

# It's a match! – Building relationships between corporates and start-ups throughout Corporate Accelerators

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**Abstract.** A Corporate Accelerator (CA) is increasingly being considered as a bridge between established companies and start-ups. However, there is still little known about objectives and benefits of establishing CAs. Therefore, the aim of this study is to investigate both objectives and benefits of organizations implementing CAs. Moreover, we aim to shed further light on how those CAs are implemented in organizational structure and executed in corporate practice. We deliver findings based on data from five different cases in the German market. Using a multi case study approach, we find that CAs serve as so-called resource matchmakers between established companies and start-ups. Additionally, we propose that CAs trigger the organizational learning process. Therefore, we contribute to a better understanding of CAs, because prior research on this topic is limited. We discuss these findings in the light of prior research and with regard to management practice. Based on the limitations of our study, we provide avenues for further research.

**Keywords.** corporate accelerator · start-up collaboration · corporate entrepreneurship · organizational learning

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## 1. Introduction

*“It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change.” – Charles Darwin*

In spite of being more than 150 years old, Charles Darwin's quote describes the core statement of evolutionary theory in biology, this fact also applies to today's corporate world (O'Reilly, Harreld & Tushman, 2009). Companies often fail because their environment changes and they do not find appropriate answers to these changes (Schumpeter, 1942).

In this context, discontinuous change is a particular challenge for existing industries (Hill & Rothaermel, 2003). Emerging technologies offer potential competitors the opportunity to enter and redesign whole markets (Bergek, Berggren, Magnusson & Hobday, 2013; Tushman & Anderson, 1986). They are able to challenge the knowledge base of established market participants by radical or disruptive innovations and have a destructive effect on their competence (Christensen, 1997; Tushman & Anderson, 1986). As a consequence, established companies are often forced out of the market by new players through a process of creative destruction (Bergek et al., 2013; Schumpeter, 1942). Established companies cannot maintain their competitive advantage in the long-term (Wiggins & Ruefli, 2005), whereby the aspect of innovation generation is becoming increasingly important (Wadhwa, Phelps & Kotha, 2016). As a consequence, established market participants must be able to adapt their innovation management to the circumstances described in order to maintain their competitiveness (Chesbrough, 2004). In relation to this, the opening of the innovation process enables participation in change (Cassiman & Valentini, 2016; Chesbrough, 2004).

The Open Innovation (OI) approach is an established approach in science and practice according to Chesbrough (2017). Suppliers, customers, research institutions and even organizations from outside the industry can be involved in the innovation process of a company (Huizingh, 2011). In addition to these actors, start-ups also offer an important source of knowledge for innovative ideas (Dushnitsky & Lenox, 2005; Kim & Steensma, 2017). Start-ups are not only characterized by their wealth of ideas, but also by organizational agility, willingness to take risks and strong growth ambitions making them a complementary partner in a rapidly changing world (Kohler, 2016; Weiblen & Chesbrough, 2015).

There is a large number of forms that allow collaboration with start-ups. For example, strategic alliances (Neyens, Faems & Sels, 2010), joint ventures (Weiblen & Chesbrough, 2015) and equity investments (Wadhwa & Kotha, 2006) offer opportunities to gain access to innovative start-ups. Especially the financial participation of Corporate Venture Capital (CVC) units represents an important form of collaboration for many companies (Napp & Minshall, 2011). Companies take a stake in independent start-up companies through CVC units in order to achieve financial and strategic goals (Dushnitsky & Lenox, 2005; Weiblen & Chesbrough, 2015).

While established models such as CVC are widely used, newer approaches seem to enable more intensive cooperation between start-ups and established companies (Weiblen & Chesbrough, 2015). The establishment of CAs provides companies a new means of interaction with start-ups as part of their OI strategy. In contrast to CVC units, CAs do not focus on financial participation, but rather on active exertion of influence on the development of start-ups in the early phase (Kohler, 2016). Start-ups are supported by the provision of various services within the framework of temporary programs implemented in cohorts (Cohen & Hochberg, 2014). These services can include, for example, the provision of business coaching, the organization of network events or support in raising capital (Cohen, 2013a; Pauwels, Clarysse, Wright & Van Hove, 2016; Radojevich-Kelley & Hoffman, 2012). CAs are designed to

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combine the resource strength of established companies with the innovativeness and entrepreneurial spirit of young companies and thus offer added value for both parties (Kohler, 2016).

The importance of CAs have increased enormously in the last few years. Meanwhile these initiatives are established in companies all over the world and in all industry sectors in order to cooperate with start-ups (Kohler, 2016). The increasing relevance of this form of collaboration can also be observed on the German market. Companies such as Axel Springer, Bayer and ProSiebenSat.1 are already realizing CAs to interact with innovative young companies (Kohler, 2016; Richter, Jackson & Schildhauer, 2018). While an increasing relevance of these programs can be seen in practice, they are still largely untapped in literature. To date, there are only a few scientific articles that deal comprehensively with the concept of CAs (Jackson & Richter, 2017; Kohler, 2016; Kupp, Marval & Borchers, 2017; Pauwels et al., 2016). To this day, there is little understanding of the specific goals the established companies are pursuing by these initiatives. The concept of the CA is still in an early stage, whereas new programs are constantly established in practice. According to Kohler (2016), the need for a more in-depth review of the programs is justified in this context. In literature there is little understanding not only of the underlying intentions, but also of the organizational and content structure in the environment of established companies. Furthermore, it has already been shown that established companies and start-ups are complementary partners in terms of their resource base. However, there is little understanding of the extent to which established companies can realize learning effects for their own organization by accessing the resource base (Kohler, 2016).

The aim of this study is to improve the understanding of the concept of a CA. For this purpose, the objectives of established companies in the context of a CAs are analyzed. In addition, it will be shown how CAs are established in terms of organizational structure and content implementation. Furthermore, the work presents the added value for established companies in detail. The focus here is on the aspect of organizational learning through interaction with the participants. Hence the following questions arise:

1. *What are the objectives of CAs regarding the cooperation with start-ups?*
2. *How are CAs implemented in corporate practice with regard to organizational structure and program content?*
3. *What is the added value of setting up a CA for the organizational learning activities of the established companies?*

## **2. Opening up innovation management through start-up collaborations**

The literature contains a large number of aspects that shed light on the current challenges facing established companies. Companies are therefore exposed to increasing market dynamics due to increasing global competition, rising R&D costs and declining product life cycles (Saebi & Foss, 2015). In addition, technological trends such as artificial intelligence and big data have a fundamental impact on existing businesses. In this context, technological change favors the entry of new market participants by the disruption of traditional businesses (Manso, 2017).

According to Christensen (1997), the emergence of disruptive innovations in particular represents an important aspect of the failure of established companies. These are innovations that initially cannot deliver the required performance promise for customers in a mainstream market (Christensen & Overdorf, 2000). They rather offer another value proposition that mostly addresses the needs of customers in niche markets (Danneels, 2004). Established companies continue to focus their business on existing markets and customers (Christensen, 1997). The needs of the largest and most profitable customers are included in the development of the business, while the offering is improved along the traditional performance dimensions (Henderson, 2006). Thus, the performance of the offer often exceeds the needs of the average customer over time (Christensen, 1997).

However, the disruptive innovations of the new market participants are also gradually improved, whereby over time they will also be able to meet the needs of established customers. In the long term, they will be able to better understand the needs of mainstream customers than established companies. Consequently, ignored disruptive developments pose a critical challenge for established companies (Chatterji, Findley, Jensen, Meyer & Nielson, 2016). These innovations enable new market participants to redesign existing markets and thus further dynamise them.

The aspects mentioned above describe various challenges for established companies, all can be explained by the inability of established companies to respond to an underlying change (Chatterji et al., 2016). One of the core competencies of established companies is to realize economies of scale and scope, apply management systems and ultimately increase efficiency in existing businesses (Jackson & Richter, 2017). With regard to change, however, employees perceive change as a threat to existing core competencies and try to avoid actions outside existing patterns (O'Connor, 1998; Wolfe, Wright & Smart, 2006). In the context of fundamental change, core competencies should therefore be seen more as so-called core rigidities (Leonard-Barton, 1992). In addition to the employees' fear of change or failure, they express themselves through conservative decision-making and a restrictive organizational culture with regard to new innovations in the company (Sandberg & Aarikka-Stenroos, 2014).

For these reasons, established companies are often unable to maintain their competitive advantage in the long-term and staying innovative is becoming even more important (Wadhwa et al., 2016; Wiggins & Ruefli, 2005). Established market participants must be able to adapt their innovation management to the circumstances described in order to maintain their competitiveness (Chesbrough, 2004). Whereas in the past a closed innovation process was seen as a success factor by internal R&D departments, today the opening of the innovation process represents a possibility for participation in change (Cassiman & Valentini, 2016; Chesbrough, 2004).

### 2.1. Possible solutions through Open Innovation

Over the last few years, OI has become one of the most important topics in the field of innovation management (Huizingh, 2011). The basic principle behind the OI approach is to open up innovation management in companies. At the heart of this model is the realization that competitive advantages often arise from innovations that are not generated within the company itself. The focus lies rather on using the innovations of others and thereby incorporating external perspectives into one's own development (Chesbrough & Crowther, 2006). In addition, the company's own innovations should be made freely accessible to others in order to enable their commercialization by external actors (Chesbrough, Vanhaverbeke & West, 2006). Furthermore, the involvement of new parties can promote the joint development of novel solutions (Enkel, Gassmann & Chesbrough, 2009).

The Chesbrough approach (2017) is an established scientific approach to overcome the challenges mentioned in advance. The concept has also gained increasing popularity in business practice. One reason for this is that the concept reflects social and economic changes in fundamental work patterns (Dahlander & Gann, 2010). Thus, more and more professionals today prefer a portfolio career as a single employer for their entire working life (Platman, 2004). In addition, globalization allows markets to expand, which in turn favours an increased division of labour due to regional differences in costs and quality. This leads to a reduction in the depth of value added by companies, which in turn favours joint development. Technological progress offers new ways of working together and coordinating across geographical distances. Improved technology standards and intellectual property rights (IP rights) are further driving the exchange of ideas (Dahlander & Gann, 2010).

These developments also lead companies to open up their development processes to the environment. The activities within the framework of the OI initiatives are divided into three types, which will be examined in more detail below.

#### *Inside-out knowledge flow*

One characteristic of the OI approach is the principle of inside-out innovation. For this purpose, the internal knowledge of a company is made available to external actors (Dahlander & Gann, 2010; Enkel et al., 2009). This may be the case, for example, if an internal development project cannot demonstrate synergies with existing business models. While the project would be a part of a closed innovation process, knowledge would be externalised as a part of the Inside-Out Initiative (Vanhaverbeke, Van de Vrande & Chesbrough, 2008). In this way, promising ideas can still be realized and brought to the market faster than through one's own enterprise. It will therefore not only be limited to existing markets, but will also participate in businesses beyond its core business. The companies thus generate additional revenue streams through fees for licenses awarded, by joint ventures or supported spin-offs (Enkel et al., 2009; Garicano & Rayo, 2016).

In practice, the inside-out approach is usually implemented by multinational corporations with strong resources (Enkel et al., 2009). These established companies are often able to set technology standards by externalizing knowledge. In addition, approved innovations can also be used to transfer them to other industries (Enkel & Gassmann, 2010). In this context, the literature mentions in particular the increasing awareness of the establishment of corporate venturing activities (Vanhaverbeke et al., 2008), whereby, for example, Corporate Incubator (CI) units are set up for knowledge externalization.

The inside-out approach thus represents an opportunity for companies to obtain additional revenue streams by the external realization of unused knowledge. According to Lichtenthaler (2009), there is a positive correlation between the inside-out initiatives of the companies and the success of the company. Despite all this, this form of the OI model is less established in both academic research and industrial practice than the outside-in process described below (Chesbrough, 2017; West & Bogers, 2014).

#### *Outside-in knowledge flow*

As part of the outside-in process, the company's own knowledge base is to be enriched by integrating external sources (Enkel et al., 2009). Enkel and Gassmann (2007) show that in practice the majority of customers and suppliers are involved in the OI process. In addition, competitors and research institutes also represent a relevant source. The outside-in process follows the logic that the place of knowledge creation does not necessarily have to coincide with the place of innovation creation (Enkel et al., 2009). However, the integration of customers and suppliers is not a novel issue in the literature. The joint inclusion of knowledge from partners along the value chain is often regarded as a critical aspect of success (Cao & Zhang, 2011).

While the inclusion of industry-related partners is a well-known strategy, the increasing importance of players from outside the industry can also be seen in this context (Enkel et al., 2009). Particularly in the literature on cross-industry innovation, the relevance of knowledge, technologies and partners with a high cognitive distance is discussed (Enkel & Gassmann, 2010). Accordingly, added value is created for both parties when people with different knowledge and perspectives interact and thereby combine their existing knowledge and stimulate new things (Nooteboom, Van Haverbeke, Duysters, Gilings & van den Oord, 2007).

The application of cross-industry innovations, for example, represents an established approach in the automotive industry to generate radical innovations while at the same time reducing dependence on existing partners close to the industry (Gassmann, Zeschky, Wolff & Stahl, 2010). The iDrive system of the German automobile manufacturer BMW is an example of the successful implementation of knowledge from outside the industry (Enkel & Gassmann, 2010). At the end of the 1990s, BMW opted for an integrated control concept that aims at reducing the number of operating elements in automobiles. The implementation required the integration of new technologies, although BMW did not have the necessary knowledge at that time. Similarly, the existing automotive suppliers did not have the knowledge to advance the interaction between man and machine in automobiles (Gassmann et al., 2010). The cooperation between BMW and Immersion, a developer of joystick technologies in the video game industry, was based on this problem (Enkel & Gassmann, 2010; Gassmann et al., 2010). The integration of their haptic feedback technology enabled a fundamental innovation in the field of automotive control elements (Gassmann et al., 2010).

The example above confirms the potential of cross-industry innovation through the integration of external knowledge. The challenge, however, is to maintain knowledge with a sufficient cognitive distance, but this does not exclude mutual understanding (Enkel & Gassmann, 2010). In the literature, the ability of companies to form technological analogies is assessed as a competitive advantage (Enkel & Gassmann, 2010). Accordingly, a connection is drawn between the integration of knowledge from other industries and the emergence of radical innovations (Dahl & Moreau, 2002; Farjoun, 2008). Inclusion therefore has a positive influence on the success of the company (Gavetti, Levinthal & Rivkin, 2005).

#### *Bilateral flow of knowledge*

According to Chesbrough (2003), the concept of OI is described as a linear process in which either internal knowledge is made available to external actors or external knowledge is included for the company's own development (West & Bogers, 2014). Enkel et al. (2009) extend the linear OI model by the so-called coupled process. This refers to the co-creation between complementary partners. The focus lies on the joint exchange of resources, whereby the inside-out process is combined with the outside-in process (Enkel et al., 2009). Accordingly, the bilateral exchange of knowledge between two actors can also be regarded as a relevant scenario for OI activities.

According to Ramaswamy & Ozcan (2018), the term co-creation is associated with a large number of activities in the literature. The collaborative exchange as well as the generation of new knowledge by lead users or customer interaction can be realized via collaboration tools such as crowdsourcing platforms (Franke, Von Hippel & Schreier, 2006; Kohler, 2015; West & Bogers, 2014). Furthermore, the co-creation process can be realized through contractual collaborations with university and research institutions (Perkmann & Walsh, 2007). In addition, the bilateral exchange of knowledge with other companies offers other applications. This can be achieved, for example, by establishing strategic alliances or joint ventures (Enkel et al., 2009; Panico, 2017; Trott & Hartmann, 2009).

The study by Enkel and Gassmann (2007) shows that the use of joint development processes depends on the respective industry. Companies in highly competitive industries, such as the IT or high-tech industries, are characterised by a high level of co-creation activity. In contrast, companies in less competitive markets are usually characterised by independent development projects. Examples include the leather processing and wood industries (Enkel et al., 2009).

#### 2.2. *Main features of organizational learning*

The transfer of knowledge represents an important aspect for cooperation with external actors. As already described, within the framework of the OI initiatives knowledge that is close to or unknown to the sector can be brought into the organization or new knowledge can even be created through interaction. Furthermore, the initiation of a collaboration represents a contribution to the organizational learning progress of the enterprises (Hamel, 1991; Kogut, 1988).

According to Simon (1969), organizational learning is the increasing recognition and successful restructuring of organizational problems by individuals, which is reflected in the structure and outcome of organizations (Fiol & Lyles, 1985).

Within the framework of this work, the focus is primarily on the aspect of changes in the state of knowledge through the inclusion of external actors. Accordingly, organizational learning is regarded in the following as the preservation, creation and transfer of knowledge in the enterprise (see Figure 1).

Organizational learning process		
Knowledge preservation	Knowledge creation	Knowledge transfer

**Figure 1.** Organizational Learning Process.

The existing knowledge base of an enterprise is not permanently used (Benkard, 2000). In this context, the aspect of organizational forgetting represents a challenge. On the one hand, the cleansing of knowledge can offer a desirable situation in order to obtain a basis for the access to new knowledge. On the other hand, however, an unwanted loss of knowledge can also have negative effects (Holan & Phillips, 2004). In personnel-intensive companies, for example, this may be caused by the departure of employees (Benkard, 2000). Knowledge retention thus describes mechanisms to reduce the extent of unwanted organizational oblivion (Holan & Phillips, 2004).

While literature deals with the process of knowledge retention, the research focus of the publications so far has been less on the aspect of knowledge generation (Argote, 2011). The process of knowledge creation is the process by which knowledge created by an individual is made available to an organization in order to connect it to its knowledge base (Nonaka & von Krogh, 2009). On the one hand, this can be a substitute for the forgotten knowledge of the company and, on the other hand, it can expand the knowledge base.

Knowledge transfer is a process in which a unit (e.g. an individual, a group or a department) is influenced by the experience and knowledge of another (Argote & Ingram, 2000). This can affect both internal and external exchange between units, with initiatives such as CIs and CAs being able to drive the exchange forward.

According to Nonaka (1993), relevant knowledge can be classified as explicit or implicit within the framework of organizational learning. Implicit knowledge is described as subjective knowledge that is difficult to formalize, articulate and transmit to others (Huang, Hsieh & He, 2014; Liu, Jiang & Song, 2014; Nonaka, 1993). For example, it may be based on personal experience, professional insight and know-how in a particular field (Huang et al., 2014). Explicit or codified knowledge is to be regarded as objective knowledge that can be translated into formal, systematic language (Nonaka, 1993; Nonaka & von Krogh, 2009). It can be recorded in the form of documents, reports or models among others (Nonaka, Toyama & Konno, 2000).

Consequently, the transfer of explicit knowledge is easier to realize than the transfer of implicit knowledge. Nevertheless, the types of knowledge are regarded as complementary, which is why both types are important for organizational learning efforts (Trong Tuan, 2012). The following mechanisms contribute to the transfer of knowledge: (1) observation, (2) communication, (3) technology transfer, (4) replication of routines, (5) patents, (6) scientific publications and presentations, (7) customer and supplier interaction, and (8) other inter-organizational forms of collaboration (Argote & Ingram, 2000).

### 2.3. Forms of interaction with start-ups

As already described in the previous chapter, opening up innovation management is one way to overcome the existing challenges faced by incumbents. In this context, the inclusion of start-ups in particular represents an important aspect of the OI initiatives (Dushnitsky & Lenox, 2005; Kortum & Lerner, 2000; Shane, 2001). In the literature, there is now a multitude of forms of cooperation between the two parties. In particular, the initiation of corporate hackathons and the establishment of CI, CVC and CA units are important formats (Kohler, 2016). In the following, the forms of cooperation shown in Figure 2 are examined in more detail.

#### *Corporate Hackathon*

In recent years, the concept of the hackathon has become increasingly important in practice in (Grijpink, Lau & Vara, 2016). The term is composed of the words hacking and marathon, which implies a short time limit and the inclusion of explorative programming activities (Metten, 2017). A hackathon is thus an event in which computer programmers and developers develop a solution for a specific software project under time constraints (Byrne, O'Sullivan & Sullivan, 2017; Chowdhury, 2012).

While hackathons are used by public institutions, universities or industry associations, for example, to generate solutions, hackathons also become increasingly important in the business environment (Almirall, Lee & Majchrzak, 2014; Byrne et al., 2017; Chowdhury, 2012; Grijpink et al., 2016; Metten, 2017). For example, such events have become increasingly relevant for IT companies such as Facebook, Foursquare and Yelp in the development process (Chowdhury, 2012). In the past, the majority of hackathons were primarily focused on the development of software, but recently, the inclusion of hardware components also becomes important (Briscoe & Mulligan, 2014). These initiatives are therefore no longer only relevant for the rapid development of software solutions in the IT sector, but can rather be regarded as a cross-sector tool for solving problems.

Corporate hackathons bring corporate employees together with other players such as start-ups, whereby solutions for existing problems are worked on jointly and across disciplines within one to seven days (Briscoe & Mulligan, 2014; Metten, 2017; Soltani, Pessi, Ahlin & Wernered, 2014). Not only the new problem-solving approaches are essential, but also the experience gained by the participants (Metten, 2017). In a Corporate Hackathon, established employees are encouraged to develop innovative solutions outside existing processes and working methods. Ultimately, the participants should learn how groundbreaking innovations can also be realized in established organizations (Grijpink et al., 2016). Interdisciplinary collaboration thus generates the emergence of new ways of thinking and development strategies among the internal participants (Metten, 2017).

Corporate hackathons can be classified as an OI initiative by opening the development process to external actors (Almirall et al., 2014). They serve as tools for the targeted generation of hardware- and software-based problem solutions. In addition, they can be seen as a tool for accelerating cultural change, generating customer-centric and agile problem-solving competence among internal participants (Grijpink et al., 2016; Soltani et al., 2014).

#### *Corporate Incubator*

The American National Business Incubation Association describes the term Business Incubation as a dynamic process of business development. The term refers to an interactive development process in which people who are ready to start a business and existing start-ups are supported in the development of innovative products (Aernoudt, 2004).

Accordingly, Incubators are units that mediate the development process by offering a wide range of services. This includes offering office space and facilities for shared use in the day-to-day business of the start-ups (Bøllingtoft & Ulhøi, 2005; Mian, Lamine & Fayolle, 2016). In addition, the sponsored participants receive support in terms of content through general coaching and individual training (Bøllingtoft, 2012). The Incubator's content support covers topics in the areas of finance, human resources, organization and strategy (Clarysse & Bruneel, 2007). The teaching of scientific and practical content is intended to accelerate the learning and competence development of young companies and thus secure their chances of survival (Bruneel, Ratinho, Clarysse & Groen, 2012). Furthermore, the provision of networks in the literature is evaluated as a decisive aspect for the successful development of young companies (Aernoudt, 2004; Dubini & Aldrich, 1991). For this reason, networking is a key performance aspect of Incubators (Hackett & Dilts, 2004; Hansen, Chesbrough, Nohria & Sull, 2000). The CI network may include access to potential customers, suppliers, university and research institutions, industry partners, public institutions, law firms, management consultants or investors (Hackett & Dilts, 2004; Hansen et al., 2000; Robinson, 2010).

While commonalities can be presented with regard to the basic structure of content, Incubators can be differentiated by their objective and profit orientation. Since the foundation of the first Incubator, the majority of Incubators have been non-profit (Campbell & Allen, 1987; Cohen, 2013a). Non-profit Incubators provide the above-mentioned support for start-ups in order to generate jobs, promote local economic development or commercialize university innovations (Gassmann & Becker, 2006; Grimaldi & Grandi, 2005).

In addition to non-profit institutions through state and/or university support, more profit-making Incubators are emerging (Peters, Rice & Sundararajan, 2004). The so-called for-profit Incubators concentrate on achieving financial returns through the targeted development of start-ups. These revenues are generated by charging service fees for services and, in the medium to long term, by participating in the subsidised start-ups (Gassmann & Becker, 2006).

In addition to independent income generating Incubators, there are facilities initiated by established companies. The CI is an instrument within the framework of the corporate start-up activities of established companies. The initiative enables the exploration and exploitation of new business opportunities for established companies (Ford, Garnsey & Probert, 2010). The unit, which is legally founded mostly as a subsidiary of the parent company, draws on the resources of the entire corporate to support new business ideas (Gassmann & Becker, 2006).

Weiblen & Chesbrough (2015) describe the CI as an inside-out instrument within the framework of OI management. This means that internal business ideas are promoted that do not fit into the core business for strategic reasons. The basic idea is to be able to provide a start-up-like environment for employees who are willing to set up a business. In an Incubator, radical innovations should be able to develop better than in the parent organization, which is characterized by bureaucracy and regulations. A successful implementation of an internal idea can, for example, be commercialised through a spin-off and thus open up new markets for the company or be integrated into the company as an independent unit (Weiblen & Chesbrough, 2015).

In the literature, however, not only the internal perspective of the CI is presented. Rather, this initiative also offers an opportunity to participate in external start-ups (Gassmann & Becker, 2006). Established companies thus also use their resource strength to promote external start-ups in their development and at the same time integrate new knowledge and technologies into their own companies (Becker & Gassmann, 2006a). Consequently, the concept of the CI can also describe an outside-in initiative within the framework of OI. CIs thus give established companies the opportunity to develop new business options by investing in internal and external start-ups and thus make a contribution to corporate growth (Ford et al., 2010).

#### *Corporate Venture Capital*

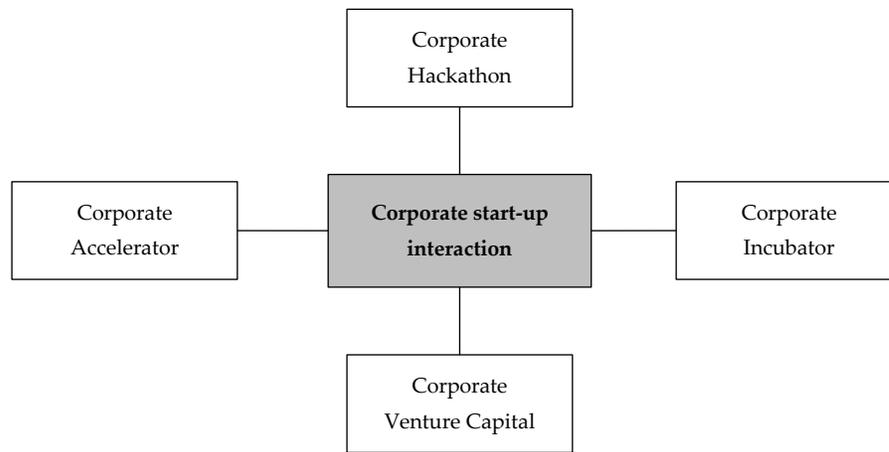
In addition to primarily cooperation-driven initiatives, participation through financial means represents a way of participating in start-up companies. Above all, investment-driven participation by CVC units is an important format for many established companies (Napp & Minshall, 2011).

The basic idea is focused on the concept of independent Venture Capital (VC) initiatives. In the literature, VC is described as the participation of investors in start-up companies, realized through the use of long-term, unlisted risk capital. Investors hope that this will increase the capital employed, supplemented by an additional dividend annuity (Wright & Ken, 1998). While independent VC units only want to achieve financial motives, CVC units belonging to companies are characterized by two target dimensions (Chesbrough, 2002): In this context, companies usually invest in young companies in order to achieve a financial and a strategic target component (Dushnitsky & Lenox, 2005; Weiblen & Chesbrough, 2015).

The financial component, comparable to independent investors, is characterized by an expected increase in the risk capital employed (Bleicher & Paul, 1987). CVC units are often in a position to achieve comparable or even better returns through investments than independent investors, especially due to the existing expertise of established companies to understand underlying markets and technologies (Chesbrough, 2002). In addition, the investment of an established company can generate a positive signal effect, whereby other investors and potential customers associate a higher quality with the start-up (Chesbrough, 2002; Weiblen & Chesbrough, 2015).

The literature indicates a large number of strategic objectives in the CVC activities of established companies. For example, attempts are made to gain access to new technologies or markets, to contribute to the company's diversification strategy or ultimately to observe possible acquisition targets (Anokhin, Peck & Wincent, 2016; Benson & Ziedonis, 2009; Chesbrough et al., 2006).

The CVC initiatives represent a way for established companies to gain access to the knowledge base of start-ups and thus achieve learning effects for their own organization (Benson & Ziedonis, 2009; Park & Bae, 2018; Wadhwa & Kotha, 2006). In this context, the more VC investments in start-ups, the greater the inflow of entrepreneurial knowledge (Dushnitsky & Lenox, 2005). In this context, Dushnitsky and Lenox (2005) emphasize in particular a positive correlation between CVC investments made and the increase in patents created in the company. Accordingly, the inclusion of start-ups by CVC can increase the innovativeness of established companies and thus represent an important aspect of the OI initiatives (Dushnitsky and Lenox, 2005). Figure 2 summarizes the different forms of interaction between corporates and start-ups.



**Figure 2.** Forms of interaction between corporates and start-ups.

#### 2.4. Corporate Accelerator

##### *Differentiation between the Accelerator and Incubator model*

In order to gain a deeper understanding of the Accelerator model, it is helpful to distinguish it from the Incubator concept. In the literature, these two concepts are often related or sometimes used synonymously. While both pursue the goal of successful start-up development through a comparable approach, they can be differentiated by the aspects presented below.

The two concepts fundamentally differ in terms of the duration of the support measures. Start-ups complete an Accelerator program in an average of three to six months, whereas they graduate from an Incubator facility after a period of one to five years (Cohen, 2013a; Pauwels et al., 2016). The shorter period of the Accelerator reduces the dependency of the start-ups on the supporting unit. The entrepreneurial development process will be driven forward by focusing on a limited period of time, whereby the start-up will be reintegrated into the market environment more quickly (Cohen & Hochberg, 2014; Hathaway, 2016).

The time-limited Accelerator programs are usually carried out only once or twice a year. Start-ups in cohorts or so-called batches participate jointly in one program (Drover et al., 2017). The joint running of a development process often arouses a strong sense of community among the participants (Cohen, 2013a). Therefore, an Accelerator not only promotes the networking idea with other experts, but also with founders in the same development phase (Malek, Maine & McCarthy, 2014). Contact among entrepreneurs is also evident in the Incubator, but less pronounced than in the cohort model (Cohen & Hochberg, 2014).

The two concepts can also be differentiated in terms of the business model. The literature contains both income-generating and non income-generating Incubators. While for-profit Incubators participate in their start-ups and charge fees for services, in practice they represent a minority (Hackett & Dilts, 2004). According to Cohen (2013a), 91 percent of all Incubators are non-profit institutions, with the goal of economic development, and do not claim a shareholding. Accelerators, on the other hand, are predominantly profit-oriented (Cohen, 2013a). Typically, the institutions offer early-stage financing and development services in return for a stake in the start-up (Drover et al., 2017; Malek et al., 2014; Pauwels et al., 2016).

There is also a significant difference between the concepts with regard to the selection process. In an Incubator, start-ups are typically selected on a case-by-case basis, with new participants being admitted year-round (Cohen, 2013a; Malek et al., 2014). Here the development phase of the start-ups is less relevant, they can be in the early-stage or late-stage phase. In contrast, start-ups compete for limited places in a so-called batch with an Accelerator. Potential participants must apply for a place in an open, competitive selection process (Malek et al., 2014). Top Accelerator programs often accept less than one percent of the applications submitted (Cohen, 2013a). In addition, participation in cohorts for a limited period of time means that it is often only possible once or twice a year to offer oneself for participation. In contrast to the Incubator concept, start-ups are usually only in the early stages (Hathaway, 2016). The focus on the early phase is mainly due to the falling development costs in the early stage (Pauwels et al., 2016).

Intensive mentoring and educational programs are the focus of Accelerator programs and are often the main reason for the participation of young companies (Cohen & Hochberg, 2014). Incubators usually offer services such as contacts to lawyers, accountants and tax advisors as well as marketing specialists or investors (Hackett & Dilts, 2004). While most of these services are offered ad hoc, the educational aspect of the Accelerator is more intensive (Cohen & Hochberg, 2014). Seminars and workshops on a wide range of topics such as economic development, search engine optimization or term sheet negotiations for start-ups are offered on an ongoing basis (Cohen, 2013a). The training is conducted by the program's own staff or guest speakers, with individual discussions possible after the seminars (Hallen, Bingham & Cohen, 2016).

### *Definition and typology of terms*

As explained in the previous chapter, Incubators can be compared to a humidicrib in which the development of young companies is promoted over a long period of time. The start-ups are taken out of the market environment in order to develop under safe conditions. Accelerators, on the other hand, are intended to accelerate the development process and market interactions in order to learn faster, adapt and increase entrepreneurial success. Accelerator programs should therefore be seen as an answer to the Incubator's criticisms. In addition, the increasing demand for intangible, knowledge-based services is being addressed even more (Pauwels et al., 2016). The Accelerator thus represents a new generation or further development of the Incubator concept (Malek et al., 2014; Mian et al., 2016; Pauwels et al., 2016). In the literature, the two terms are often used synonymously (Becker & Gassmann, 2006b), but due to the above differentiation criteria, they are definitively considered separately within this work.

Accelerators are temporary programs that promote a preselected selection of start-ups in cohorts. Services such as mentoring support, training seminars, networking events, community jobs and access to capital are provided in return for equity participation. At the end, the demo day is the final day at which the start-ups present their development progress to an audience of experts and investors (Cohen & Hochberg, 2014; Drover et al., 2017; Malek et al., 2014; Pauwels et al., 2016; Radojevich-Kelley & Hoffman, 2012). According to Pauwels, Clarysse, Wright and Van Hove (2016), Accelerators can be distinguished in their orientation by three different typologies.

There are investment-driven Accelerators. The so-called Deal-Flow Maker Accelerator is initiated by investors such as business angels, VC funds or CVC providers in order to identify promising investment opportunities. The objective is to realise capital gains by selling the shareholdings at a later date (Clarysse, Wright & Hove, 2015). This typology is most similarly to the original concepts of the pioneer programs of Y-Combinator and Techstars (Pauwels et al., 2016).

The Welfare Stimulator, on the other hand, is aligned to strategic objectives. This Accelerator is usually initiated by a government or public institution to stimulate start-up activities within a specific region or technological area (Clarysse et al., 2015). The alignment of Accelerators is thus ultimately intended to make a contribution to increasing economic growth. The implementation of Welfare Stimulator Accelerators is characterised by different business models (Pauwels et al., 2016). While some initiatives in this context want to participate in the future sales of the young companies in return, an investment-driven orientation also represents a possible form of design. In addition, the generation of revenues by paying fees offers public institutions another possibility (Clarysse et al., 2015).

The Ecosystem Builder, on the other hand, is an Accelerator that is usually hosted by companies. It is used as a tool to connect existing customers with promising start-ups and thus promote the development of a new ecosystem (Pauwels et al., 2016). In contrast to the previous typologies, this does not usually represent a profit orientation of the established companies. Rather, the desired added value is achieved by enriching the offering for potential customers (Clarysse et al., 2015).

Accelerators are thus implemented by investors, public institutions or established companies in order to promote cooperation with start-ups. In this context there are also hybrid forms that combine the elements of two typologies (Pauwels et al., 2016). Especially due to the increasing importance of CA and its relevance for this work, this concept will be discussed in more detail in the following chapter (Cohen & Hochberg, 2014).

### *Concept of the Corporate Accelerator*

Accelerators are also an instrument for established companies to promote start-up cooperations. While Y-Combinator established the first independent Accelerator in 2005, Citrix followed five years later with the first CA. Since then, traditional Accelerators, such as the Techstars initiative, have included partnerships with established companies in their programs (Hochberg, 2015; Kohler, 2016).

A CA can be compared structurally with non-corporate initiatives (Hochberg, 2015; Richter et al., 2018). Accordingly, the definition is also relevant for company-related Accelerators. However, these can be differentiated with regard to the underlying objective. In this context, Pauwels et al. (2016) combine the establishment of an ecosystem for the relevant stakeholders of a company with the creation of CA initiatives. In addition, CAs are presented in the literature as OI instruments of established companies (Weiblen & Chesbrough, 2015). Thus, through interaction with start-ups, established companies should gain access to external innovation or promote the emergence of independent innovations (Richter et al., 2018). As an interface between the two parties, CAs offer a platform for corporates to promote the emergence of new innovations and thus gain a competitive advantage (Dempwolf, Auer & D'Ippolito, 2014; Kohler, 2016). Within the framework of the OI initiatives of established companies, CAs can make a relevant contribution to the achievement of long-term growth and to corporate success (Kohler, 2016).

In return, the young companies expect significant added value for their own entrepreneurial development through participation. In this context, the cooperation can facilitate market access for the participating start-ups. Established companies can, for example, serve as start-up customers or sales channels in order to jointly facilitate market-oriented development and positioning. In addition, the start-ups gain access to the resources and capabilities of the established companies to build and scale the business idea (Kohler, 2016). Furthermore, a possible investment that goes hand in hand with inclusion in a CA can represent added value for young companies (Kupp et al., 2017). Corporate investments are often preferred to institutional investors because corporates can offer more favourable conditions (Kohler, 2016).

CAs can therefore be seen as a tool for cooperation in which established companies and start-ups can achieve added value. In addition, this can enable more efficient and cost-effective cooperation than existing formats (Kohler, 2016).

### 3. Methodology

#### 3.1. Research approach

In the context of this paper, the concept of the CA and the influence on the initiating companies will be examined in more detail. Since the state of research is still at an early stage, an explorative research approach is used in this paper. In this context, the underlying problem is evaluated more precisely by means of a multiple case study analysis (Eisenhardt & Graebner, 2007).

Case studies are in-depth empirical descriptions of specific issues typically based on a variety of different data sources (Eisenhardt & Graebner, 2007; Gioia, Corley & Hamilton, 2013; Yin, 2009). These sources can be archive data, surveys, observations or interviews (Eisenhardt, 1989). The case study-based approach makes it possible to gain a deeper understanding of the CA concept in this context. The inclusion of several cases, taking into account different sources and perspectives, also makes it possible to develop initial theoretical approaches and create a basis for further research approaches (Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Yin, 2009). The fundamental approach of the work is divided into the phases of sampling, data collection and data evaluation (Block, Henkel, Schweisfurth & Stiegler, 2016; Yin, 2009). Actually, however, this does not represent a distinct and linear process. Rather, the research approach is an iterative process with overlaps of the individual phases. This convergence is justified by the fact that the findings from the first data analyses led to new findings and thus required new data collections (Block et al., 2016).

#### 3.2. Sample

The methodology of the multiple case study is particularly useful in terms of its potential contribution to the development of initial theoretical approaches. Nevertheless, the development of a case sample is more complex than, for example, gathering information in a single case study (Block et al., 2016). To make the sampling process easier to understand, it is explained in more detail below using a structured process (see Figure 3).

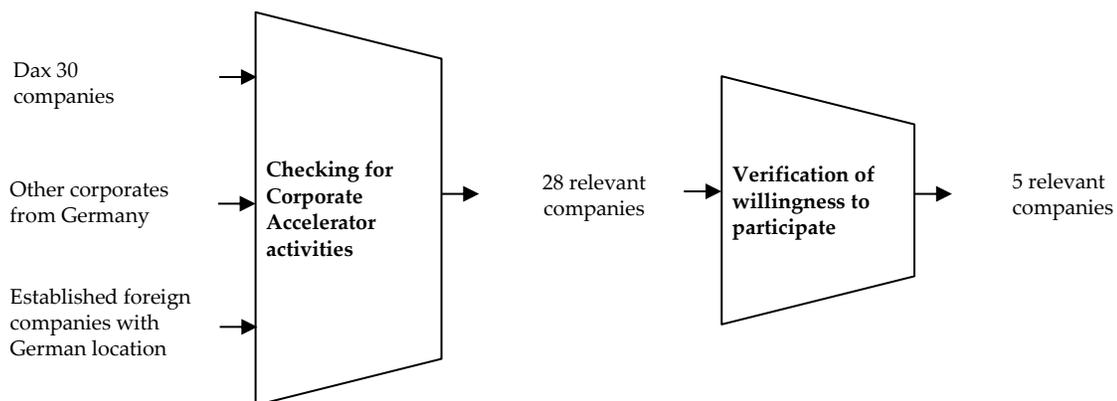


Figure 3. Sample process.

This work relates exclusively to the German market, why only established companies from Germany are considered. To this end, all DAX 30 companies were checked for their start-up activities and the existence of a CA program. The internet presences of the enterprises were examined with priority and the result was extended by a free search machine search. Furthermore, business start-up portals such as "Gründerszene", "deutsche startups" and "t3n" were included in the research process. A CA program was identified when a company's initiative met the following criteria: (1) time limitation, (2) competitive application process, (3) cohort selection, and (4) implementation of the program by a company whose main business is not start-up promotion. In this context, CI initiatives and Corporate Company Builder initiatives were not included in the selection. In addition, the focus was on the selection of active programs, as this is where data availability is most extensive. A research process according to these conditions resulted in 15 relevant CA.

The aim of the sampling process is to obtain a broad base of relevant cases in order to maximize the added value for this study (Eisenhardt, 1989). In the next step, the previous results were extended by programs of further established German companies. The focus here was on German companies that are not listed in the DAX index but can nevertheless be regarded as established in their core business. In addition, foreign established companies with a German branch were included in the process in order to increase the sample base.

The transaction resulted in a total of 28 companies as possible case studies for the company. Since the freely accessible information level of the start-up initiatives is low, the next step was to contact the CA managers. Contact was established via the social media platforms Xing and LinkedIn, where responsible managing directors, program managers and investment managers were contacted. The result of this process provided five participants for the study. As a result, the sample was condensed from 28 to five relevant companies. Table 3 shows the underlying companies in more detail.

**Table 1.** Description of cases.

	Case 1	Case 2	Case 3	Case 4	Case 5
<b>Interviewee</b>	Director Digital Agenda	Principal Business Creation	Investment Manager	Investment Manager	Program Manager
<b>Industry</b>	Finance	Technology	Media	Aerospace	Technology
<b>Revenue</b>	30.0 bn. €	70.0 bn. €	5.0 bn. €	70.0 bn. €	75.0 bn. €
<b>Employees</b>	100,000	350,000	5,000	150,000	400,000

### 3.3. Data collection

Interviews, internal company presentations and Internet presences were used as relevant sources within the scope of data collection. In this context, semi-structured interviews with the experts represent the primary source.

The five interviews were conducted in July 2017 and the duration varied between 20 and 55 minutes. With the exception of the personal interview for Case 5 and the Skype call for Case 4, all interviews were conducted via telephone. Each interview was recorded and transcribed with the permission of the interviewees, resulting in a 67-page transcript. The interviews were all conducted and transcribed in the German language. Emerging dialects were transcribed into written standard German.

The primary data from the interviews were complemented by internal company presentations of the interviewees, program announcements and Internet presences. The secondary data sources were primarily used to put the interviews into context and to create initial correlations.

### 3.4. Data analysis

The database generated from chapter 3.3 was then analyzed and reduced to its essential aspects by means of a structured and iterative process (Block et al., 2016; Gioia et al., 2013). In a first step, the content of the collected interview transcripts was checked as a whole and then processed using an open coding process. A consistent method for creating categories was defined for this process. Since it had already been demonstrated that the theoretical frame of reference is largely untapped, the inductive-deductive approach was chosen (Saunders, Lewis & Thornhill, 2012).

In a next step, individual text passages were assigned to categories, whereby deductive categories were already created from the previous literature search. In the case of a category with inappropriate content for a relevant text passage, a new inductive category was created. The result is a list of paraphrased text passages that have been reduced to generalized statements and then categorized.

Subsequently, the category structure was adjusted, whereby similar categories were summarized to ensure a selective view of the topic. In addition, classifications that did not lead to the desired content were removed from the category system. The existing codes were then condensed into aggregated dimensions (Gioia et al., 2013).

The final data structure consists of 23 categories represented in the following four dimensions: (1) organizational design, (2) objectives, (3) CA process and (4) learning effect for the established organization.

#### 4. Results

This chapter presents the results of the previous data analysis in order to analyze the phenomenon of the CA in more detail. The five case studies are used to examine the aspects shown in Figure 4 in greater detail. Accordingly, the organizational design analyses the specific design of CA initiatives in the context of established companies. Furthermore, the identified objectives of the companies are presented, as well as the content of the CA. In addition, the underlying added value for the organizing companies is presented, with the focus on the organizational learning activities.

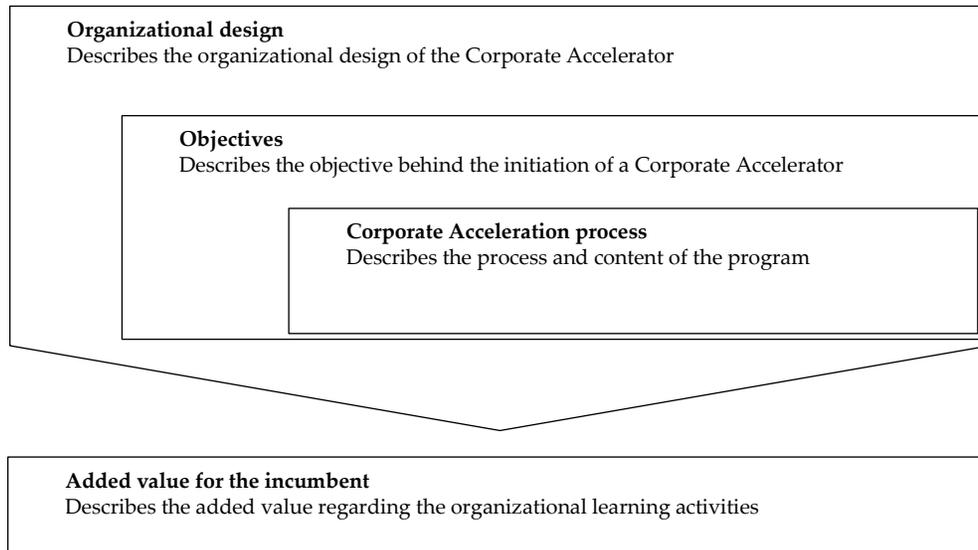


Figure 4. Structure of results.

##### 4.1. Organizational design

The CA units of established companies are implemented differently in practice with regard to their organizational structure. The CA can be integrated into an existing specialist or business unit, managed by setting up an independent specialist or business unit, or managed as separate subsidiary (see Figure 5).

Considering Case 1, there is no independent department for CAs. Rather, all relevant future topics of the company are organized within the framework of a digital agenda. The interaction with start-ups forms a bridge between internal R&D and the company's own digital implementation initiative. In this way, the activities are bundled in order to combine the existing expertise in the area of market analysis and development with the influence of start-ups to merge to one unit.

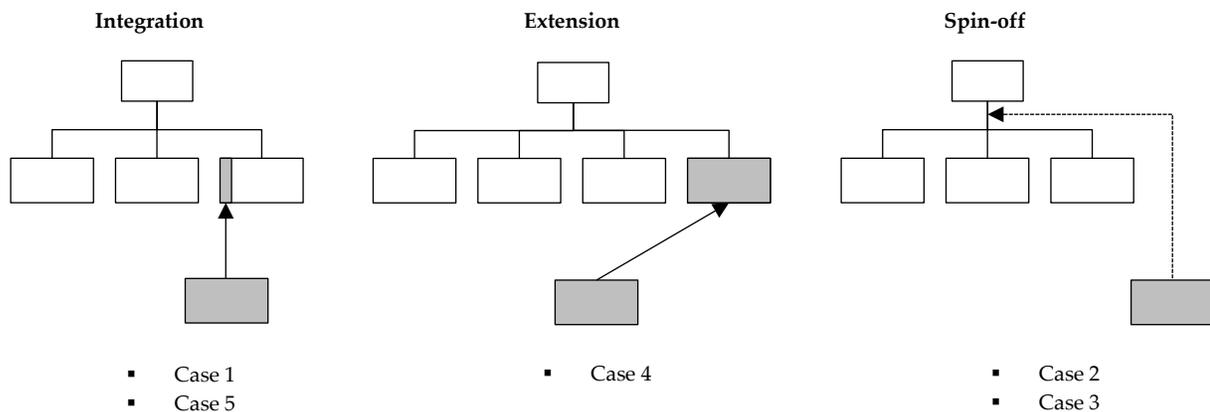
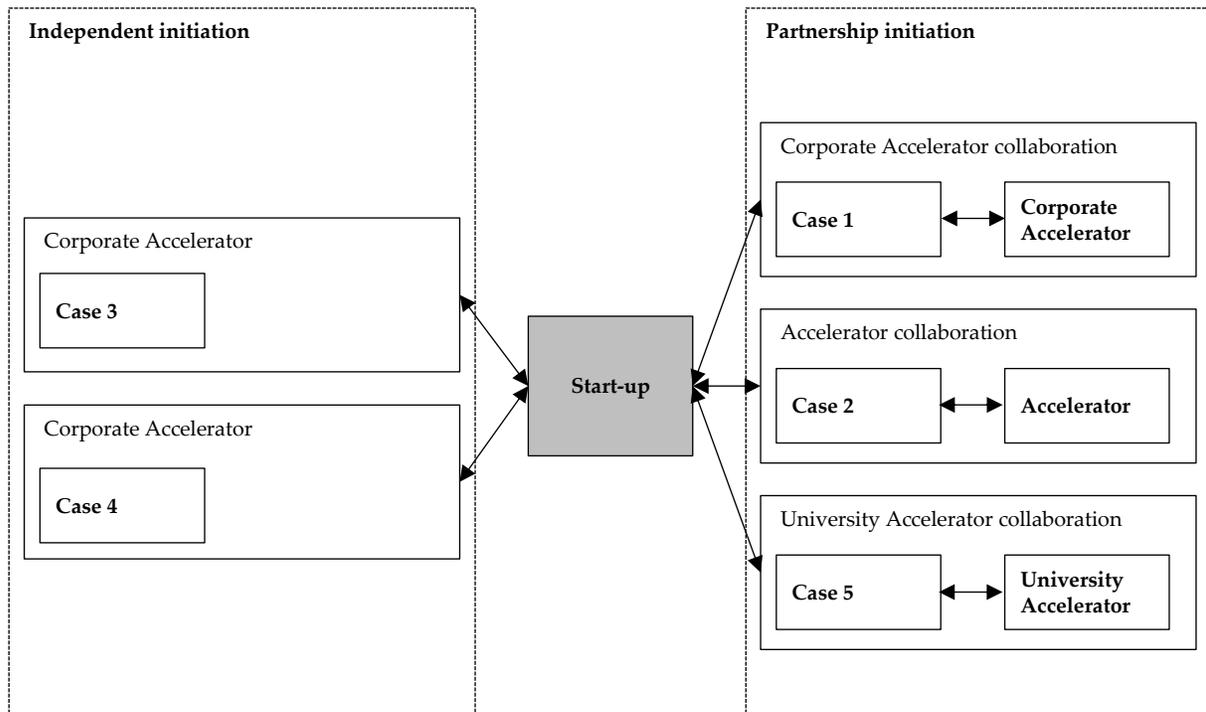


Figure 5. Different organizational forms.

Case 5 is also an integral part of an existing specialist area, where existing entrepreneurial resources are shared. The program is a performance promise of the corporate business model innovation department, which is intended to complement the established innovation methods. Above all, the integration into a central organization should enable comprehensive access to all regions and business units.

The CA unit of Case 4 is an element of the company's key innovation initiatives. Within the central innovation area, however, they manage various future topics as separate departments. As part of this, the innovation unit will be expanded to include the independent CA division. Case 3 organizes the company's start-up initiatives by realizing its own legal company. The CA is a wholly owned subsidiary of the media company and, in addition to the CVC unit, reports to the executive board as an independent, profit-oriented unit. Similarly, at Case 2 the topic of start-up cooperation is realized by an independent company which deals with acceleration simultaneously with other corporate venturing activities.

Previously, it was explained how the CA unit can be integrated into the established organization. In addition, it is differentiated whether the initiation of the program is carried out independently or by the inclusion of external resources in the form of partnerships (see Figure 6).



**Figure 6.** Origin of resources for the initiation of Corporate Accelerators.

In this context, the CA of Case 3 is characterized by an independent initiation. The CA unit was one of the first initiatives on the German market. Accordingly, the CA can now draw on a wide range of experience and know-how and thus initiate the program from internal resources. The organizational framework is realized full-time by the employees of Case 3. In comparison, the implementation is realized by internal resources within the framework of Case 4. The responsible employees of CA are employees of the parent company with previous professional experience in the aerospace industry and in the company. The persons responsible at Case 4 are full-time employees for the CA activities.

In contrast, Case 1 participates in the CA of a leading media company in Germany. In its early phase, the CA offers start-ups a platform for developing basic business models and a network of international companies and investors. The partnership between the European market leader in the development of technology start-ups in the media and finance market segment and Case 1 is based on several arguments. The Federal Republic of Germany focused its development relatively late on digitization. In addition, the banking sector within the service sector later once again focused on the challenge of digital change. This delay can mainly be explained by the past banking crisis and its consequences. Accordingly, the expertise of Case 1 in the digital environment and in particular in start-up collaboration is at an early stage. The partnership with an experienced CA is intended to promote a more error-reduced and rapid entry into the start-up ecosystem.

At Case 2, the lack of experience and activities in the field of CAs is also the reason for a partnership orientation. Case 2 participates via a partnership fee in a leading independent Accelerator and the associated ecosystem. Through the partnership, Case 2 should benefit from the experience, the worldwide activities and the network. The independent Accelerator primarily implements the operational topics during the program and contributes its technical expertise through implementation.

In contrast to the CA, Case 5 is not aligned with a private-sector Accelerator, but with a famous University Accelerator in the USA. This program also possesses many years of expertise in promoting start-ups. Based on a student initiative, the institution is now an internationally recognized Accelerator with an extensive network of experts and specialist know-how. The University Accelerator is also involved in the operational implementation of the program.

#### 4.2. Objectives

In the previous chapter, the organizational classification already gave a first indication of the objectives of the units. The intention behind the orientation of a CA program is described in detail below (see Table 4).

**Table 4.** Objectives of Corporate Accelerators.

Target dimensions					
Financial target dimension		Strategic target dimension			
Achieving Venture Capital gains	Development of profitable businesses	Understanding market dynamics	Development of technologies, innovations & business models		Change in corporate culture
			Enrichment of existing businesses	Development of new markets	

One reason for the establishment of a CA is the aim of improving financial goals. This intention is based on the assumption that start-ups gain value by participating in the program and that the organising established company benefits financially from this. For example, Case 3 pursues financial objectives through a CA. It invests in young companies through a media investment and in return receives a stake in the company. In addition, these are supported by the program contents in the CA. It is assumed that the investment and the additional services will enable the start-ups to raise their profile and, accordingly, their sales volume. The increase in the success of the start-ups described above can also result in an increase in the value of the company. As a shareholder, Case 3 thus profits from the increase in the enterprise value, whereby it wants to participate in the increase in value through a later sale of the shares.

The achievement of a strategic target dimension may also be relevant. For the CA units under consideration, achieving a profound understanding of the market is an important objective in this context. Case 1 and Case 2 are pursuing cooperation with innovative technology start-ups through the use of the CA. Through joint exchange, they aim to identify relevant market changes and trends that can add value to existing business areas. For Case 4, too, the analysis of the dynamics in its industry represents a relevant opportunity to interact with start-ups by CA units. The company has come to the conclusion that innovative mobility concepts will fundamentally change the aerospace industry in the coming decades. Start-up collaboration by the CA is therefore essential for Case 4 to review its own visions of the future and also to obtain an external view of the future of the industry.

However, the use of CA is not only seen as an instrument to identify decisive market developments. In this context, the technologies, innovative products and business models of the young companies should above all represent added value for the established companies in order to promote their own development in existing businesses. Cooperation in Case 1 goes beyond the mere observation of market and technology developments. The cooperation is expected to provide access to the IP rights of young companies. This should make already protected, promising technologies available to the established company and enable it to implement them for its own innovations in the market environment. In addition, the start-ups take advantage of new offerings that are crucial for the further development of the business of Case 1.

For the established companies, start-ups are a source for further development or even opening up of new markets by incorporating customer-oriented innovations in existing markets. In addition, start-ups are not only characterized by their customer-centered problem-solving competence, but also by an entrepreneurial corporate culture. Case 1 expects the CA initiative to add value to its own cultural knowledge base. Due to the size of the company, the existence of a large number of internal guidelines and the existence of legal regulations in the banking sector, Case 1 lacks an innovative entrepreneurial culture. Similarly, Case 2 is using the CA as part of its investment subsidiary to achieve added value for its own cultural change. The aim is to learn from the application-oriented and efficient working methods of the start-ups.

4.3. Corporate Acceleration process

In the previous chapters, the organizational implementation of a CA in practice and the underlying target dimensions were described in more detail. The CA process describes how a CA program is implemented. This process is further structured by the phases shown in Figure 7, which are discussed in more detail in the following chapters.

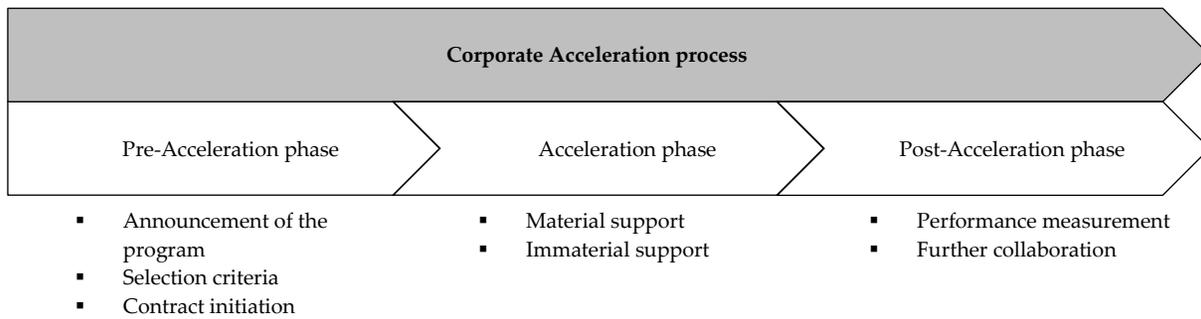


Figure 7. Three phases of the Corporate Acceleration process.

Pre-Acceleration phase

The first step in the application process is to advertise the CA program for open applications. This can be done either via the company's own website or external start-up platforms. In addition, the CA can identify promising start-ups as relevant on its own initiative and invite them to apply.

To enable established companies to achieve the above financial and strategic objectives through their CA initiatives, the selection of goal-correlated start-ups is an elementary component of the Pre-Acceleration phase. Figure 8 illustrates the selection criteria to be examined for the entry of applicants into a CA program.

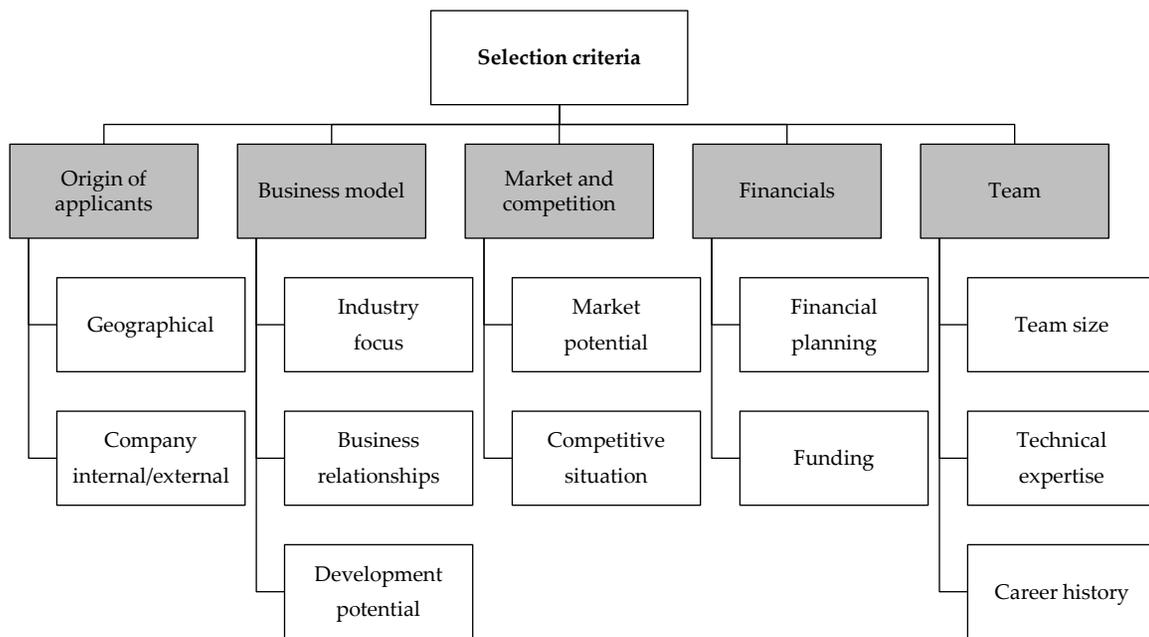


Figure 8. Selection criteria of Corporate Accelerators.

A relevant criterion for the targeted selection of a start-up is its origin. At Case 1, for example, the selection of start-ups is not determined by geographical origin. Rather, young companies from all regions of the world are included in the process. The selection criteria of Case 2, Case 4 and Case 5 are also characterized by the openness of the possible start-ups. At Case 4 and Case 5, efforts are even being made to constantly expand the internationality of the participants and the global network due to the continuous development of new Accelerator programs and locations.

In Case 3 the selection of applicants is determined by geographical origin. The CA's performance promise is intended for German-speaking countries, which is why only companies from Germany, Austria and Switzerland have access to the program.

In addition, the applicants' company affiliation is another decisive aspect. While the selection process of Case 1 and Case 3 primarily involves applicants from outside the company, the Accelerator of Case 5 must only include ideas from the company's own context. In contrast, the initiatives of Case 2 and Case 4 are determined by the involvement of both internal and external founders.

A further key selection criterion for a CA is the business model of the applying start-up. Here, the industry focus of the potential participants is a critical success factor. The CA of Case 2 uses the independent partner Accelerator to identify applicants with business-to-business (B2B) and business-to-consumer (B2C) driven business models in the area of mobility or the Internet of Things (Smith, 2017). In addition, within the framework of the Accelerator of Case 3, the industry affiliation of start-ups in the areas of online commerce, entertainment, health or finance is a condition for possible entry into the program. In addition, the CA focuses on supporting B2C business models due to its own end-user-based service offering.

While the mentioned companies all have a predefined industry focus, the initiatives of Case 4 and Case 5 are defined by changing search fields. For example, a program can pick up ideas in the Smart City area, while the subsequent program can be located in the Smart-Energy area. In addition, B2B and B2C-driven applicants are accepted as program participants. If, on the other hand, Case 1's CA is considered, it is characterized by sector-dependent selection. The open inclusion of start-ups is intended to further expand the basis of new ideas, whereby business models with B2B and B2C are also relevant.

Furthermore, the development potential of the applicant's business model is evaluated. The focus here is above all on the ability to implement and future progress. The program of Case 1 evaluates the general feasibility of the business model. On the other hand, it is examined whether the applicants' idea is feasible in practice due to legal and regulatory conditions. Furthermore, the extent to which the business model will be scalable in the future is included in the selection process. An exponential business model is always preferred to a linear one. In addition, the novelty and the unique selling proposition represent an important aspect. Within the framework of the CA from Case 5, the novelty of the business model is evaluated. The expert from the company confirms this with the statement: *"What we have as a prerequisite should be a new business model idea that has not yet been tested. Which is still at the beginning, where it is said that I have an idea, filled out a first Business Model Canvas and now I want to go in there and test whether my idea is really right"*.

In addition to the origin of the start-ups and the business model, the respective market and competition is another criterion for selecting value-generating start-ups for CA. The relevant criteria are the market potential and the competitive intensity of the market.

As part of Case 1's program, particular attention is paid to whether a potential market for a business idea exists at all. It is also relevant whether the first competitors already exist in the market or whether the applicants can achieve a premature monopoly position. In addition, the potential market and competitive environment is crucial for the initiatives of Case 2 and Case 4.

Unlike the rest of the companies considered, Case 3 already assumes the existence of a customer market. In addition, an initial demand should already exist in the form of a presentable customer base, whereby this implies an advanced stage of development of the applicants.

The financial situation of the potential CA participants is taken into account as a selection criterion. Within the framework of the CA of Case 1, the monetization concept of the applying young companies is of particular relevance. This is due to the existence of a large number of start-ups in the market that develop business models without clear financial planning. The Case 1 expert supports this with the statement: *"In addition to the market and the business model, there is always the question of monetization. If this is reasonably well thought out, or if it's more of an issue: we build first, we don't yet know how we want to earn money. Unfortunately, you see this too often these days because there is simply a lot of VC money in the market"*.

In addition to the logic of how a start-up company wants to earn money, Case 3 also considers the financing plan to be important. For this purpose, it is checked which previous financings the applicants have received before joining the CA and thus the existence of further investors is recorded.

Applicants of the programs are often still at an early stage in the business process. Therefore, the CA units see a decisive resource for the future development of the young companies in the existing founding team.

At Case 1, the team is a key factor for inclusion in the program. Teams consisting of three founding members are preferred, with an economic and technological background. In this context, not only the functional distribution is relevant, but also the distribution of company shares. An even distribution is preferred in order to avoid future shareholder disputes. In addition, the professional history of the founders is included in the selection. Here, in addition to past activities as salaried employees, the founder history of the applicants is evaluated. In particular, past successes and failures in setting up a company in the past are included in the evaluation within the framework of applications from serial entrepreneurs. Similarly, the technical composition and founding history of the external applicants is also a relevant aspect within the framework of the CA of Case 4. The employees of the CA unit also assess whether the founders are able to operate a successful and independent business after the program.

In addition, applicants are assessed for their motivation to participate in the CA program of Case 5. People who are willing to set up a business should be willing to continually reorient their own start-up idea and should also already have support from their own company.

After the applicants have been assessed on the basis of the criteria mentioned above and selected accordingly, the cooperation agreement is drawn up. During the negotiations, the concrete content of the grant and the course of the program are already recorded in writing. Once the contractual framework conditions have been signed, the Acceleration phase begins with the start of the funding program.

### Acceleration phase

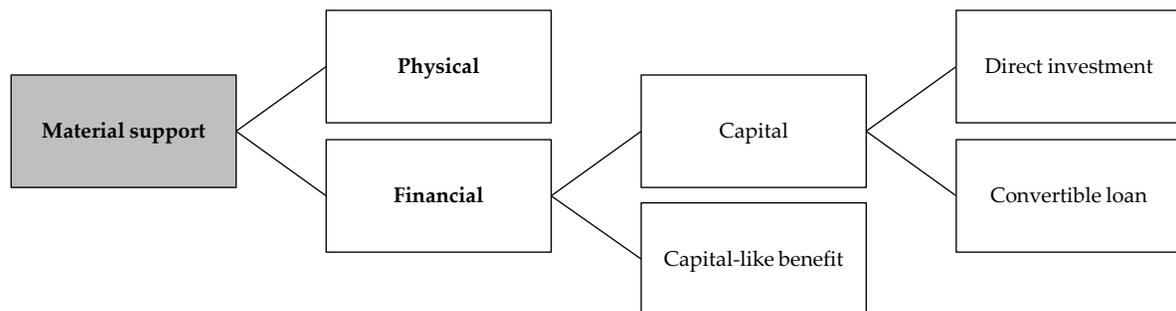
Within the framework of the Acceleration phase, the actual support program for the participating entrepreneurs is carried out. In the case of the considered companies, the programs are carried out for a limited period of time, whereby the duration varies between the programs (the duration can vary between three and eight months for each company). Table 5 shows the duration of the programs.

**Table 5.** Average duration of the Corporate Accelerator programs.

Company	Corporate Accelerator type (origin)	Average duration
Case 1	Cooperation with Corporate Accelerator	100 days
Case 2	Cooperation with Independent Accelerator	90 days
Case 3	Independent Corporate Accelerator	90 days
Case 4	Independent Corporate Accelerator	6 months
Case 5	Cooperation with University Accelerator	8 months

Within the framework of the time-limited programs, the considered case studies offer a wide range of funding content. In the following we will differentiate more specifically between material and immaterial support.

As part of the CA initiatives of established companies, the provision of material resources serves as an opportunity to support young companies. Figure 9 shows the material performance promise of the companies in more detail.



**Figure 9.** Structure of material support of Corporate Accelerators.

The support provided by the provision of physical resources is essential for the considered companies. In this context, Case 1 offers physical support in form of freely available workstations. The young companies participating are granted access to the offices of the partner CA as part of the program. This includes the provision of workstations and the necessary (IT) infrastructure for cooperation during the entire funding period. Similar to the CA of Case 1, the Case 2 program with the independent Accelerator Partner also offers access to office space and IT infrastructure. The CA of Case 3 also offers material support by offering workstations and the necessary infrastructure for everyday work in the offices of the CA. As part of the CA of the Case 4, physical resources are also offered through workplace provision. In addition to co-working spaces, the participating companies will also have access to development sites and can use the company's own equipment and machines for development.

The CA of Case 5 does not offer any material resources to support start-ups. Since the program only targets internal start-ups, only the kick-off event and the concluding demo day are to be held in the premises of the CA. The intrapreneurs use their existing jobs in the company to advance their ideas. Consequently, communication during the acceleration process only takes place through telephone and video calls.

Therefore, the provision of physical resources is an elementary component of the CA process. In this context, support through financial resources is another performance promise of the considered CAs.

Within the framework of Case 1, the supported start-ups receive financial support of 25,000 Euros. In return, the CA receives five percent of the start-up's shares. In comparison, Case 2 also provides capital support. The supportive amount of money for young companies can be up to 118,000 US dollars. The support consists of seed financing 18,000 USD, with the CA receiving six to ten percent of the start-up's shares in return. On the other hand, each participating company can receive an optional convertible loan of 100,000 USD. While start-up funding by capital resources was not used in the past, Case 4 now also offers the provision of an optional direct investment. It is therefore up to the participants to decide whether to make use of financial support or not. The optional initial investment amounts to 10,000 to 50,000 Euros, whereby the consideration is negotiated in the form of a shareholding on an individual basis.

Case 3 also transfers financial resources, but not in the form of capital, but through capital-like services. The participating start-ups will be offered an advertising budget worth 750,000 Euros. In return, Case 3 will receive shares in the young companies worth 225,000 Euros through the agreement of a convertible bond (Hüsing, 2017).

Case 5 does not provide any material resources. Consequently, no support is provided through the use of capital; rather, it is limited to an intangible performance promise. This will be discussed in more detail below.

In addition to the use of financial and physical resources, support by intangible services is a key performance promise of the CAs. In this context, access to the knowledge base of established companies for start-ups can be particularly useful.

Case 1 supports the start-ups with weekly workshops. These workshops provide generalist content which is relevant for the cooperation between established companies and start-ups. For example, expert from Case 1 and its partners will explain the challenges that B2B companies face when working together and how to overcome them. As a company of the financial industry, Case 1 is for example subject to a large number of regulatory requirements. If a start-up cooperates with Case 1, it is subject to the same regulatory requirements as the financial company itself. The start-ups are thus supported in organizational, regulatory and legal matters. In addition to the communication of general content, individual support for start-ups is also offered. For example, contacts are made with internal experts.

The CA program of Case 2 in cooperation with the independent Accelerator also offers generic workshops to support start-ups. The focus of the program, however, is rather on conveying content through individual support of the start-ups. The individual support is intended to increase the growth of the start-ups, which is to be realised by targeted support in product development and market development. In addition, the mentors support the start-up companies in drawing up a financing strategy. This includes the formulation of a corporate vision and the corresponding communication planning for contact with potential investors, partners and other relevant stakeholders. The conclusion of the program will be organized, comparable to Case 1, by the joint implementation of a demo day. This provides a platform for participants to publish their progress. In addition to Case 1's managers and other industry experts, numerous investors are also invited.

As with Case 2's CA, the main focus will be on individual support for start-ups over the entire duration of the CA program of Case 3. The CA team and managers from the parent company help the participants to develop the business on a daily basis. The founders are supported in developing the corporate strategy, product development and opening up potential markets and customers. In addition, knowledge in the areas of marketing, law, finance and technology is imparted. If the resources of Case 3 do not cover the requirements, external mentors and experts from the company's own network are involved in the support. In addition, the start-ups gain access to a network of investors and partners (Pippig, 2018).

While the CA are mainly characterised by their individual procedures, the Acceleration phase Case 4 is structured into three predefined areas for all participants. The first area has to be thematically captured among the aspect of customer validation. A potential market for the start-up is identified and answered, which customer is relevant and to what extent his or her problems can be solved. In the following phase of technical feasibility, start-ups and employees of Case 4 develop a first prototype of their product. The network of the company is already involved in order to be able to present the result to potential airline customers, airports or similar. This allows the feedback of potential customers to be brought in at an early stage of development. In the third phase of the program, the CA and the participants develop a sustainable business model. This will be developed on the basis of the previously defined market and the product solution developed and should be feasible independently of Case 4.

The CA program of Case 5 is also structured in two predefined phases. The eight-week customer discovery phase of the Accelerator is the first phase in which the start-ups form an initial picture of their potential customer. The aim of the first phase for the participants is to present a Business Model Canvas based on customer and partner interviews. The aim of the second phase is to create a product that complements the business model created in the first phase. A minimally functional product is continuously further developed with the inclusion of customer feedback. The end of the program is the closing event, where the progress of the idea development is being evaluated.

#### *Post-Acceleration phase*

An essential aspect of the Post-Acceleration phase is the evaluation of the program's success. This involves measuring the extent to which the course of the program and the development of the start-ups are in line with the objectives of the established companies. Financial indicators offer an opportunity to evaluate the progress of the start-ups under consideration.

In the CA of Case 3, the success measurement aspect forms an essential aspect within the framework of the Post-Acceleration phase. The program measures the extent to which the success of the start-up is increased by the support of the CA. This measures the enterprise value of the young company and the value of the shareholding at the beginning and at the time of a possible sale.

While the achievement of financial targets in particular can be measured by key figures, the evaluation of the success of strategic initiatives is less established in the companies under review. Accordingly, the assessment of the success of the CA by managers of Case 1 is not measured by specific indicators. This is mainly due to the fact that the initiative pursues a multidimensional target construct, whereby it is difficult to present the recording of the success of these strategic goals as a key figure. Compared to Case 1's CA, performance measurement is not a relevant aspect for Case 2. This is justified by the newness of the CA concept, whereby at the current time there are no empirical values or measurement concepts for the CA. The assessment of the acceleration process by Case 4 is not carried out by recording key figures. It is difficult to measure success by pursuing strategic, long-term goals. The company's interviewee confirms this with the statement: *"The issue of return-on-investment measurability is difficult. We repeatedly state and repeatedly come to the point that we are paying into a target that lies very far in the future (...) In this case there are no measuring instruments like this"*.

In contrast to the previous strategy-driven companies, the inclusion of key figures is a key component of Case 5. The evaluation of progress is already carried out during the program. In the first phase, the number of customer interviews carried out is a decisive key figure. This is justified by the positive correlation between the number of interviews conducted and the progress of the idea. In addition to the customer interviews, other relevant indicators are individually adapted to the circumstances of the idea. It is therefore the founders' task to develop their own system of indicators for their future business and to check its fulfillment with those responsible for CA and evaluate it in the Post-Acceleration phase.

After the funding period in the CA has expired, the organizing units decide to what extent further interaction with the start-ups will be realised. For the companies in question, further cooperation after the Acceleration phase is a desirable option.

Within Case 1, further cooperation is determined by those responsible for the unit, whereby this is decided on a case-by-case basis without a predefined process. Basically, all participants are offered further support after the program, with the start-ups having access to the CA's contacts and network. Here Case 1 establishes internal and external contacts for the start-ups in order to further the business after the Acceleration phase has expired. If a start-up that is relevant to Case 1's business is identified, contractual cooperation is established.

Long-term partnerships are an objective of the CA of Case 2. If the start-up represents an added value for the existing business, a joint development cooperation is realized. If a promising young company does not contribute to the day-to-day business of the parent company, it will act as a minority shareholder and continue to arrange support with its partner.

Case 3 also provides the young companies with further support after the program expires. For example, financial topics, necessary contacts or personnel questions can be clarified by CA experts. In addition, deeper cooperation can lead to a further investment in the start-up company. A distinction is made between a further media investment or the realization of a majority holding. In this context, the majority takeover by Case 3 will be realized by the responsible CVC unit, with responsibility no longer being assigned to the CA.

Further cooperation with promising start-ups and projects in Case 4 is also being sought. This offers an opportunity for the company to act as a customer of the young company. The participant is seen as a potential supplier whose development can be shaped by the CA initiative itself. The start-up offer is either integrated into the company's own products or made available to its customers as an additional offer. In addition, the integration of the young company into the parent organization represents a further form of design.

The integration of the business idea into the CA of Case 5 is also driven by the achievement of long-term cooperation. During the second phase of the program, the participants are already prepared for integration into a business unit by establishing a connection to existing departments. Support from the CA managers will no longer be offered after the end of the program, although the technical support will be provided by the new parent unit in the organization.

#### 4.4. Learning effect for the incumbent enterprise

##### *The knowledge deficit of incumbents*

In the previous chapter, the CA process was presented and the resources that the established companies provide to the start-ups to ultimately drive their development were highlighted. In return, incumbents expect investment-driven CA to provide access to financial resources. In order to achieve the strategic goals, the strategy-driven initiatives expect access to the knowledge base of the young companies. This is mainly due to the limited knowledge base of the established companies, which is, however, critical for the further development of the company.

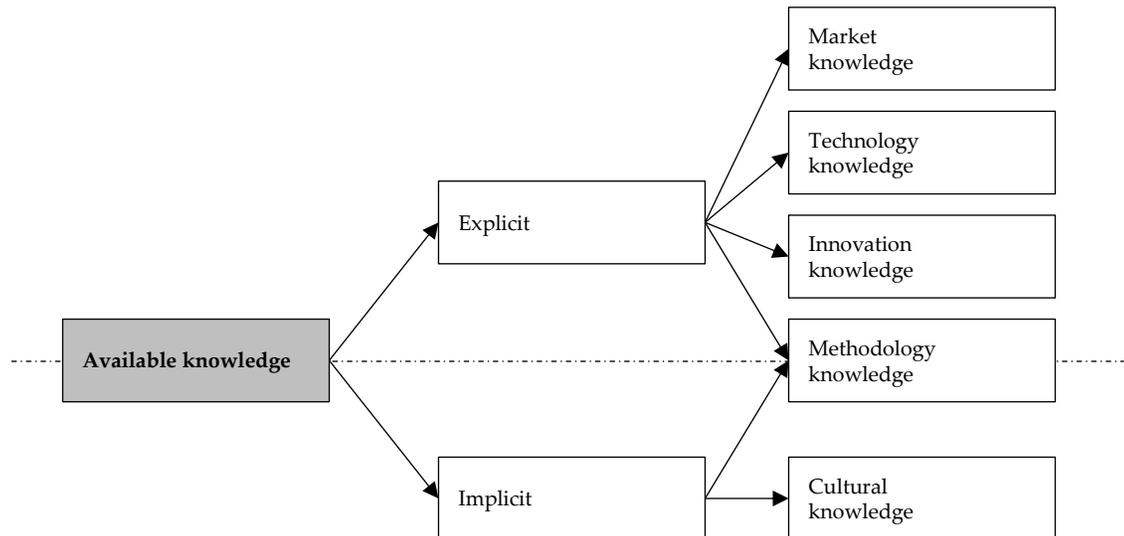
Due to its size and existing regulations in the banking sector, Case 1 is limited to its core business. It thus has the knowledge to serve and develop existing markets and existing customers from its own resources. However, there is little knowledge about the changes in the industry and the possible influence of new market participants, which are often based on innovative technologies and business models. In particular, the trend towards digitization makes it possible for new players to enter the market and change the market. The interviewee of the company confirms this with the statement: *"It is always said, and I share this, that digitization removes industry boundaries! Why should banks only do 100% banking in the future?"*. Achieving a profound understanding of the underlying market dynamics and developments also plays a decisive role for Case 1. Above all, by concentrating on existing product concepts and achieving an internal objective, there is currently little knowledge about possible future scenarios and trends.

In comparison, the corporate culture of Case 2 can also be seen as a restrictive factor in the development of innovative solutions. At Case 4, too, there is a need to gain cultural knowledge. The workforce of the company is characterized above all by a restrictive attitude toward changes within the company. The expert from the company supports this with the statement: *"If we have a project here that (...) runs completely contrary to what an existing department does, there is a defensive attitude (...) because you see yourself (...) a little threatened, you are rigid and you want to continue like this and you say: I have always done it this way and it will continue to be like that in the future"*. Therefore, there is a need for a supply of cultural knowledge in order to initiate a change in the company. Most importantly, the restrictive attitude toward change and the inclusion of new innovations also represents a knowledge deficit at Case 5. This is primarily attributable to associates who have been with the company for many years, although their activities are usually limited to the further development of the core business.

### Available knowledge through Corporate Accelerator activities

Access to new knowledge is a valuable aspect for the established companies. In this context, available knowledge can be divided into explicit and implicit knowledge within the framework of the programs (see Figure 10). For Case 1, the market knowledge of young companies is an identified added value for its own organization. Start-ups often identify new market opportunities and solve them more customer-centered than established market participants. They can also react more quickly to changes in the industry and thus perceive the change earlier. This also identifies knowledge about solutions from other industries that may influence the banking market in the future. The expert from the company confirms this with the following statement: "Because, if you are honest, only because an idea is not banking business? If it is a good idea, there is no reason not to do it as part of the bank after all".

Comparable to Case 1, the market knowledge of the young companies represents added value for Case 2. The knowledge of identifying new developments and market niches is particularly important here. Case 4 characterizes the start-ups with its knowledge of the dynamics of the market. Outside the organizational structures, start-ups are able to obtain a different perspective on the underlying changes.



**Figure 10.** Accessible knowledge through Corporate Accelerators.

In this context, start-ups are characterized not only by their knowledge of the dynamics, but also by the development of new market opportunities. In particular, Case 1 identifies the technology knowledge of start-ups as a necessary component of its own knowledge base. Above all, the knowledge base with regard to innovations plays an essential role for Case 4. A representative of the company confirms this with the statement: "An added value from the CA Program results from the change of perspective. One learns about innovations about which one has perhaps not even thought about or is not active".

CAs are thus used by established companies to make new market, technology, and innovation knowledge accessible to their own organization. In addition, the methodological knowledge generated within the framework of the CA initiatives can be regarded as added value.

Case 1 describes a knowledge advantage of the start-ups with regard to the use of agile working methods. While the first approaches to the establishment of agile working methods such as Scrum already exist, the start-ups are intended to be an additional source of knowledge. The start-ups are characterized mainly by their comprehensive use of agile methods, whereby the banking company practices these in an adapted form. The representative of the company explains this with the statement: "As far as agile working methods are concerned, methods such as Scrum, Kanban, etc., these are already applied in larger parts. Nevertheless, on the start-up side (...), the agile methods are applied in a clearer pure form". Compared to Case 1's point of view, access to the working methods of start-ups also represents a relevant added value for Case 2. Case 4 mainly describes the access to knowledge to the agile development methods Design Thinking and Scrum. Compared to the other aligners of strategically driven CA units, Case 5 pursues access to agile working methods. In particular, the lean start-up method is the central element for the technology company. In this context, methodological knowledge was identified as a combination of implicit and explicit knowledge.

The initiation of a CA program is expected not only to provide access to market knowledge and the ability to use agile methods, but also to enrich the cultural knowledge base. For Case 1, a start-up culture that favors innovation by incorporating new perspectives is particularly relevant here. In addition, changes, in particular due to the trend toward digitization, are being absorbed more quickly. The collaboration should thus provide access to the Entrepreneurial Mindset of young companies and thus make a contribution to the cultural change of established companies. Case 2 also supports this with the statement: "You have to change constantly. Start-ups are agile, adaptable, and they are not large corporations. But that's not a situation you just have to accept. Corporates can learn from it. From the organization to the development methods to the mindset of the employees (...)". At Case 5, the Entrepreneurial Mindset

is intended to support and increase the awareness of change. The Accelerator (and the increase in the number of batches) is intended to achieve a multiplier effect with regard to cultural change.

#### *Knowledge exchange through Corporate Accelerator*

The preservation of knowledge is a secondary aspect for the companies considered. Rather, Case 2 deliberately promotes the outflow of knowledge through the CA. The employees should be involved in the programs in order to promote their independence. The successful implementation of a business idea in the CA requires the employee to leave the parent company. The CA of Case 2 can thus be seen as a contribution to organizational oblivion, while at the same time the knowledge base favors access to new knowledge through the inclusion of external participants in the program. In particular, the aspect of knowledge creation and transfer will be discussed more detailed below.

It is assumed in a simplified way that the available knowledge of the participants has already been created by their entry into the program. Thus the transfer of the knowledge is the central aspect of the organizational learning process. In this context different activities are carried out to make the available knowledge of the start-ups accessible for the own organization. As shown in Figure 11, the transfer of knowledge can be carried out in a direct or indirect way. The indirect knowledge transfer is characterized by the inclusion of the CA. The CA can thus be seen as a knowledge intermediary between the established company and the start-up. In doing so, the responsible persons of the units take up the knowledge of the participants and pass it on to their own organization.

Case 1 describes mainly the responsible coaches as relevant actors. By offering regular workshops in conjunction with individual support for start-ups, CA managers gain access to the knowledge base of young companies. At this point, the individual coaching should be emphasised, with supporters of the program actively participating in project development. In comparison, managers of Case 2 are also sent as mentors to the CA to gain access to the knowledge of young companies. The representative of the company supports this with the statement: *"We as (...) Case 2 mentors can send our managers, who are in contact with the start-ups and who find out which methods they work with, which approaches they work with, and then, can copy something from there, hopefully take something with them and carry it into the big organization (...)"*. In addition, Case 4 uses a regular exchange format between corporate managers and CA managers as a means of transferring knowledge.

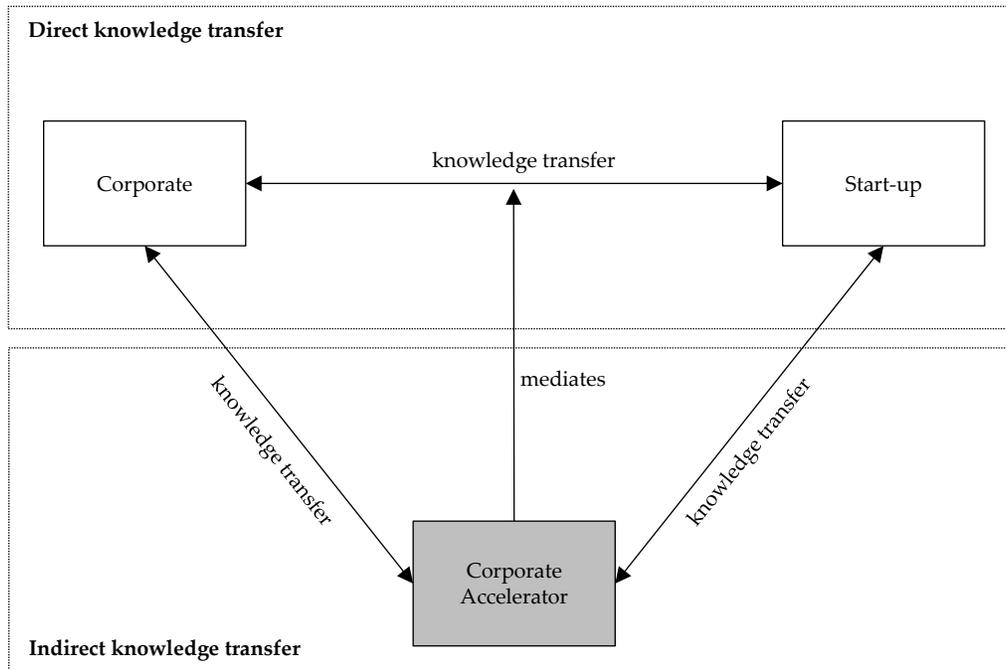
Direct knowledge transfer is characterised by the direct exchange between specialists and external start-ups. The CA thus forms the bridge between the two actors and promotes the transfer of the knowledge described before. Case 1 organizes events in which bank employees can contact the entrepreneurs. Access to cultural knowledge is a particularly relevant aspect here. There is a conviction that cultural change in an established company cannot be achieved by formal training and education. *"As a second point, we try to transport as many people as possible. Because no lecture, no training has yet become agile. You have to see it, you have to feel it, you have to experience it. That's why we make sure that even people who are not working in the project now, but who are relevant for digitization, get in touch with start-ups face-to-face"*.

At Case 2, direct contact between corporate employees and start-ups plays a special role in transferring the knowledge they need. The technology company has innovation departments at the overall corporate level as well as in the business areas, whereby the professional exchange is realized by various exchange formats.

There are also CA units that promote the participation of intrapreneurs. In this case, new knowledge is created in the internal start-ups and transferred to the organization after the program has run.

The program of Case 4 accepts internal founders to participate in the CA. The combination of internal and external founders should encourage the creation of new knowledge. Because of the joint exchange on technological trends and market developments, new insights are to be generated among the company's own employees. In addition, the inclusion of new ideas and views is intended to increase competitive thinking within the corporate, thereby also mobilizing established employees for future issues.

In particular, teaching new working methods is a relevant aspect of Case 5. To this end, intrapreneurs are given access to the methodological knowledge by regular lessons and individual support. As already described, the new results are to be applied to the company's own business idea. Accordingly, a new methodological knowledge is created among intrapreneurs by the continuous combination of instruction and practical phases. In addition, the awareness for the inclusion of mistakes and the customer-centred orientation should activate an entrepreneurial mindset among employees.



**Figure 11.** Visualization of the knowledge flow through Corporate Accelerators.

## 5. Discussion

### 5.1. Possible design configurations of Corporate Accelerator

#### Targeted typology

A strategic CA is characterized by the achievement of exclusively strategic goals, which can be distinguished by a market- and culture-driven orientation (see Table 6). In this context it should be noted that both strategic orientations are considered relevant by the companies surveyed. Only the prioritization of the underlying orientations needs to be differentiated.

**Table 6.** Typology of Corporate Accelerator programs.

Dimension	Strategic		Financial
Orientation	Market-driven	Culture-driven	Investment-driven
Objective	Understanding market dynamics	Change in corporate culture	Development of profitable businesses
	Access to new technologies, innovations & business models	Teaching agile working methods	Achieving Venture Capital gains
Practical example	Case 1, Case 2, Case 4, Case 5		Case 3

With a market-oriented approach, the focus is on gaining a deeper understanding of the respective market dynamics. Due to their size and internal objectives, established companies focus on developments in their existing business. In interaction with start-ups, fundamental technological leaps and changes as well as disruption risks are perceived by established companies. In addition, the corporates gain access to new technologies, innovations or business models. The orientation can be compared here with strategic CVC initiatives. According to Dushnitsky and Lenox (2006), CVC units represent a window to the market that enables the identification of new technologies. Thus, established companies are expected to perceive both complementary and threatening developments for their core business (Dushnitsky & Lenox, 2006). Additionally, studies show that the knowledge flow within the activities not only provides insight into market dynamics, but also improves the internal productivity of R&D developments (Benson & Ziedonis, 2009).

Furthermore, a strategic CA is seen as a tool to contribute to cultural change in the established company. The Competing Values Framework (CVF) illustrates the identified cultural differences between companies and start-ups.

In the context of this work, the established companies are characterized mainly by achieving organizational stability. In particular, the prevailing culture in these companies can be described by a hierarchical orientation. The tasks of the employees are defined by clearly defining procedures and processes (Hartnell, Ou & Kinicki, 2011). Compliance with rules and guidelines in particular contributes to the success of the existing company (Cameron et al., 2014). In the long term, the continuity of the existing business is a priority for the established companies under review, with incremental innovation taking precedence.

In addition to aligning the companies by clear hierarchies and instruction structures, the focus is on achieving rational results. The measures are thus aimed at achieving competitive advantages in the existing companies and achieving measurable goals and objectives (Cameron & Quinn, 2006). The rational orientation of the companies under consideration thus avoids actions outside of existing patterns, primarily because the employees are geared to achieving measurable goals (Hartnell et al., 2011).

While the culture of the analyzed companies can be classified primarily by the pursuit of stability, that of young companies can be characterized by a focus on organizational flexibility. CVF classifies start-ups in the adhocratic culture (Cameron & Quinn, 2006). Here, employees are motivated by an entrepreneurial, dynamic and creative working environment to continuously generate new solutions for the company. Compared to the cultural characteristics of established companies, start-ups are characterized by more individual freedom and more flexible structures. The adhocratic culture is designed to promote continuous growth and the inclusion of new resources (Hartnell et al., 2011).

The implementation of a strategic CA can thus promote the change from a hierarchical, rational culture to a risk-taking and entrepreneurial work culture. On the one hand, this change can be achieved by pure interaction with CA participants, on the other hand, the acquisition of knowledge about agile working methods should also contribute to this change. Of particular importance are the Lean Start-up method and Scrum, which influence the thinking in business models of established employees and thus should promote a problem-oriented development of new solutions.

Furthermore, the establishment of a CA enables the achievement of financial objectives. In this context, financial CA should be compared with the principles of (corporate) risk capital. Accordingly, established companies invest in start-ups that originate outside

the organization (Napp & Minshall, 2011). The CA offers participants material support in the form of capital. This is done either in the form of a direct investment or by transferring a convertible bond. The level of investment is the same for all participating start-ups in the programs. In return, the CA receives a share of the supported start-ups, whereby the amount of the share is also measured uniformly for all start-ups.

The logic of financial CAs is that the start-ups can drive the growth of their business by participating in the program. By jointly developing the start-ups, the value of the company is to be increased in the long term. The established company benefits from the increase in value through the sale of investments after the company's IPO or through a possible takeover by other players (Dushnitsky & Lenox, 2005).

### Organizational design

As mentioned above, CAs are either strategic or financial oriented in practice. Another relevant aspect for the orientation of a CA in this context is organizational design (see Table 7). Organizational integration into an existing functional or business area is one possible form of design. CA are integrated into areas which are important for the future development of the company. For example, they are integrated into central corporate functions such as innovation management, digitization, or Corporate Venturing. Thereby, the resources for initiation are provided jointly by these areas. By integrating the CA unit into an existing specialist or business area, the dependency on the organizing parent company can be considered high. The intensive, continuous exchange between the employees of the corporate and the participants of the program favors the exchange of cultural knowledge and methodology.

**Table 7.** Organizational Design variants of Corporate Accelerators.

Dimension	Strategic		Financial
Orientation	Culture-driven	Market-driven	Investment-driven
Organizational form	Integration	Extension	Spin-off
Dependence on the parent company	High	Medium	Low
Resource origin for initiation	Independent or in partnership		

Organizational expansion is another possible form of organizational design. In this case, an independent department is implemented within the established company. In this context, there are resources that are exclusively responsible for the realization of CA. The department reports to the head of innovation management or the technology manager. Comparing this organizational design with organizational integration, there is a medium level of dependency on the parent company. The CA managers can therefore concentrate on designing the programs, while the organizational structure is separate from the conventional departments. The medium dependency favors isolated access to new market, technology and innovation knowledge.

In addition, implementation in the form of a separate company (organizational spin-off) financed exclusively by the parent company represents another form of design. This form of organizational design offers the highest degree of independence from the organizing parent company. In the literature, the establishment of an independent entity is primarily justified by the fact that the flexibility, speed and independence of established structures and processes can be demonstrated in order to be able to operate in a fast-moving investor ecosystem (Shah, Zegveld & Roodhart, 2008; Weiblen & Chesbrough, 2015). The investment-driven initiative is implemented either by an independent CA or a corporate venturing company.

As part of the organizational design, it is crucial whether the CA can be realized from purely internal resources or by adding external stakeholders. While the independent initiation of CAs is an important aspect in practice, the involvement of experienced partners is also possible. This type of design is particularly relevant for companies with little experience in the field of CA. Participation in independent, company-related or University Accelerators thus offers a faster and error-reduced entry into a start-up ecosystem than independent initiation would allow.

### Program design

As described in chapter 4.3, the design of a CA program can be subdivided into the three phases of the CA process. Within the framework of the Pre-Acceleration phase, the selection process is particularly noteworthy. In order to ensure the success of the CA units, the targeted selection of the participating start-ups is an important aspect. In the literature, the criteria for selecting start-ups for cooperation are regarded as decisive for the subsequent success of the cooperation (Aerts, Matthyssens & Vandembemt, 2007). Most of the criteria are comparable with the criteria of VC and CVC initiatives (Ford et al., 2010; Kollmann & Kuckertz, 2010).

In this context, the verification of the origin of the applicants deserves special mention. As with CVC units, financial CAs only include founders outside the company's boundaries (Benson & Ziedonis, 2009; Titus, House & Covin, 2017). Since external knowledge, in particular, is to be incorporated into the organization of strategic CA units, the inclusion of young companies from outside the company is also obvious. However, in contrast to what was previously described in the CA literature, internal founders are also included in the initiative. The background to this is that the company's own employees come get in touch with the entrepreneurs and can incorporate the external perspective of other external participants as well as externalize internal knowledge.

The underlying product and its business model are checked for their future viability during the selection process. In addition to the potential success of the business idea, the financial situation of the young company is also included in the evaluation. Furthermore, to realistically calculate future financial planning, the previous financing history and the influence of other investors are also relevant here.

The subsequent CA phase is characterized by the implementation of a temporary promotional program. If the design of the CA phase is considered, general workshops are held for the participants in order to convey a uniform understanding of the cooperation with an established company. This does not only provide information on organizational, regulatory or legal aspects, but also on fundamental methods and ways of working. In addition to generalistic workshops, individual support by coaches also represents a performance promise of the CAs under consideration. The trainers specifically deal with the conditions of the start-ups and promote their entrepreneurial development through the use of specialist knowledge and experience in the established company. Compared to the performance promise of CIs and CVC units, the mediation of contacts to a large number of value-generating partners is also an important aspect in this context (Dushnitsky & Shaver, 2009; Hackett & Dilts, 2004; Hansen et al., 2000). The network can provide start-ups access to potential customers, suppliers, development partners or investors (Hackett & Dilts, 2004; Hansen et al., 2000; Robinson, 2010).

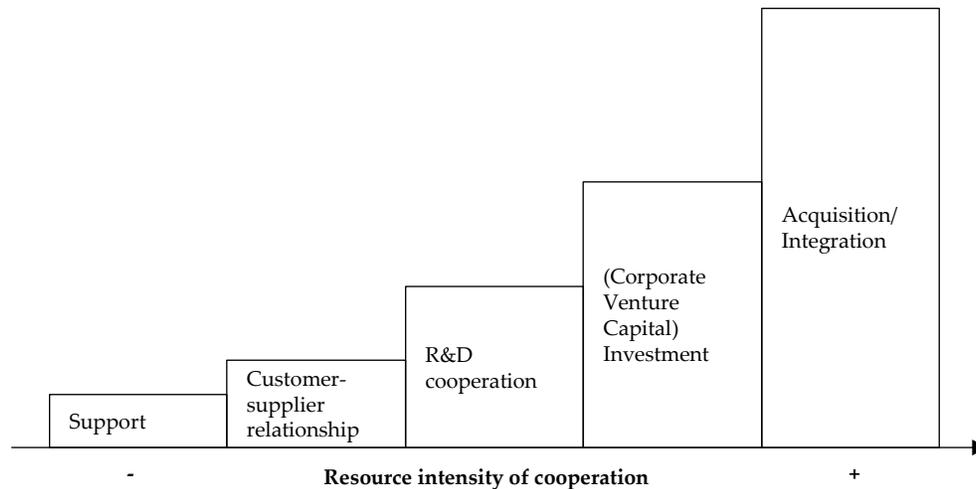
**Table 8.** Corporate Accelerator program design.

Dimension	Strategic	Financial
Alignment	Market and culture driven	Investment driven
Selection	Internal and external	External
	Non-industry-specific, Industry-specific	Industry-specific
Program offer	Generalistic workshops, individual support, expert network, (IT) infrastructure, (optional) investment	
Performance measurement	Individual evaluation	Key financial figures
Further collaboration	Collaboration, integration into parent companies	Majority participation, acquisition

The organization of a concluding demo day includes a further opportunity to establish a network and contacts. The start-ups will present their business ideas to a large number of investors and experts in order to gain further recognition and financing. In the literature, the Demo Day represents an important aspect of the performance promise, especially for independent Accelerators (Cohen & Hochberg, 2014; Pauwels et al., 2016). On the other hand, in the CA initiatives identified, the significance of a concluding demo day is to be classified as low, although this is only regarded as an optional addition to the network production.

Irrespective of a strategy or investment-driven orientation, the concrete support during the program can be carried out in a similar way. The design of the Post-Acceleration phase is characterized by recording the success of the CA units. For financial CAs, the numerical evaluation of the success of the cooperation is an important aspect. The change in the value of the company is assessed and thus the value of the shareholdings at the time of a possible sale. Comparable to CVC units, the measurement of return on investment is therefore the key performance indicator of an investment-driven CA (Markham, Gentry, Hume, Ramachandran & Kingon, 2005).

The measurement of success in a strategic CA plays a subordinate role for the organizing companies. This is mainly due to the fact that it is difficult to evaluate the recording of strategic goals in the form of an influx of knowledge. However, a first possible step towards success assessment could be the inclusion of feedback on the course of the program. Thus, the subjective perception of those responsible for CA and start-ups represents a first point of reference for the evaluation of the programs. In addition, it could be assessed to what extent the established company was able to advance the start-up development. Also, to the progress of the CA, it could also be measured how many joint follow-up projects were achieved by the initiative.



**Figure 13.** Different forms of cooperation according to intensity.

The design is differentiated according to the intensity of resource use. One possible form is pure interaction as a minority shareholder. This is the result of a decision against cooperation during the Acceleration phase. The established companies are only involved in the company by the possible initial investment of CA, whereby an established company does not play an active role in the cooperation by the minority participation. In practice, optional support appointments are offered, with start-ups being able to request ongoing technical support. In this context, the passive design of further cooperation is characterized by the lowest intensity.

Another relevant form of cooperation is interaction in terms of a customer-supplier relationship (Mesquita, Anand & Brush, 2008; Su & Yang, 2017). An established company has identified relevant technologies or start-up products through the CA which will be integrated into the company's own product development process in the future or which will ultimately serve as an additional offer for the existing product portfolio. This form of cooperation is particularly important in the context of a strategic CA. In this context, the intensity of cooperation and the use of resources is characterized by a low to medium dependency.

If established companies identify targeted start-ups within the framework of CA initiatives, the joint development of technologies and products also represents a possible form of collaboration. R&D cooperation as a further form of cooperation is regarded as a target-oriented means of exploring external technologies and knowledge. Established companies and start-ups can complement each other with complementary resources and thus minimize development costs and risks (Okamuro, Kato & Honjo, 2011). R&D cooperation is particularly important as a form of cooperation within the framework of a strategic CA. The intensity of the collaboration and the joint use of resources must be considered higher than in the customer-supplier relationship.

In addition, for investment-driven CA in particular, the acquisition of a majority interest up to full acquisition is a relevant aspect for further cooperation after the program. The CA units serve as an early detection tool for the CVC and Mergers & Acquisitions activities of established companies. This means that it is already possible to identify whether a further investment or a subsequent divestment is appropriate after the CA's temporary program. According to Tong and Li (2011), the liquidation of a majority interest and an acquisition poses a greater challenge than a minority interest. Thus, pre-selection by the financial CA should ultimately make a positive contribution to the screening process of fundamental CVC activities as well as mergers and acquisitions (Kollmann & Kuckertz, 2010). While the complete takeover of investment-driven units is driven primarily by the desired increase of share value, integration can also be important in the case of strategic units. Targeted participants can be integrated into existing specialist or business units and thus contribute to the further development of the companies.

## 5.2. Added value for established companies

### *Corporate Accelerator as matchmaker of complementary knowledge*

CAs serve as so-called resource matchmakers between established companies and start-ups. The CA unit can therefore be regarded as a mediator between the two parties to support the joint exchange of resources. In this context, the participants gain access to the tangible and intangible resources of the companies.

In order to achieve the objectives of the CA, the incumbents expect in return access to the resources of the participants. Under the investment-driven CA, only access to tangible resources in the form of capital gains from the subsequent sale of equity interests is expected. This type of CA is therefore not characterized by the targeted acquisition of learning effects for the own organization. However, the strategic units are geared to the preservation of intangible resources. In particular, access to participants' knowledge is identified as the dominant factor.

Established companies show a knowledge deficit regarding the underlying market dynamics and trends due to internal targets and the focus on the existing business. The knowledge of the start-ups should therefore complement the established knowledge base and compensate for deficits. In this context, corporate venturing literature describes above all the aspect of gaining explicit knowledge about market dynamics and technology developments (Napp & Minshall, 2011). In this context, especially the

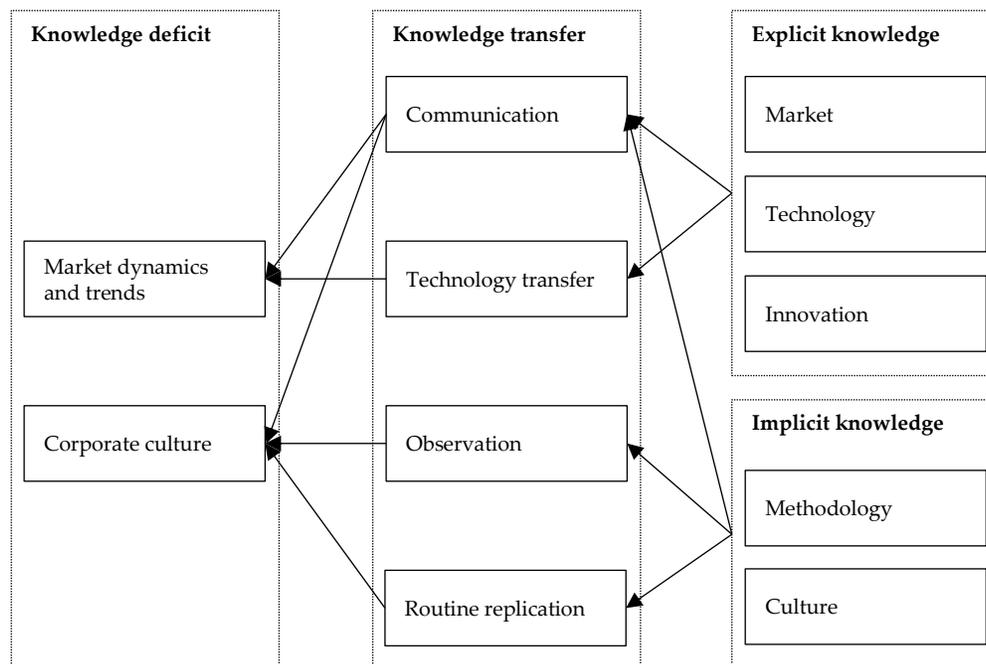
involvement of industry-related participants is an obvious aspect for stimulating new activities in existing industries. In addition to industry-specific knowledge, the inclusion of knowledge from outside the industry is also important. This creates added value for established companies when people with different knowledge and perspectives interact and combine existing knowledge and stimulate new things (Nooteboom et al., 2007). For this reason, the inclusion of participants with a high cognitive distance should promote the development of cross-sector innovations (Enkel & Gassmann, 2010). Access to the explicit knowledge of CA participants should therefore facilitate research into new technologies, innovations and business models in order to dynamise existing markets or open up new markets.

In contrast to CVC units, access to implicit knowledge is also an important aspect, especially in the case of strategic CAs. Established companies often do not have a culture which promotes innovation, with priority given to further development in existing markets. Consequently, they are characterized by a hierarchical, rational culture, which is characterized mainly by internal alignment and organizational stability (Cameron et al., 2014). In order to achieve a change to an adhocratic orientation, the influx of new cultural knowledge is encouraged. In addition to cultural knowledge, the methodological knowledge of entrepreneurs should also favour a more flexible orientation of established companies. In this context, the integration of agile working methods such as Lean-Start-up or Scrum in the CA units is intended to stimulate thinking in business models and contribute to cultural change. Ultimately, a culture-driven orientation should be seen as a contribution to the use of what is already available in the established company.

#### *Organizational learning process through Corporate Accelerators*

As already mentioned, the organizational learning process of a company is characterized by the aspects of knowledge retention, knowledge generation and knowledge transfer. In this context the aspect of knowledge retention plays a subordinate role for the CA. Furthermore, the process of knowledge generation is to be seen as a process in which the knowledge created by an individual is made available to an organization. In the context of this study it is assumed that the implicit or explicit knowledge described above already exists or is created in the course of the support program. The focus is on how the knowledge created in the CA is made available to the established organization.

If explicit knowledge is taken into account, it can be translated into formal language and articulated in words and pictures. Therefore, market, technology and innovation knowledge can be transferred both orally and in writing. In the CA, explicit knowledge is transferred via communication between corporate employees and start-ups. In addition, the aspect of technology transfer and access to the IP rights of the participants is an important aspect for the transfer of explicit knowledge. The transfer of implicit knowledge also takes place by the promotion of interaction between corporate employees and start-ups. Employees can participate in events and seminars to learn how business ideas work and how they are designed. In addition to communication with the program participants, the observation and routine replication represent a way of knowledge transfer.



**Figure 14.** Forms of knowledge transfer.

However, implicit knowledge is more difficult to formalize and transfer than explicit knowledge. This is because the cultural orientation of start-ups is based on the common values, views and practices of entrepreneurs. This does not only take into account externally visible characteristics such as corporate values, but also the way in which the start-ups interact with each other (Hau, Kim, Lee & Kim, 2013; Nonaka & von Krogh, 2009; Nonaka et al., 2000).

While the increase in a company's earnings is visible, the associated change in the state of knowledge is difficult to represent. (Fiol & Lyles, 1985). It is difficult to measure the extent to which CAs can serve as a method of transferring cultural knowledge. It is therefore questionable whether selective interaction between the two parties can contribute to cultural change in established companies.

Furthermore, the established companies achieve additional learning effects in the process of interaction and information processing, in the identification and selection of suitable partners and in the creation of management systems to control the relationships. Because of this process, the companies continuously learn which relevant sources and combinations of knowledge are relevant for their own company (Love, Roper & Vahter, 2014). Correspondingly, over time, further empirical values emerge which can improve the learning process by initiating CA.

## 6. Conclusion

### 6.1. Theoretical Implications

The concept of the CA as a bridge between established companies and start-ups has gained increasing importance in the recent past. While a large number of companies are already implementing these initiatives, there is still little understanding of the underlying intentions. For this reason, the aim of the present study was to identify the concrete objectives of established companies with regard to CA.

Within the framework of the case study-based analysis, two relevant, targeted CA typologies were identified. A financial CA is thus determined by the achievement of VC gains, comparable to company-dependent and company-independent VC units. Strategic CAs, on the other hand, are characterized by two relevant target dimensions, although these are of different importance for established companies. On the one hand, the focus is on exploring unknown market situations and new business opportunities. On the other hand, the strategic CA offers an instrument to contribute to a cultural change in the established company and to promote the use of existing resources.

It was also questionable how the units should be organized within the framework of the established companies. In the course of this study, three relevant forms of organization were identified, which are represented by organizational integration, expansion or outsourcing. In addition, the origin of resources for initiation by an independent or partnership-based approach was identified as an important form of implementation.

There is also little understanding in the scientific literature of how the CA's time-limited funding programs are implemented in terms of content. The results of the analysis show that the program is based on a three-part acceleration process. The Pre-Acceleration phase of the program comprises the call for proposals and the subsequent selection process. In particular, the selection of participants was identified as a central aspect for goal-correlated cooperation. The Acceleration phase represents the actual implementation of the program and describes the content of the temporary funding programs. In particular, a tangible and intangible promise of performance by the established companies was identified. In the Post-Acceleration phase the evaluation of the success of the financial business Accelerators was identified as a relevant point. Contrary to the assumption, performance measurement based on key figures plays a subordinate role, especially in the case of strategic-oriented CAs. In addition, further cooperation after the actual program was identified as a decisive argument for initiating a CA program.

Within CAs, participants are given the opportunity to develop their company through the tangible and intangible performance promise. In return, the established companies also expect access to the resource base of the entrepreneurs in order to achieve the described goals. While investment-driven units focus exclusively on access to financial resources, strategic CA expect access to the knowledge base of the founders. Against this background, another fundamental question of the work was to what extent CA can add value to the organizational learning activities of the incumbents. In particular, the CA is seen as an instrument to compensate for the success-critical knowledge deficits of established companies. Both explicit and implicit knowledge was identified, which is transferred through interaction between CA managers, company employees and the participating entrepreneurs. In this way, established employees can learn from the knowledge of the participants, which not only promotes the exploitation of existing potential, but also the exploration of new business opportunities.

### 6.2. Managerial Implications

If the state of research is considered together with the results of the present analysis, implications for managerial practice can be derived. This results in four managerial implications that are critical to the success of establishing a CA in a rapidly changing corporate world:

#### *Partnership with experts*

The start-up ecosystem in particular is characterized by a dynamic in which aspects such as speed and agility in development have become an imperative. Accordingly, established companies should realize the organizational orientation of a CA by involving partnerships at an early stage. In this context, collaboration with an existing (Corporate) Accelerator is an important form of design. In comparison to an independent development, the involvement of an experienced partner enables a faster, less error-prone and thus more cost-efficient entry into the start-up ecosystem.

### *Definition of clear objectives*

For the initiation of a CA, a clear definition of the underlying goals is essential. The start-up units of established companies often fail because the underlying vision and strategy is missing. Rather, these initiatives are being carried out because it is precisely a trend topic. For this very reason, an established company should determine in advance whether the underlying activities will be carried out to achieve financial or strategic goals. A combined pursuit of both target dimensions is not considered to be expedient due to the contrasting forms of design.

### *Achievement of top management support*

Established companies are subject to a variety of objectives, which often have to meet not only the expectations of management but also those of investors. For this reason, the support of top management in this area is particularly critical to success. The managers should create an understanding among investors and the management and supervisory boards that the activities are geared to long-term goals and cannot be evaluated using conventional controlling instruments.

### *Mobilisation of established employees*

In order to achieve added value for one's own organisational learning activities through a CA, the continuous involvement of established employees is a critical success factor. According to this, employees should be inspired by the collaborative interaction and by pointing out possible opportunities for entrepreneurial topics. This is mainly due to the fact that acceptance and the willingness to absorb knowledge are decisive for success.

### *6.3. Limitations and further research needs*

The present study on the concept of the CA, like any scientific publication, cannot be regarded without limitations.

In particular, the results of this work are based on a qualitative research methodology. Accordingly, the results cannot be generalised. The underlying sample refers only to German organizations. In addition, the initiatives, especially in Germany, are characterised by a novelty of the program. Consequently, those responsible for the initiatives have so far had little experience or success stories to show.

Due to their qualitative nature and the novelty of the concept, the results of the study should not be generalized; rather, they offer a first approach to the development of theories and an impetus to carry out further studies on the basis of the results. The concept of the CA is still at an initial stage, with new programs being established in business practice on an ongoing basis. This situation demands for further research.

As already outlined, the concept of the CA has similarities with the concept of the CVC and the CI with regard to objectives and organizational orientation. In order to better understand the CA concept, a detailed differentiation should be made from the existing venturing initiatives of established companies. Furthermore, there is currently little understanding of how established companies can measure the success of CA. Accordingly, there is an additional need for research to identify suitable indicators for the performance of controlling activities that are critical to success. There is also a need for further research about the influence of the CA on innovation in the established company. Therefore, it may be investigated to what extent the initiation of CAs has an influence on the number of patents and industrial property rights created in established companies.

## References

- Aboulnasr, K., Narasimhan, O., Blair, E. & Chandy, R. (2008). Competitive Response to Radical Product Innovations. *Journal of Marketing*, 72 (3), pp. 94–110.
- Adner, R. & Levinthal, D. (2001). Demand Heterogeneity and Technology Evolution: Implications for Product and Process Innovation. *Management Science*, 47 (5), pp. 611–628.
- Aernoudt, R. (2004). Incubators: Tool for Entrepreneurship? *Small Business Economics*, 23 (2), pp. 127–135.
- Aerts, K., Matthyssens, P. & Vandembemt, K. (2007). Critical role and screening practices of European business Incubators. *Technovation*, 27 (5), pp. 254–267.
- Almirall, E., Lee, M. & Majchrzak, A. (2014). Open innovation requires integrated competition-community ecosystems: Lessons learned from civic open innovation. *Business Horizons*, 57 (3), pp. 391–400.
- Anokhin, S., Peck, S. & Wincent, J. (2016). Corporate venture capital: The role of governance factors. *Journal of Business Research*, 69 (11), pp. 4744–4749.
- Argote, L. (2011). Organizational learning research: Past, present and future. *Management Learning*, 42 (4), pp. 439–446.
- Argote, L. & Ingram, P. (2000). Knowledge transfer: A basis for competitive advantage in firms. *Organizational Behavior and Human Decision Processes*, 82 (1), pp. 150–169.
- Baregheh, A., Rowley, J. & Sambrook, S. (2009). Towards a multidisciplinary definition of innovation. *Management Decision*, 47 (8), pp. 1323–1339.
- Battistella, C., De Toni, A.F. & Pessot, E. (2017). Open Accelerators for start-ups success: a case study. *European Journal of Innovation Management*, 20 (1), pp. 80–111.
- Becker, B. & Gassmann, O. (2006a). Gaining leverage effects from knowledge modes within corporate Incubators. *R & D Management*, 36 (1), pp. 1–16.
- Becker, B. & Gassmann, O. (2006b). Corporate Incubators: Industrial R&D and what universities can learn from them. *The Journal of Technology Transfer*, 31 (4), pp. 469–483.
- Benkard, C.L. (2000). Learning and forgetting: The dynamics of aircraft production. *American Economic Review*, 90 (4), pp. 1034–1054.
- Benner, M.J. & Tushman, M.L. (2003). Exploration, exploitation and process management: The productivity dilemma revisited. *Academy of Management Journal*, 28 (2), pp. 238–256.
- Benson, D. & Ziedonis, R.H. (2009). Corporate Venture Capital as a Window on New Technologies: Implications for the Performance of Corporate Investors When Acquiring Startups. *Organization Science*, 20 (2), pp. 329–351.
- Bergek, A., Berggren, C., Magnusson, T. & Hobday, M. (2013). Technological discontinuities and the challenge for incumbent firms: Destruction, disruption or creative accumulation? *Research Policy*, 42 (6–7), pp. 1210–1224.
- Bleicher, K. & Paul, H. (1987). The external corporate venture capital fund - A valuable vehicle for growth. *Long Range Planning*, 20 (6), pp. 64–70.
- Block, J.H., Henkel, J., Schweisfurth, T.G. & Stiegler, A. (2016). Commercializing user innovations by vertical diversification: The user-manufacturer innovator. *Research Policy*, 45 (1), pp. 244–259.
- Bøllingtoft, A. (2012). The bottom-up business Incubator: Leverage to networking and cooperation practices in a self-generated, entrepreneurial-enabled environment. *Technovation*, 32 (5), pp. 304–315.
- Bøllingtoft, A. & Ulhøi, J.P. (2005). The networked business Incubator - Leveraging entrepreneurial agency? *Journal of Business Venturing*, 20 (2), pp. 265–290.
- Briscoe, G. & Mulligan, C. (2014). Digital Innovation: The Hackathon Phenomenon. *Creativeworks London*, (6), pp. 1–13.
- Bruneel, J., Ratinho, T., Clarysse, B. & Groen, A. (2012). The evolution of Business Incubators: Comparing demand and supply of business incubation services across different Incubator generations. *Technovation*, 32 (2), pp. 110–121.
- Byrne, J.R., O'Sullivan, K. & Sullivan, K. (2017). An IoT and Wearable Technology Hackathon for Promoting Careers in Computer Science. *IEEE Transactions on Education*, 60 (1), pp. 50–58.
- Cameron, K.S., DeGraff, J. & Quinn, R.E. (2014). *Competing values leadership: Creating value in organizations*. Northampton: Edward Elgar.
- Cameron, K.S. & Quinn, R.E. (2006). *Diagnosing and Changing Organizational Culture: based on the competing values*. Reading: Addison-Wesley.
- Campbell, C. & Allen, D.N. (1987). The Small Business Incubator Industry: Micro-Level Economic Development. *Economic Development Quarterly*, 1 (2), pp. 178–191.
- Cao, M. & Zhang, Q. (2011). Supply chain collaboration: Impact on collaborative advantage and firm performance. *Journal of Operations Management*, 29 (3), pp. 163–180.
- Cassiman, B. & Valentini, G. (2016). Open innovation: Are inbound and outbound knowledge flows really complementary? *Strategic Management Journal*, 37 (6), pp. 1034–1046.
- Chatterji, A.K., Findley, M., Jensen, N.M., Meyer, S. & Nielson, D. (2016). Incumbents, technological change and institutions: how the value of complementary resources varies across markets. *Strategic Management Journal*, 37 (1), pp. 116–132.
- Chesbrough, H.W. (2002). Making Sense of Corporate Venture Capital. *Harvard Business Review March*, 80 (3), pp. 90–99.
- Chesbrough, H.W. (2003). *Open Innovation: The new imperative for creating and profiting from technology*. Boston: Harvard Business School Press.
- Chesbrough, H.W. (2004). Managing open innovation. *Research-Technology Management*, 47 (1), pp. 23–26.
- Chesbrough, H.W. (2010). Business model innovation: Opportunities and barriers. *Long Range Planning*, 43 (2–3), pp. 354–363.
- Chesbrough, H.W. (2017). The Future of Open Innovation. *Research-Technology Management*, 60 (1), pp. 35–38.

- Chesbrough, H.W. & Crowther, A.K. (2006). Beyond high-tech: early adopters of Open Innovation in other industries. *R&D Management*, 36 (3), pp. 229–236.
- Chesbrough, H.W., Vanhaverbeke, W. & West, J. (2006). *Open Innovation: Researching a New Paradigm: Researching a New Paradigm*. Oxford: Oxford University Press.
- Chopra, A. & Baldegger, R. (2014). Deer in the Headlights: Response of Incumbent Firms to Profit Destroying Innovations. *International Journal of Innovation in Management*, 2 (2), pp. 93–118.
- Chowdhury, J. (2012). Hacking Health: Bottom-up Innovation for Healthcare. *Technology Innovation Management Review*, 2 (7), pp. 31–35.
- Christensen, C.M. (1997). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Boston: Harvard Business School Press.
- Christensen, C.M. & Overdorf, M. (2000). Meeting the Challenge of Disruptive Change. *Harvard Business Review*, 78 (2), pp. 66–76.
- Clarysse, B. & Bruneel, J. (2007). Nurturing and growing innovative start-ups: the role of policy as integrator, *R&D Management*, 37 (2), pp. 139–149.
- Clarysse, B., Wright, M. & Hove, J. Van. (2015). A look inside Accelerators - Building Businesses. URL: [https://www.nesta.org.uk/sites/default/files/a\\_look\\_inside\\_Accelerator\\_s.pdf](https://www.nesta.org.uk/sites/default/files/a_look_inside_Accelerator_s.pdf) [last accessed 09.04.2018].
- Cohen, S. (2013a). What Do Accelerators Do? Insights from Incubators and Angels. *Innovations*, 8 (3), pp. 19–25.
- Cohen, S. (2013b). How To Accelerate Learning: Entrepreneurial Ventures Participating in Accelerator Programs (Dissertation). URL: <https://cdr.lib.unc.edu/indexablecontent/uuid:3f1e2291-3eb5-4206-9441-9ee1aa03716d> [last accessed 09.04.2018].
- Cohen, S. & Hochberg, Y. V. (2014). Accelerating Startups: The Seed Accelerator Phenomenon. *SSRN Electronic Journal*, pp. 1–16.
- Dahl, D.W. & Moreau, P. (2002). The Influence and Value of Analogical Thinking During New Product Ideation. *Journal of Marketing Research*, 39 (1), pp. 47–60.
- Dahlander, L. & Gann, D.M. (2010). How open is innovation? *Research Policy*, 39 (6), pp. 699–709.
- Danneels, E. (2002). The dynamics of product innovation and firm competences. *Strategic Management Journal*, 23 (12), pp. 1095–1121.
- Danneels, E. (2004). Disruptive Technology Reconsidered: A Critique and Research Agenda. *Journal of Product Innovation Management*, 21 (4), pp. 246–258.
- Dempwolf, C.S., Auer, J. & D'Ippolito, M. (2014). Innovation Accelerators: Defining Characteristics Among Startup Assistance Organizations. *Small Business Administration*, pp. 1–44.
- Drejer, I. (2004). Identifying innovation in surveys of services: A Schumpeterian perspective. *Research Policy*, 33 (3), pp. 551–562.
- Drover, W., Busenitz, L., Matusik, S., Townsend, D., Anglin, A. & Dushnitsky, G. (2017). A Review and Road Map of Entrepreneurial Equity Financing Research: Venture Capital, Corporate Venture Capital, Angel Investment, Crowdfunding, and Accelerators. *Journal of Management*, 43 (6), pp. 1820–1853.
- Dubini, P. & Aldrich, H. (1991). Personal and extended networks are central to the entrepreneurial process. *Journal of Business Venturing*, 6 (5), pp. 305–313.
- Dushnitsky, G. & Lenox, M.J. (2005). When do incumbents learn from entrepreneurial ventures?: Corporate venture capital and investing firm innovation rates. *Research Policy*, 34 (5), pp. 615–639.
- Dushnitsky, G. & Lenox, M.J. (2006). When does corporate venture capital investment create firm value? *Journal of Business Venturing*, 21 (6), pp. 753–772.
- Dushnitsky, G. & Shaver, J.M. (2009). Limitations to Interorganizational Knowledge Acquisition: The Paradox of Corporate Venture Capital. *Strategic Management Journal*, 30 (10), pp. 1045–1064.
- Eisenhardt, K.M. (1989). Building Theories from Case Study Research. *Academy of Management Review*, 14 (4), pp. 532–550.
- Eisenhardt, K.M. (1991). Better Stories and Better Constructs: The Case for Rigor and Comparative Logic. *Academy of Management Journal*, 16 (3), pp. 620–627.
- Eisenhardt, K.M. & Graebner, M.E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, 50 (1), pp. 25–32.
- Enkel, E. & Gassmann, O. (2007). Driving Open Innovation in the Front End. *7th European Academy of Management Conference (EURAM)*, pp. 1–35.
- Enkel, E. & Gassmann, O. (2010). Creative imitation: Exploring the case of cross-industry innovation. *R & D Management*, 40 (3), pp. 256–270.
- Enkel, E., Gassmann, O. & Chesbrough, H. (2009). Open R & D and open innovation : exploring the phenomenon. *R & D Management*, 39 (4), pp. 311–316.
- Farjoun, M. (2008). Strategymaking, Novelty and Analogical Reasoning—Commentary On Gavetti, Levinthal. *Strategic Management Journal*, 29 (9), pp. 1001–1016.
- Fiol, M. & Lyles, M. (1985). Organizational learning. *The Academy of Management Review*, 10 (4), pp. 803–813.
- Ford, S., Garnsey, E. & Probert, D. (2010). Evolving corporate entrepreneurship strategy: Technology incubation at Philips. *R & D Management*, 40 (1), pp. 81–90.
- Franke, N., Von Hippel, E. & Schreier, M. (2006). Finding commercially attractive user innovations: A test of lead-user theory. *Journal of Product Innovation Management*, 23 (4), pp. 301–315.
- Garicano, L. & Rayo, L. (2016). Why Organizations Fail: Models and Cases. *Journal of Economic Literature*, 54 (1), pp. 137–192.
- Gassmann, O. & Becker, B. (2006). Towards a Resource-Based View of Corporate Incubators. *International Journal of Innovation Management*, 10 (1), pp. 19–45.
- Gassmann, O., Zeschky, M., Wolff, T. & Stahl, M. (2010). Crossing the industry-line: Breakthrough innovation through cross-industry alliances with „Non-Suppliers“. *Long Range Planning*, 43 (5–6), pp. 639–654.
- Gavetti, G., Levinthal, D.A. & Rivkin, J.W. (2005). Strategy making in novel and complex worlds: The power of analogy. *Strategic*

*Management Journal*, 26 (8), pp. 691–712.

- Gioia, D.A., Corley, K.G. & Hamilton, A.L. (2013). Seeking Qualitative Rigor in Inductive Research. *Organizational Research Methods*, 16 (1), pp. 15–31.
- Govindarajan, V., Kopalle, P.K. & Danneels, E. (2011). The effects of mainstream and emerging customer orientations on radical and disruptive innovations. *Journal of Product Innovation Management*, 28 (S1), pp. 121–132.
- Grijpink, B.F., Lau, A. & Vara, J. (2016). Demystifying the Hackathon. URL: <http://www.mckinsey.com/business-functions/business-technology/ourinsights/demystifying-the-hackathon> [last accessed 09.04.2018].
- Grimaldi, R. & Grandi, A. (2005). Business Incubators and new venture creation: An assessment of incubating models. *Technovation*, 25 (2), pp. 111–121.
- Hackett, S. & Dilts, D.M. (2004). A systematic Review of Business Incubation. *Journal of Technology Transfer*, 29 (1), pp. 55–82.
- Hackett, S.M. & Dilts, D.M. (2004). A Real Options-Driven Theory of Business Incubation. *Journal of Technology Transfer*, 29 (1), pp. 41–54.
- Hallen, B.L., Bingham, C.B. & Cohen, S.L. (2016). Do Accelerators Accelerate? The Role of Indirect Learning in New Venture Development. URL: [https://papers.ssrn.com/sol3/Papers.cfm?abstract\\_id=2719810](https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=2719810) [last accessed 09.04.2018].
- Hamel, G. (1991). Competition for Competence and Inter-Partner Learning with International Strategic Alliances. *Strategic Management Journal*, 12 (S1), pp. 83–104.
- Hansen, M.T., Chesbrough, H.W., Nohria, N. & Sull, D.N. (2000). Networked Incubators. Hothouses of the new economy. *Harvard Business Review*, 78 (5), pp. 74–84.
- Hartnell, C.A., Ou, A.Y. & Kinicki, A. (2011). Organizational Culture and Organizational Effectiveness: A Meta-Analytic Investigation of the Competing Values Framework's Theoretical Suppositions. *Journal of Applied Psychology*, 96 (4), pp. 677–694.
- Hathaway, I. (2016). What Startup Accelerators Really Do. *Harvard Business Review*, pp. 1–7.
- Hau, Y.S., Kim, B., Lee, H. & Kim, Y.G. (2013). The effects of individual motivations and social capital on employees' tacit and explicit knowledge sharing intentions. *International Journal of Information Management*, 33 (2), pp. 356–366.
- Hauschildt, J., Salomo, S., Schultz, C. & Kock, A. (2016). *Innovationsmanagement*. München: Vahlen-Verlag.
- Henderson, R. (2006). The Innovator's Dilemma as a Problem of Organizational Competence. *Journal of Product Innovation Management*, 23 (1), pp. 5–11.
- Hidalgo, A. & Albers, J. (2008). Innovation management techniques and tools: a review from theory and practice. *R & D Management*, 38 (2), pp. 113–127.
- Hill, C.W.L. & Rothaermel, F.T. (2003). The Performance of Incumbent Firms in the Face of Radical Technological Innovation. *Academy of Management Review*, 28 (2), pp. 257–274.
- Hochberg, Y. V. (2015). Accelerating Entrepreneurs and Ecosystems: The Seed Accelerator. *Innovation Policy and the Economy*, 16, pp. 25–51.
- Hochberg, Y. V., Kristen, K. & Kamath, K. (2013). U.S. Seed Accelerator Rankings. *Kellogg School of Management*, pp. 1–4.
- Holan, P.M. de & Phillips, N. (2004). Remembrance of Things Past? The Dynamics of Organizational Forgetting. *Management Science*, 50 (11), pp. 1603–1613.
- Horsch, J. (2003). *Innovations- und Projektmanagement: Von der strategischen Konzeption bis zur operativen Umsetzung*. Wiesbaden: Gabler Verlag.
- Huang, X., Hsieh, J.J.P.A. & He, W. (2014). Expertise dissimilarity and creativity: The contingent roles of tacit and explicit knowledge sharing. *Journal of Applied Psychology*, 99 (5), pp. 816–830.
- Huizingh, E.K.R.E. (2011). Open innovation: State of the art and future perspectives. *Technovation*, 31 (1), 2–9.
- Jackson, P. & Richter, N. (2017). Situational Logic: an Analysis of Open Innovation Using Corporate Accelerators. *International Journal of Innovation Management*, 21 (7), pp. 1–21.
- Kim, J.H. & Wagman, L. (2014). Portfolio size and information disclosure: An analysis of startup Accelerators. *Journal of Corporate Finance*, 29, pp. 520–534.
- Kim, J.Y.R. & Steensma, H.K. (2017). Employee mobility, spin-outs, and knowledge spill-in: How incumbent firms can learn from new ventures. *Strategic Management Journal*, 38 (8), pp. 1–42.
- Kogut, B. (1988). Joint Ventures: Theoretical and Empirical Perspectives. *Strategic Management Journal*, 9 (4), pp. 319–332.
- Kohler, T. (2015). Crowdsourcing-Based Business Models: How to Create and Capture Value. *California Management Review*, 57 (4), pp. 63–84.
- Kohler, T. (2016). Corporate Accelerators: Building bridges between corporations and startups. *Business Horizons*, 59 (3), pp. 347–357.
- Kollmann, T. & Kuckertz, A. (2010). Evaluation uncertainty of venture capitalists' investment criteria. *Journal of Business Research*, 63 (7), pp. 741–747.
- Kortum, S. & Lerner, J. (2000). Assessing the Contribution of Venture Capital to Innovation. *Source: The RAND Journal of Economics* *RAND Journal of Economics*, 31 (4), pp. 674–692.
- Kupp, M., Marval, M. & Borchers, P. (2017). Corporate Accelerators: fostering innovation while bringing together startups and large firms. *Journal of Business Strategy*, 38 (6), pp. 47–53.
- Leonard-Barton, D. (1992). Core capabilities and core rigidities: A paradox in managing new product development. *Strategic Management Journal*, 13, pp. 111–125.
- Lichtenthaler, U. (2009). Outbound open innovation and its effect on firm performance: Examining environmental influences. *R & D Management*, 39 (4), pp. 317–330.
- Lin, H.E., McDonough, E.F., Lin, S.J. & Lin, C.Y.Y. (2013). Managing the exploitation/exploration paradox: The role of a learning capability and innovation ambidexterity. *Journal of Product Innovation Management*, 30 (2), pp. 262–278.

- Lindemann, U. (2016). *Handbuch Produktentwicklung*. München: Carl Hanser Verlag.
- Liu, L., Jiang, Z. & Song, B. (2014). A novel two-stage method for acquiring engineering-oriented empirical tacit knowledge. *International Journal of Production Research*, 52 (20), pp. 5997–6018.
- Love, J.H., Roper, S. & Vahter, P. (2014). Learning from openness: The dynamics of breadth in external innovation linkages. *Strategic Management Journal*, 35 (11), pp. 1703–1716.
- Malek, K., Maine, E. & McCarthy, I.P. (2014). A typology of clean technology commercialization Accelerators. *Journal of Engineering and Technology Management*, 32, pp. 26–39.
- Manso, G. (2017). Creating incentives for innovation. *California Management Review*, 60 (1), pp. 18–32.
- Markham, S.K., Gentry, S.T., Hume, D., Ramachandran, R. & Kingon, A.I. (2005). Strategies and Tactics for External Corporate Venturing. *Research-Technology Management*, 48 (2), pp. 49–59.
- Mesquita, L.F., Anand, J. & Brush, T.H. (2008). Comparing the resource-based and relational views: Knowledge transfer and spillover in vertical alliances. *Strategic Management Journal*, 29 (9), pp. 913–941.
- Metten, B. (2017). Industrie-Hackathon Maschinenbau trifft digital kreative Startups. URL: [https://industrie40.vdma.org/documents/4214230/20768025/Hackathon\\_final\\_1506513362712.pdf/094f2090-8635-4fc7-ad88-0f7b87ae0873](https://industrie40.vdma.org/documents/4214230/20768025/Hackathon_final_1506513362712.pdf/094f2090-8635-4fc7-ad88-0f7b87ae0873) [last accessed 09.04.2018].
- Mian, S., Lamine, W. & Fayolle, A. (2016). Technology Business Incubation: An overview of the state of knowledge. *Technovation*, pp. 50–51, 1–12.
- Miller, L., Miller, R. & Dismukes, J. (2005). The Critical Role of Information and Information Technology in Future Accelerated Radical Innovation. *Information Knowledge Systems Management*, 5 (2), pp. 63–99.
- Napp, J.J. & Minshall, T. (2011). Corporate Venture Capital Investments for Enhancing Innovation: Challenges and Solutions. *Research-Technology Management*, 54 (2), pp. 27–36.
- Neyens, I., Faems, D. & Sels, L. (2010). The impact of continuous and discontinuous alliance strategies on startup innovation performance. *International Journal of Technology Management*, 52 (3-4), pp. 1–19.
- Nonaka, I. (1993). A Dynamic Theory of Organizational Knowledge Creation. *Organization Science*, 5 (1), pp. 14–37.
- Nonaka, I., Toyama, R. & Konno, N. (2000). SECI, Ba and Leadership: A Unified Model of Dynamic Knowledge Creation. *Long Range Planning*, 33 (1), pp. 5–34.
- Nonaka, I., von Krogh, G. (2009). Perspective—Tacit Knowledge and Knowledge Conversion: Controversy and Advancement in Organizational Knowledge Creation Theory. *Organization Science*, 20 (3), pp. 635–652.
- Nooteboom, B., Van Haverbeke, W., Duysters, G., Gilsing, V. & van den Oord, A. (2007). Optimal cognitive distance and absorptive capacity. *Research Policy*, 36 (7), pp. 1016–1034.
- O'Connor, G.C. (1998). Market Learning and Radical Innovation: A Cross Case Comparison of Eight Radical Innovation Projects. *Journal of Product Innovation Management*, 15 (2), pp. 151–166.
- O'Connor, G.C. & Rice, M.P. (2001). Opportunity Recognition and Breakthrough Innovation in Large Established Firms. *California Management Review*, 43 (2), pp. 95–116.
- O'Reilly, C.A., Harrell, J.B. & Tushman, M.L. (2009). Organizational Ambidexterity: IBM And Emerging Business Opportunities. *California Management Review*, 51 (4), pp. 75–99.
- Oerlemans, L.A.G., Knobens, J. & Pretorius, M.W. (2013). Alliance portfolio diversity, radical and incremental innovation: The moderating role of technology management. *Technovation*, 33 (6–7), pp. 234–246.
- Okamuro, H., Kato, M. & Honjo, Y. (2011). Determinants of R&D cooperation in Japanese start-ups. *Research Policy*, 40 (5), 728–738.
- Panico, C. (2017). Strategic interaction in alliances. *Strategic Management Journal*, 38 (8), pp. 1646–1667.
- Park, J.H. & Bae, Z.T. (2018). When are 'sharks' beneficial? Corporate venture capital investment and startup innovation performance. *Technology Analysis and Strategic Management*, 30 (3), pp. 324–336.
- Pauwels, C., Clarysse, B., Wright, M. & Van Hove, J. (2016). Understanding a new generation incubation model: The Accelerator. *Technovation*, 50–51, pp. 13–24.
- Perkmann, M. & Walsh, K. (2007). University-industry relationships and open innovation: Towards a research agenda. *International Journal of Management Reviews*, 9 (4), pp. 259–280.
- Peters, L., Rice, M. & Sundararajan, M. (2004). The Role of Incubators in the Entrepreneurial Process. *The Journal of Technology Transfer*, 29 (1), pp. 83–91.
- Platman, K. (2004). „Portfolio careers“ and the search for flexibility in later life. *Work, Employment and Society*, 18 (3), pp. 573–599.
- Popadiuk, S. & Choo, C.W. (2006). Innovation and knowledge creation: How are these concepts related? *International Journal of Information Management*, 26 (4), pp. 302–312.
- Radojevich-Kelley, N. & Hoffman, D.L. (2012). Analysis of Accelerator Companies: An Exploratory Case Study of Their Programs, Processes, and Early Results. *Small Business Institute Journal*, 8 (2), pp. 54–70.
- Ramaswamy, V. & Ozcan, K. (2018). What is co-creation? An interactional creation framework and its implications for value creation. *Journal of Business Research*, 84, pp. 196–205.
- Richter, N., Jackson, P. & Schildhauer, T. (2018). Outsourcing creativity: An abductive study of open innovation using Corporate Accelerators. *Creativity and Innovation Management*, 27 (1), pp. 69–78.
- Robinson, D.F. (2010). The co-evolution of business Incubators and national Incubator networks in emerging markets. *Journal of Technology Management and Innovation*, 5 (3), pp. 1–14.
- Saebi, T. & Foss, N.J. (2015). Business models for open innovation: Matching heterogeneous open innovation strategies with business model dimensions. *European Management Journal*, 33 (3), pp. 201–213.
- Sandberg, B. & Aarikka-Stenroos, L. (2014). What makes it so difficult? A systematic review on barriers to radical innovation. *Industrial Marketing Management*, 43 (8), pp. 1293–1305.

- Saunders, M., Lewis, P. & Thornhill, A. (2012). *Research Methods for Business Students*. London: Pearson Education.
- Schneider, S. & Spieth, P. (2013). Business Model Innovation: Towards an Integrated Future Research Agenda. *International Journal of Innovation Management*, 17 (1), pp. 1–34.
- Schumpeter, J. A. (1934). *The Theory of Economic Development. An inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. Cambridge: Harvard University Press.
- Schumpeter, J. A. (1942). *Capitalism, Socialism and Democracy*. New York: Harper & Row.
- Shah, C.M., Zegveld, M. a & Roodhart, L. (2008). Designing Ventures that Work. *Research-Technology Management*, 51 (2), pp. 17–25.
- Shane, S. (2001). Technological Opportunities and New Firm Creation. *Management Science*, 47 (2), pp. 205–220.
- Sheng, M.L. & Chien, I. (2016). Rethinking organizational learning orientation on radical and incremental innovation in high-tech firms. *Journal of Business Research*, 69 (6), pp. 2302–2308.
- Simon, H.A. (1969). *The Sciences of the Artificial*. Cambridge: The MIT Press.
- Soltani, P.M., Pessi, K., Ahlin, K. & Wernerer, I. (2014). Hackathon—A Method for Digital Innovative Success: A Comparative Descriptive Study. *Proceedings of the European Conference on Information Management & Evaluation*, pp. 367–374.
- Sosna, M., Treviño-Rodríguez, R.N. & Velamuri, S.R. (2010). Business model innovation through trial-and-error learning: The naturhouse case. *Long Range Planning*, 43 (2–3), pp. 383–407.
- Spieth, P., Schneckenberg, D. & Ricart, J.E. (2014). Business model innovation - state of the art and future challenges for the field. *R & D Management*, 44 (3), pp. 237–247.
- Stringer, R. (2000). How to Manage Radical Innovation. *California Management Review*, 42 (4), pp. 70–88.
- Su, C. & Yang, H. (2017). Supplier-buyer relationship management in marketing and management research: An area for interdisciplinary integration. *Journal of Business Research*, 78, pp. 180–183.
- Titus, V., House, J.M. & Covin, J.G. (2017). The Influence of Exploration on External Corporate Venturing Activity. *Journal of Management*, 43 (5), pp. 1609–1630.
- Tong, T.W. & Li, Y. (2011). Real Options and Investment Mode: Evidence from Corporate Venture Capital and Acquisition. *Organization Science*, 22 (3), pp. 659–674.
- Trong Tuan, L. (2012). Behind knowledge transfer. *Management Decision*, 50 (3), pp. 459–478.
- Trott, P. & Hartmann, D. (2009). Why open innovation is old wine in new bottles. *International Journal of Innovation Management*, 13 (4), pp. 715–736.
- Tushman, M.L. & Anderson, P. (1986). Technological Discontinuities and Organizational Environments. *Administrative Science Quarterly*, 31 (3), pp. 439–465.
- Vahs, D. & Burmester, R. (2005). *Innovationsmanagement: von der Produktidee zur erfolgreichen Vermarktung*. Stuttgart: Schäffer-Poeschel Verlag.
- Vanhaverbeke, W., Van de Vrande, V. & Chesbrough, H. (2008). Understanding the Advantages of Open Innovation Practices in Corporate Venturing in Terms of Real Options. *Creativity and Innovation Management*, 17 (4), pp. 251–258.
- Wadhwa, A. & Kotha, S. (2006). Knowledge creation through external venturing: Evidence from the telecommunications equipment manufacturing industry. *Academy of Management Journal*, 49 (4), pp. 819–835.
- Wadhwa, A., Phelps, C. & Kotha, S. (2016). Corporate venture capital portfolios and firm innovation. *Journal of Business Venturing*, 31 (1), pp. 95–112.
- Weiblen, T. & Chesbrough, H.W. (2015). Engaging with startups to enhance corporate innovation. *California Management Review*, 57 (2), pp. 66–90.
- West, J. & Bogers, M. (2014). Leveraging external sources of innovation: A review of research on open innovation. *Journal of Product Innovation Management*, 31 (4), pp. 814–831.
- Wiggins, R.R. & Ruefli, T.W. (2005). Schumpeter's Ghost: Is Hypercompetition making The Best Of Times Shorter? *Strategic Management Journal*, 26, pp. 887–911.
- Wolfe, R., Wright, P.M. & Smart, D.L. (2006). Radical HRM innovation and competitive advantage: TheMoneyball story. *Human Resource Management*, 45 (1), pp. 111–145.
- Wright, R. & Ken, M. (1998). Venture capital and private equity: a review and synthesis. *Journal of Business Finance & Accounting*, 25 (5-6), pp. 521–570.
- Yin, R. K. (2009). *Case study research: Design and methods*. Thousand Oaks: Sage.
- Zott, C., Amit, R. & Massa, L. (2011). The business model: Recent developments and future research. *Journal of Management*, 37 (4), pp. 1019–1042.