the acceleration of bridging and bonding social capital instead of simply playing a role in its creation.

*4.1.2 Motivation of Business Accelerators*

In addition to the intent of investors and other people around the accelerator program and from the business accelerator itself to invest and take equity of the startup to finally make money or gain benefits through intensive networking (Nagafi, PwC; von Bergmann-Korn, Axel Springer; Pranter, ProSiebenSat.1), Lopes (Startupbootcamp) describe the major motive of all people involved in the program as “we are all here to promote entrepreneurship and to help entrepreneurs”. According to Vellmer (Hub:raum) a startup ecosystem is based on a ‘give-relation: “you give and you give and you give and you give, expecting at that moment no return, and someday you may get something back”. Lopes (Startupbootcamp) describes that approach as the main motivation of all people working together with the business accelerator, as these actors “like to help people by having in mind that maybe in future they would like to found their own business and can profit from their experience". However, in the case that people becoming successful within the startup ecosystem, according to Vellmer (Hub:raum) "you give something back, that you have received as you founded your business". Von Bergmann-Korn (Axel Springer) support those who argue that many mentors are motivated by "giving something back", as they have already been successful with their own business and now enjoy sharing their experience and skills. Furthermore, Zumdieck (METRO) mentioned the motivation of the foundation of the accelerator unit of METRO that in recent times METRO got great support from the startup scene in Berlin and thus is now motivated “to give something back with their resources".

This motivational approach of actors involved around the business accelerator programs is in line with Putnam (1993a: 172, 182-183) and Portes (1998: 5-7), who see the second source of social capital in the motivation of actors to support each other in the absence of direct returns of their engagement, but in the normative commitment that actors provide a privileged access to the support and resources in the expectation that for their support they may get something back at some time in the future.

*4.1.3 Abilities of Business Accelerators*

Within the accelerator program, people in the role of various kinds (like mentors, extern corporate partner of the business accelerator, intern and extern experts, industry leaders and experienced entrepreneurs) bring knowledge and expertise about foundation-relevant topics (von Bergmann-Korn, Axel Springer; metroaccelerator.com; axelspringerplugandplay.com; startupbootcamp.org; pwcaccelerator.com) such as product development, marketing, sales, design, IT, human resources, legal, finance (Nagafi, PwC; Lopes, Startupbootcamp; Pranter, ProSiebenSat.1) and transfer the knowledge and expertise to the participants in sessions like workshops and trainings. These sessions are held with teams of the participants as well as in one-o-one sessions (Limburg, Microsoft). Zumdieck (METRO) further points out that investors and people with VC experience are also introduced to the program early so that the startups can also learn from their skills. Moreover, Startupbootcamp, for instance, tries to provide mentoring and coaching ‘on demand’ for their startups, depending on the stage of the startup and therewith, specifically enters the needs of their participants (Lopes, Startupbootcamp). Aside from their knowledge, externs bring key corporations’ executives to the program. Furthermore leaders of the corporation behind the accelerator program also provide knowledge to the teams (von Bergman-Korn, Axel Springer; metroaccelerator.com) and usually offer the participants access to the whole value chain of the corporation. For example, in the case of the PwC Accelerator, startups can refer to "strategy consulting, project and change Management, tax consulting, certification, cyber security, audit, financial accounting and a lot more" (Nagafi, PwC) and in participating in the program by ProSiebenSat.1, startups have access to specific knowledge about “E-Commerce, Market-Sales and Ad-Tech” (Pranter, ProSiebenSat.1).

Furthermore, according to Zumdieck (METRO) the knowledge transfer between the business accelerator and the startups is a ‘two-way street’. By working together with highly innovative and young businesses, according to Nagafi (PwC), Pranter (ProSiebenSat.1) and Zumdieck (METRO), it comes to a backward knowledge transfer in the way that actors of the ecosystem like employees of their own corporation are integrated in the accelerator program so that they learn about the “new way of work” (Nagafi, PwC) from the startups and transmit new impulses to the corporation. This gives employees of the corporation the opportunity to work and share their expertise with startups and thus expand their

horizon as well as help the corporation to adapt and change its business model and customer service in future (Nagafi, PwC; Pranter, ProSiebenSat.1). Therewith, according to Zumdieck (METRO), the accelerator program gives the "interactions between startups and the corporation a structure." Furthermore, by working together with startups, business accelerators and partners get access to innovations (Zumdieck, METRO; Limburg, Microsoft) as startups are often more innovative and have better technology than corporations. A reason for this is that startups are closer to the market and customers as well as being faster than corporations in the process of recognition and response to feedback on their products (Vellmer, Hub:raum). Additionally, business accelerators have the opportunity to take startups with innovative products and services into their program that fit into the corporations' business model which can finally be offered to customers of their own corporation (Nagafi, PwC). According to Zumdieck (METRO), this could happen when "the participating startups develop a product or solution, our customers get the solution from us, which helps them to optimize the operation of their business. And we give the startups access to the market. Hence, it is a great deal for all actors involved". Moreover, by working together with startups, business accelerators have the opportunities to build up startups that can be partners of the corporation in future and help the corporation to discover new business areas (Vellmer, Hub:raum), recruit new talents (Pranter, ProSiebenSat.1), introduce startups to their own products and thus generate new future customers (Limburg, Microsoft) or invest in the startups in the early stage of their lifecycle, where the ratings of the startups jump to their peak points. Finally, many corporations with accelerator units also harvest positive PR as innovative players in the ecosystem (Pranter, ProSiebenSat.1).

According to Adler and Kwon (2002: 26), besides the opportunity and motivation as sources of social capital, the third source to activate social capital lies in the ability to access competencies and resources that the network provides. Thus, in the absence of the correct expertise or resources, an actor's ties to members of the network are relatively useless. Additionally, the extent of social capital that is provided within a network depends on the amount and quality of resources that are available to the actors and can be mobilized through social relations (Gabbay & Leenders, 1999: 2; Leana & Van Buren, 1999: 543; Lin, 1999: 467-468). As presented above, business accelerators offer their participants a wide network of expertise and resources through the access to actors of the ecosystem, including internal and external experts of the corporation, industry leaders and experienced entrepreneurs that dispose highly qualitative knowledge and expertise about foundation-relevant topics, which is in line with previous findings of Miller and Bound (2011: 10), Caley and Kula (2013: 14) or Cohen (2013: 23). Moreover, the corporation behind the business accelerator unit usually offers their participants access to the whole value chain of the corporation. Additionally, the business accelerators network of investors and people with VC experience are usually introduced to the program early so that the startups can learn from their skill as well as become familiar with investors, which can increase the likelihood of receiving investments. The backward knowledge transfer, mostly between startups and business accelerators, including the access to innovation or the transmission of new impulses to the corporation, secure that the expertise of the business accelerator which is shared with the participating startups and therewith, with further actors of the ecosystem as well, will grow sustainably so that the degree of the ability of business accelerators will be maintained and developed in future.

### *4.2 The Role of Business Accelerators in Social Capital Acceleration beyond the Program*

The interviews show that the overall intent of business accelerators is to stay closely in contact with the graduated startups on an ongoing basis. To accomplish this intent, according to Nagafi (PwC), von Bergmann-Korn (Axel Springer), Lopes (Startupbootcamp) and Limburg (Microsoft), the introduction of an alumni network is a suitable approach to "help the alumni connect, engage and accelerate together" (startupbootcamp.org). According to the Startupbootcamp program, Lopes states that "It is not a three-month-thing and that's it. We are definitely interested in the participating startups becoming successful and that they get their investment". For instance, Axel Springer Plug and Play stated that the program "…is for life. Our support doesn't end after the 100 days. Our team, our alumni network and everyone we know is here to support you throughout your entrepreneurial journey" (axelspringerplugandplay.com). Startups will continue to leverage access to resources, networks, potential customers and partners and various opportunities to grow (microsoftaccelerator.com). Von Bergmann-Korn (Axel Springer) added that the alumni network generates synergies, as startups get the opportunity

to further participate in the direct network of the business accelerator, by sharing experience, giving advice and helping each other to offer jobs or look for jobs. Moreover, through an alumni network, accelerators also share contacts and free tickets for events and in return an alumnus may becomes a mentor in the next batches. Regarding the value of alumni networks, von Bergmann-Korn (Axel Springer) mentioned that "the greater the portfolio of the alumni network, the bigger the value of this network as long as it is well maintained". Similarly, Limburg (Microsoft) expressed that "it is not the case, that after the program we think goodbye. We actively maintain the contact with the startups after the program". Vellmer supports this point of view with "once Hub:raum, always Hub:raum. That means each startup that has participated in one of our programs can make contact and ask us for further introductions to interesting actors in the ecosystem or simply for help". Regarding the point of further introductions, Nagafi (PwC) mentioned that for instance, a startup that has participated can become interesting for a customer of the corporation behind a business accelerator and then the business accelerator will introduce the startup to the customer. Therefore, independent of whether the startups remain in Berlin or geographically relocate, planed or unplanned meetings, frequent calls with the startups, regional facebook groups or email lists serve as instruments to keep the contact between business accelerators and startups (Pranter, ProSiebenSat.1; Vellmer, Hub:raum; Zumdieck, METRO). Additionally, according to startupbootcamp.org "these introductions lead to life-long connections and do wonders not for only the startups, but for the entire ecosystem". The purpose of most business accelerators is to further maintain the contact and support the startup by the establishment of an alumni network and therewith taking care of the amount of social capital, is in line with Adler and Kwon (2002: 22) and Westlund and Bolton (2003: 82), who state that social capital needs maintenance in the sense that social bonds have to be cared for and renewed or they lose efficacy, as social capital grows and develops with its use. Besides the reason that business accelerators and startups continue to keep in contact for mutual support, business accelerators stay in touch with their participants and even have to stay in contact with the startups as a legal necessity in the case that the business accelerator itself invests in its participants and becomes a shareholder of the startups. Therewith they are automatically involved in major decisions of the business, will further work together with the startups and are highly interest in the development of the startups (Nagafi, PwC; Pranter, ProSiebenSat.1; von Bergmann-Korn, Axel Springer; Zumdieck, METRO).

However, even when Limburg (Microsoft) states that after the program all startups somehow stay in Berlin because they have gained many contacts within the duration of the program and have built up their own network, there are prevailing disagreements between the interviewed business accelerators about whether startups, which have participated will remain in Berlin. According to Nagafi (PwC), startups that are very young when participating in the accelerator programs will benefit from their new social network through the accelerator and then it makes definitely sense to stay in Berlin to maintain the contacts and the network. Similarly, Vellmer (Hub:raum) states that around 90% of the startups stay in Berlin after finishing the program and by relocating to Berlin expand Berlins' startup ecosystem through the program. Contrary to this, von Bergmann-Korn (Axel Springer) estimates that around 50% of the startups, which have participated in the program stay in Berlin and it is mainly the successful ones that tend to interact for a relatively long time and stay spatially close to the team of the accelerator. Even more contradictory to this, Zumdieck (METRO) estimates that only around two of eleven startups per batch stay in Berlin after the program. However, according to Nagafi (PwC), startups that have already passed the seed stage in their home city or home country before they have participated in the program, are likely to go back after the program, as they are already linked to the ecosystem in their home country and have their 'foot print' there. This is supported by Lopes (Startupbootcamp) who thinks that after the program about 70% of the participating teams go back to their home country as they were already present in the home market and had customers in the home market before they came to Berlin, even when it is quite different between the batches. Similarly, Pranter (ProSiebenSat.1) argued that startups of the accelerator program of ProSiebenSat.1 are not in the very early stage and thus usually do not move to Berlin after the program. Nevertheless, about two-thirds of the participants of ProSiebenSat.1' accelerator programs are from Berlin and therefore strengthen the ecosystem on the spot. Even if the explanation given by Nagafi (PwC) that young startups tend to stay in Berlin to keep contacts and networks, generated by the business accelerator program, and startups, which have already passed the seed stage and are linked and have their 'foot print' in their home market tend to leave Berlin after the program,

it seems clear, the impact on the aggregate startup ecosystems remain unclear. Startups that leave Berlin after the program may undermine the increase of economic capital within Berlin's startup ecosystem or may play an important linking role within the created linkages of the business accelerator between the different actors of the ecosystem and thereby can cause structural gaps within Berlin's startup ecosystem's social network.

## 5. Discussion

### *5.1 Contributions*

The conceptual background of this thesis mentioned that the opportunity-motivation-ability framework must be present for social capital to be activated as people without network ties, without the motivation to contribute, or without the requisite ability would not be a source of social capital and that the lack of any of these three factors would undermine social capital generation.

Beginning with the network ties, in the perspective of bridging social capital acceleration, the results show that by their program, business accelerators actively link and guide their participants to a large circle of supportive and highly applicable actors within its strong network. Moreover, they even further promote relationships, if the business accelerator sees that both startups and other supportive actors from the ecosystem profit from the relation. Additionally, through the business accelerators' open door policy aimed at the community of Berlins startup ecosystem, business accelerators link actors from outside of the accelerator program to their participants as well as among each other that often would not be linked without the business accelerator and hence, foster direct and indirect exchange between all actors that are involved in Berlin's ecosystem. According to Burt (1992: 4-48) and Adler and Kwon (2002: 29), bridging groups that otherwise would be disconnected allow individual actors as well as the broader aggregate to speed up their efforts. Therewith business accelerators act as a platform where people have the opportunity to use the business accelerators' social network of relationships to gain beneficial information about e.g. job opportunities or innovate technology, build up their own network, get privileged access to other actors' support and resources or to close deals to pursue their interest.

From the perspective of bonding social capital acceleration, business accelerators internally link their participating teams among themselves through social events in a weekly format and shared working spaces, where startups come together and talk about problems, plans and progress which increase collective cohesiveness and facilitating the opportunity for sharing support and knowledge between the teams. This cohort-based nature of business accelerator programs, according to Miller and Bound (2011: 10, 28), Carmel and Richman (2013: 3) and Cohen (2013: 22) naturally leads to close ties and relationships between the participating startups that result in supporting and motivating each other during the duration of the program. Portes (1998: 8) and Sandefur and Laumann (1998: 491-492) describe the situation where people that are in a common situation, learn to identify with each other and support each other's initiatives as social solidarity which, according to Bourdieu (1985: 249), builds the basis for the profits which accrue through the affiliation with a collective. Moreover, according to Adler and Kwon (2002: 30) and Putnam (1993a: 89-90), internal solidarity of members in one association may spill over through members' involvement with other associations and in the broader aggregate end in a higher level of generalized trust which would mean that the increasing solidarity would also spillover to other actors of Berlin's startup ecosystem. Beyond the program, business accelerators typically have an alumni network, which serves to further share information and indications between its members and help the business accelerator to make further introductions between their graduates and actors of Berlins' startup ecosystem. Through the alumni network, business accelerators care and renew the ties that already exist within the ecosystem and create new ties, which increase the possibility that social capital grows and further develops beyond the duration of the program.

This linking role of Berlin's business accelerators is heavily accompanied by the peoples' fundamental motivational approach around the business accelerators to help startups by connecting and integrating them into Berlin's ecosystem in the absence of direct returns of their engagement, which fulfill the second source for social capital activation. Finally, as a third source for social capital acceleration, Berlin's business accelerators dispose the requisite ability to provide, first, their startups access to a strong supportive network of expertise about foundation-relevant topics and resources, which is highly important for startups as they may dispose technological innovation but mostly lack in experience, expertise and financial resources (Walker, Kogut & Shane, 1997: 109). Secondly, business accelerators offer actors in Berlin's startup ecosystem, including mentors,

regional enterprises, corporate partners of the business accelerator investors, industry leaders or experienced entrepreneurs access to highly innovative startups which constitute among others things, the source of innovation, as an attractive investment opportunity or corporate partner in the future. Through the selection process of the business accelerators, the participating teams as well as its graduates become more interesting for actors that are likely to invest or to cooperate with startups and hence business accelerators are increasingly seen as a quality label for startups. This is in line with the view of Miller and Bound (2011: 12, 27), Barrehag et al. (2012: 44-45), Kim and Wagman (2014: 521) and Fehder and Hochberg (2015: 7) on business accelerators as a pipeline of attractive investable seed-stage startups, proved by the application process of the business accelerator. Finally, the contribution supports Napier and Hansen's (2011: 13-15) and Zoller's (2010: 103) research, which already associates business accelerators with being a dealmaker, because of their strong motivation and abilities to connect startups with the right people and resources based on their professional background, experience and local embeddedness.

Based on the results, the thesis allows four propositions that emphasizes the role of business accelerators in the accelerating process of social capital creation within Berlin's startup ecosystem to be formulated:

> **Proposition 1:** Business accelerators enable bridging social capital acceleration within Berlin's startup ecosystem by promoting a platform where actors of the regional ecosystem have the opportunity to network and by the business accelerators' role in externally linking Berlin's startup ecosystem which then allow actors in Berlin's startup ecosystem to gain benefits from their new social relations.
>
> **Proposition 2:** Business accelerators enable bonding social capital acceleration between the business accelerator participants within the program, by providing shared working spaces in Berlin, where the participants work side by side which in a self-perpetuating way leads to synergy effects and by the business accelerators' role in internally linking their participating teams through weekly social events to enhance the sharing of support and knowledge.
>
> **Proposition 3:** Business accelerators enable social capital acceleration within Berlin's startup ecosystem through the basic motivational approach to promote entrepreneurship within the regional ecosystem and by the business accelerators' role in helping actors to link and integrate into Berlin's startup ecosystem in the absence of direct returns of their engagement, but in the normative commitment to expect a response somewhere in future.
>
> **Proposition 4:** Business accelerators enable social capital acceleration within Berlin's startup ecosystem with the ability gained through their professional background, experience and regional local embeddedness to provide actors in Berlin's startup ecosystem a wide and highly qualified network of competencies, expertise and resources and by the business accelerators' role as a dealmaker and quality label to connect startups to the right people and resources and therewith, to mobilize support and resources through business accelerators' social network.

The propositions present that the opportunity-motivation-ability framework for social capital creation is fulfilled, which demonstrates the business accelerators' active and accelerating role in the creation of social capital, as already indicated by Zoller (2010: 1-2), Feldman and Zoller (2012: 24-30), Carmel and Richmal (2013: 3) and Fehder and Hochberg (2015: 7), which is then likely to contribute to the process of new venture creation (Baron & Markman, 2003: 41; Davidsson & Honig, 2003: 301; Liao & Welsch, 2005: 345; DeCarolis & Saparito, 2006: 41) and according to Walker, Kogut, and Shan (1997: 109), fosters the formation of startups and therewith the success of the entrepreneurial region.

Beyond the program, the results of analyzing the interviews and websites of the interviewed business accelerators show that the business accelerators are interested in their graduates and keep contact through an alumni network, independent of whether the graduates remain in Berlin or geographically relocate after the program. This gives the graduates the opportunity to further participate in the social network of the business accelerators, including opportunities to access further introductions to interesting actors in the ecosystem, which care for and renew the social bonds between the startups and actors in Berlin's

ecosystem. This can be supported by the findings of Barrehag et al. (2012: 44) and Radojevich-Kelley and Hoffman (2012: 65), that social network relations increase the likelihood of participants in the business accelerators to receive further help after the program concludes and the ability to receive subsequent rounds of funding. According to Winston Smith, Hannigan and Gasiorowski (2013: 1) accelerator-backed startups are more likely to receive follow-up financing sooner compared to startups that have not participated in business accelerator programs. Nonetheless, even if Miller and Bound (2011: 5) and Cohen (2013: 22) have shown that business accelerators attract international startups and that those who then participate often relocate to the same region as the business accelerator, which then expands the local startup ecosystem, the results of the thesis display that there are disagreements about the number of participating startups who remain in Berlin after the program, especially in the case when startups have already passed the seed stage in their home country and are so linked to the ecosystem in their home country. This could have an impact on the social capital of Berlin's startup ecosystem since when the graduates leave Berlin they may cause structural gaps in the social network which could undermine the accelerating effect of social capital creation within Berlin's startup ecosystem beyond the program. Similarly, Napier and Hansen (2011: 12-13) regard the strength and quality of a startup ecosystem depending on entrepreneurs who have succeeded with their startups and thereafter stay involved, in the form of reinvesting their profit and experience back into the local ecosystem.

### *5.2 Implications*

Besides the accelerating impact of business accelerators on the process of social capital creation, the results of the business accelerators' role within Berlin's ecosystem displays that by linking actors in Berlin's startup ecosystem, business accelerators also have impacts on the cultural, financial and human capital of the Eight Capital Model of Entrepreneurial Ecosystems, presented by Juling, Freiling and Harima (2016):

**Cultural Capital:** In their role of social capital acceleration, business accelerators have an impact on the entrepreneurially related perception and intention of Berlin's startup ecosystem through their awareness raising and exemplary function. The degree of business accelerator openness towards the regional ecosystem, including open events for networking, helps business accelerators strengthen the startup related ecosystem by making startups and their philosophy and working method more tangible for the traditional economy, industry and policy in Berlin. Furthermore, business accelerators demonstrate the importance of the programs for corporations that are willing to work together with startups. Thus, business accelerators take a 'lighthouse' function in a startup ecosystem for other corporations that have so far not been linked to startups and may be orientated with the model of business accelerator units in future.

**Financial Capital:** Business accelerators in their role as social capital accelerators, have an impact on the availability and accessibility of financial resources within Berlin's startup ecosystem. Firstly, business accelerators often provide their participants with a small amount of seed capital during the program, which mostly serves as a way of the team being able to pay their living costs and concentrate on their business idea without private financial concerns, which is in line with the results of Bluestein and Barrett (2010: n.p.) and Miller and Bound (2011: 9). Secondly, business accelerators are applicable as quality labels for attractive investment opportunities through their process of selecting their participants and their strong social network. Hence, the attentions of investors, including business angel, VCs or mentors inside and outside of Berlin's startup ecosystem are drawn to the participating startups as well as to further actors in Berlin's startup ecosystem that are linked to the business accelerator. This is in line with The Global Startup Ecosystem Report which mentions that early stage investments in particular, are based on the social networks of trusted human relationships (Compas.co, 2015: 17). Thirdly, and similar to the findings of Cohen (2013: 22), business accelerators as institutions or individual actors within the program sometimes provide additional financing options and invest in the participants and thus become a shareholder in the startups. All three options increase the total amount of investments and increase the financial capital of Berlin's startup ecosystem. This is confirmed by Fehder and Hochbergs (2015: 31) findings that regional ecosystems in which business accelerators are established, subsequently exhibit more entrepreneurial financing activity, and that this activity appears not to be restricted to accelerated startups alone, but also spills over into non-accelerated companies, as attracting investors also increases the exposure of non-accelerator companies in the region.

**Human Capital:** Recent research already suggests that network ties help firms acquire new skills and knowledge (Loury, 1992: 100; Powell & Smith-

Doerr, 1994: 34-35; Podolny & Page, 1998: 62) and therewith positively influence the creation of human capital (Coleman, 1988: 109; Becker, 1996: 4; Nahapiet & Ghoshal, 1998: 242). Moreover, in line with the research of Barrehag et al. (2012: 44) and Radojevich-Kelley and Hoffman, (2012: 66), who already state that business accelerators support the startups' human capital, the results of the thesis show that through the business accelerators' role in social capital acceleration, business accelerators increase the knowledge and skills of individuals as well as those of Berlin's entire startup ecosystem. On the one hand, the business accelerators' strong and wide social network allows their participants to access highly qualitative knowledge and expertise to found relevant topics through a diverse set of actors involved in the business accelerator program. On the other hand, actors in Berlin's startup ecosystem who have the opportunity of working together with highly innovative and dynamic startups, have access to kind of a backward knowledge transfer, including new innovative impulses and learning about the characteristics and the new way in which startups work.

The business accelerators in particular, impact on the financial and human capital of Berlin's startup ecosystem, which can be related to the findings of Senor and Singer (2009: 203-204), Zoller (2010: 22-37, 115-125), Feldman and Zoller (2012: 24-35), Mason and Brown (2013:11) and Winston Smith, Hannigan and Gasiorowski (2013: 1). They found out that business accelerators give their participants the opportunity to build up their financial and human capital and thereby facilitate new firm creation and build a following, are likely to contribute to the overall strength and success of the regional ecosystem.

The results of the interviews further point out that startups are often more innovative and have better technology as corporations, because startups are closer to the market and customers are more quickly involved in the process of recognition and response to feedback on their products and services than corporations, which are usually more traditional and sluggish in their approach. In line with the findings of Gaida (2011: 21), Miller and Bound (2011: 12, 27) and Kawohl, Rack and Strniste (2015: 3), the business accelerators that were interviewed responded by saying that corporations can benefit greatly by integrating a business accelerator unit, which gives corporations the opportunity to work and share their expertise with startups and as a results, get access to innovations, build up startups that can be potential partners of the corporation, help the corporation to discover new business areas and widen their horizon or help to adapt and change the corporations' business model and customer services. Moreover, corporations can generate positive PR for the corporation as an innovative player in the ecosystem, which additionally increases the attractiveness of the corporation as an innovative employer. This knowledge can also be of special interest for local authorities, which aim at fostering the emergence of a thriving startup ecosystem in their region.

### *5.3 Limitations*

Before drawing the conclusion, some important limitations of this thesis have to be addressed. Firstly, even if Berlin counts as one of the world's major startup ecosystems, because of the newness of business accelerators, the heterogeneity between business accelerator programs and their similarities to incubators, the density of the classic type of business accelerator programs is still limited and the search for suitable interviewees within Berlin's startup ecosystem was a great challenge. Eight interviews were guaranteed, which were conducted face-to-face, on the telephone and over Skype. However, as the audio quality of the recording of the final Skype interview with the Climate-KIC Accelerator was for unexplainable reasons distorted, it was not possible to transcribe the interview and thus the interview could not be utilized within the thesis' analysis. Furthermore, by the strict narrow sense of definition according to the state of research presented in the conceptual background, only four of the interviews were conducted with classic business accelerators. PwC's Accelerator, Startupbootcamp and Hub:raum are rather accelerator programs in the broader sense. PwC's Accelerator is more an initiative that detects and assists rapidly growing technology companies in going global, rather than a program, which concentrates on the integration of startups in Berlin's ecosystem or Germany's market. Startupbootcamp is more a global provider of industry-focused startup accelerators rather than a business accelerator program, backed by a classic corporation. Hub:raum conducted classic business accelerator programs in Berlin in the past, but today rather concentrates on incubator programs in Berlin, but still organizes business accelerator programs in Krakow. Nonetheless, the coding process of the interviews of the accelerators in the broader sense present, a high degree of congruency with the interviews of the classic business accelerators which minimize any reservations

about the results and interpretations of these interviews.

As justified in the methodology, in part of the thesis Berlin's startup ecosystem with an exploratory, inductive, qualitative and case study approach was analyzed. Thus, the result of the thesis is, if anything, generalizable for Berlin's Business accelerators and not for startup ecosystems on a national or even international level. Moreover, due to the qualitative nature of the thesis, the findings are the result of the authors' own interpretations of codes. Nevertheless, it was tried to minimize personal bias, and interpreted the data in an objective manner by basing the analysis and coding scheme on the conceptual framework of the thesis and to stay as close to the words of the interviewees as possible during the phases of coding and analysis.

## 6 Conclusion and Future Research

The results and discussion of the thesis indicates that Berlin's business accelerators, on the one hand, externally link the regional startup ecosystem by promoting a platform, where actors have the opportunity to network and thereafter gain benefits from their new social relations. On the other hand, the business accelerators internally link their participating teams among themselves by their supportive cohort-based nature of their program. This role of business accelerators is accompanied by the business accelerators' strong motivation and ability to link the regional startup ecosystem. The peoples' fundamental motivational approach involved in the business accelerator program is to foster entrepreneurship and to help startups and other actors of the regional ecosystem to link and integrate into Berlin's ecosystem, in the absence of direct returns for their engagement. Furthermore, Berlin's business accelerators dispose the ability to connect actors of the ecosystem through their highly qualified network of competencies, expertise and resources, their professional background and experience as well as their regional local embeddedness. Hence, as business accelerators fulfill the opportunity-motivation-ability framework that is needed for creating and increasing social capital, business accelerators take an accelerating role of social capital creation in Berlin's startup ecosystem and allow individual actors as well as the broader aggregate of Berlin's startup ecosystem to speed up their efforts. Nonetheless, the thesis presents disagreements among Berlin business accelerators about the amount of remaining startups that have participated in Berlin's startup ecosystem beyond the program. As a consequence, a future research topic could be to investigate how sustainable the social capital which has been accelerated by business accelerators is, as the leaving process of graduates beyond the program may cause structural gaps in the social network, created by the business accelerator, which thereafter could be a sign for a decelerating effect of social capital creation in Berlin's startup ecosystem.

Besides, the accelerating role of Berlin's business accelerators on the process of social capital creation, the thesis shows that by linking actors in Berlin's startup ecosystem, business accelerators also have impacts on the cultural, financial and human capital of Berlin's startup ecosystem. Through the business accelerators open door policy towards the regional ecosystem, business accelerators have an impact on the entrepreneurially related perception and intention on Berlin's startup ecosystem and make the work and philosophy of startups more tangible for actors in the ecosystem, that have so far not encountered the world of startups. Thus, business accelerators take an awareness raising function as well as exemplary function of how corporations can work together with startups within Berlin's startup ecosystem. Additionally, business accelerators increase the availability and accessibility of financial capital in Berlin's startup ecosystem, by typically providing their participants a small amount of seed capital, attracting the attention of investors to Berlin's startup ecosystem by their characteristic as a quality label for promising investment opportunities or even provide additional financing options to their participants as institutions themselves in return for equity. Finally, through their program, business accelerators increase the knowledge and skills of individuals as well as those of Berlins entire startup ecosystem through their strong and wide social network that allows actors in the regional ecosystem to access highly qualitative knowledge and expertise according their different needs. Even if the thesis gives first indications of the role of business accelerators in influencing the cultural, financial and human capital, future research is needed to support these first assumptions or even expand the business accelerators' impact on further capitals of a startup ecosystem.

Concluding, a striking feature of the business accelerators and a simultaneously highly interesting topic for future research, comes up within the process of data analysis of the thesis and highlights the incentive and motivation of corporations for the establishment of a business accelerator unit. The thesis has already pointed out

to the interest of gaining access to innovations, building up potential partners of the corporation, discovering new business areas, adapt and change the corporations' business model and customer services or generating positive PR for the corporation that among others things, increases the attractiveness of the corporation as an innovative employer. Especially in view of ongoing digitalization, speed of the market and therewith the need for corporations to quickly adapt their business model and products business, at first glance business accelerator units seem to be a great path for corporations to be able to keep up with the times.

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