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Relationship-building in the post-acceleration phase of corporate accelerators: empirical evidence from Germany

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Abstract

Corporate accelerators have become a relevant intermediary that connects startups and corporations. Their strategic goal is to establish close relationships between startups and corporations that add value for both parties in the long term. While in principle startups go through an acceleration phase successfully, they may struggle to build meaningful relationships with the accelerator's corporate parent thereafter. In research, the post-acceleration phase and its challenges for corporations and startups has not been adequately addressed to date. Therefore, the goal of this article is to shed light on how corporations and startups collaborate after startups leave an accelerator programme, and which factors hinder successful relationship-building. Grounding on 21 corporate accelerator cases containing data from 99 semi-structured interviews with corporate accelerator managers and startup alumni of accelerator programmes, we present different forms of post-programme collaboration and outline obstacles of post-programme relationship-building. Our results emphasise a key role of business units in successful relationship-building and indicate legitimacy problems of accelerators within its corporate organisation. We also provide guidance for corporations, accelerators, and startups on how to increase the success of post-programme collaboration by demonstrating manifold challenges of post-programme collaboration and showing ways how to overcome them.

Keywords Corporate accelerator · Strategic collaboration · Relationship-building · Corporate venturing · Startup assistance programmes

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Introduction

Corporate accelerators are assistance organisations that support startups with valuable resources and services such as mentoring, office space and knowledge (Cohen & Hochberg, 2014), and strive to speed up startup development (Cohen et al., 2019; Richter et al., 2018). In doing so, they increase the likelihood of startups to survive and prosper (Cohen, Fehder, et al., 2019; Shankar & Shepherd, 2019). Corporate accelerators demonstrate large resource investments in practice (Global Accelerator Network, 2021; Shankar & Shepherd, 2019) and find increasing attention in academia (Crișan et al., 2019; Jackson et al., 2015).

Corporate accelerator programmes are sponsored and operated by one or more incumbent companies (Moschner et al., 2019). They are designed, and function, similarly to other types such as business, seed or startup accelerators (Richter et al., 2018), but mainly differ with regards to their central purpose, which is matching the accelerator programme's sponsoring corporation with participating startups to enable long-term strategic partnerships (Clarysse et al., 2015; Kanbach & Stubner, 2016; Kohler, 2016; Prexl et al., 2019; Urbaniec & Żur, 2020). Contrary to a general perception that many newly-launched innovation initiatives in large companies are doomed to fail (Kirsner, 2017), corporate accelerator programmes have proved to be a promising mechanism to realise corporate innovation goals through startup collaboration (Gutmann et al., 2019; Prexl et al., 2019; Shankar & Shepherd, 2019). Hence, corporate accelerators are nowadays found in many large companies (Weiblen & Chesbrough, 2015) and family firms (Pielken & Kanbach, 2020).

Although corporate accelerators are regarded as an important mechanism for corporate innovation, they are far from being optimally organised to best fulfil their intermediary role. In practice, the focus has recently shifted from building new accelerator programmes to reorganising existing ones (Gutmann et al., 2020). Extant accelerator programme deficiencies result in steady programme diversification and restructuring (Moschner et al., 2019). Opportunities for improvement are especially large when it comes to forming value-adding partnerships between corporations and startups: merely every fourth corporate innovation initiative meets collaboration expectations (Prats & Siota, 2019) and approximately every second corporation and startup are dissatisfied with their partnerships (Brigl et al., 2019).

Furthermore, from an academic perspective, discussion on the efficacy of accelerator programmes is diverse (Battistella et al., 2017; Breznitz & Zhang, 2019; Del Sarto et al., 2020; Goswami et al., 2018; Hochberg, 2016; Hoffman & Radojevich-Kelley, 2012; Lukosiute et al., 2019; Miles et al., 2017; Miller & Bound, 2011; Moschner et al., 2019; Smith et al., 2015). Literature is still indecisive on the extent to which accelerators impact startups. Scholars investigating the efficacy of accelerator programmes report mixed results. For instance, Yu (2020) concludes that while accelerators can sometimes be a valuable feedback partner to startups, there are cases where accelerators do not provide any value or negatively affect startup development. Hallen et al. (2020) come to a similar conclusion, noting that notwithstanding accelerators' mostly positive effects on startups, some accelerators had a negative impact on startup acceleration.

To improve upon these inconclusive results from research and practice, we need to gain a better comprehension of accelerator outcomes (Yu, 2020). In addition to the general need for a more thorough understanding of accelerator mechanisms (Goswami et al., 2018; Hallen et al., 2020; Shankar & Clausen, 2020), one central reason for this inconclusiveness is a lack of in-depth understanding of the post-acceleration phase: the period after a startup officially graduates from an accelerator programme (Kuebart & Ibert, 2019). Neglecting the post-acceleration phase prevents scholars and practitioners from comprehensively identifying and increasing the efficacy of accelerators. For corporate accelerators, the post-acceleration phase is of extraordinary strategic relevance for both startups and corporations. Corporate accelerator programmes last for a few weeks or months (Shankar & Shepherd, 2019), but it typically takes eight to ten months for a corporate-startup collaboration to become fully established (Lindgreen et al., 2015) and numerous years for an accelerator to produce value-adding results (Lall et al., 2013). Hence, after a startup leaves the corporate accelerator programme, a collaboration is still vague and has to be more accurately defined and formed. Consequently, the period after an accelerator programme ends is the crucial phase when corporations and startups must leverage the collaboration potential created during the programme to establish a long-term relationship. Accordingly, the post-acceleration phase is an essential cornerstone that greatly impacts the value contribution of corporate accelerator programmes.

In this article, we examine in depth the post-acceleration phase of corporate accelerator programmes. We derive common forms of corporate-startup collaboration, and present obstacles that hinder effective post-programme relationship-building. Our study thereby aims to shed light on the so-far-neglected post-acceleration phase and to emphasise its relevance. The insights generated should contribute to a more holistic understanding of accelerator practices and their impact on startups (Battistella et al., 2017; Cohen & Hochberg, 2014). With this, we respond directly to Mariño-Garrido et al.'s (2020) call to analyse the phase after the actual accelerator programme comes to an end, and Shankar and Shepherd's (2019) suggestion to further unpack post-acceleration into stage-specific tasks.

This article is structured in six parts. Subsequent to this introduction, Sect. 2 sets the theoretical foundation for this study. Section 3 covers the methodological research approach. The study's results are presented in Sect. 4, followed by a discussion of results in Sect. 5. Lastly, Sect. 6 concludes the article.

Accelerator characteristics and the corporate accelerator mechanism

Since the emergence of the first of its kind in 2005 (Cohen, Fehder, et al., 2019), accelerators have evolved into an important entrepreneurial support organisation (Bliemel et al., 2019; Oh et al., 2022) within entrepreneurial ecosystems (Malecki, 2018). They constitute an intermediary that enables and coordinates close collaboration between different actors such as startups, companies, universities, or governments (Clayton et al., 2018) within a short and usually predefined programme timeframe (Moschner et al., 2019; Qin et al., 2019). Accelerators are relevant for the emergence and growth of new companies (Canovas-Saiz et al., 2021) and the support of underrepresented entrepreneurs such as female founders (Dams et al., 2022).

Overall, the impact of accelerators spans from shaping entrepreneurial communities to affecting economies and societies across countries (Brown et al., 2019; Drori & Wright, 2018; Kuebart & Ibert, 2019). Moreover, accelerators are regarded as a key player that advances innovative technologies (Fink et al., 2022; Mian et al., 2016) and enables business model innovation (Urbaniec & Żur, 2020). Hence, accelerators are an important vehicle for driving digital transformation endeavours in organisations (Kanbach et al., 2022).

The majority of accelerators targets startups independent of their industry, while some other accelerators purposefully focus on specific sectors such as life science (Kulkov et al., 2021), supply chain management (Fink et al., 2022), or FinTech (Harris, 2021). Compared to other startup support organisations such as innovation labs (Fecher et al., 2020), incubators (Roessler & Velamuri, 2015), hackathons (Kitsios & Kamariotou, 2022), or venture capital (Bugl et al., 2022), accelerators can be delimited by the content and extent of support services (Kulkov et al., 2021), programme length (Beyhan et al., 2021) and maturity of targeted startups (Veit et al., 2021). In addition, accelerators offer specific support to startups in terms of product-market fit improvements, fast market entries and business scalability (Beyhan et al., 2021; Shankar & Clausen, 2020).

There exist different ways of classifying accelerators, e.g. in non-profit and for-profit accelerators (Oh et al., 2022). However, scholars commonly use two criteria to categorise accelerators on two levels. On the first level, accelerator *types* are delineated by their ownership characteristics. Frequently mentioned accelerator types are business accelerators (González-Uribe & Reyes, 2021; Kulkov et al., 2021) owned by private institutions, university accelerators (Breznitz & Zhang, 2019; Byrd et al., 2017) owned by universities, and corporate accelerators (Joseph & Cashin, 2021; Mahmoud-Jouini et al., 2018) owned by private companies. Thereof, corporate accelerators constitute the largest accelerator type in practice (Fink et al., 2022). On the second level, accelerator *subtypes* are distinguished by their differing programme objectives and programme design configurations (Pauwels et al., 2016). For instance, Veit et al. (2021) identified for the type corporate accelerator five subtypes: Welfare Stimulator, Test Laboratory, Value Chain Optimiser, Value Chain Extender and Dealflow Maker. All five subtypes possess diverse objectives and their programmes are organised differently. As the goal of this study is to examine the post-acceleration phase of corporate accelerators, we therefore focus on the corporate accelerator type and its mechanism in the following.

In general, a profound understanding of new phenomena such as corporate accelerators requires an adequate consideration of theoretical foundations as well as an empirically grounded analysis of their mechanism.

In accelerator research, theoretical foundations are rather scarce to date (Crișan et al., 2019; Fink et al., 2022). Thus, further attention is needed to advance this research stream (Shankar & Clausen, 2020). Only recently, scholars started to integrate reasonable theoretical lenses into accelerator research. Articles dealing with accelerators apply for instance knowledge communities and boundary spaces (Caccamo & Beckman, 2022), community capital (Bliemel et al., 2019), signaling theory (Beyhan et al., 2021), activity system (Urbaniec & Żur, 2020), resource-based view (Uhm et al.,

2018), human capital theory (Dams et al., 2022), programme theory (Richter et al., 2018), or bounded rationality (Cohen et al., 2019).

In addition to the need for well-founded theoretical underpinnings, it is critical to get an in-depth understanding why a corporate accelerator exists (corporate objectives) and how it functions (accelerator process) to obtain a comprehensive picture of the corporate accelerator mechanism.

Corporate accelerators are set up to fulfil either strategic or financial primary objectives of the corporate parent (Kanbach & Stubner, 2016; Kohler, 2016; Nesner et al., 2020; Shankar & Shepherd, 2019). Strategic motivations can be manifold. For example, the corporate parent may wish to understand recent market dynamics, test new business ideas, develop new products and business models, or transform its corporate culture (Kanbach & Stubner, 2016; Nesner et al., 2020). To achieve these targets, the accelerator needs to ensure that between the startups and the corporation there is a strategic fit that has the potential to convert into a strategic partnership later on (Mahmoud-Jouini et al., 2018). Compared to strategic objectives, financial objectives are more straightforward. Similar to business accelerators (Kanbach & Stubner, 2016; Shankar & Shepherd, 2019) and venture capital firms (Nesner et al., 2020), the corporation becomes a shareholder of promising startups and tries to make them more valuable through its support during and after the programme (Moschner et al., 2019). By using an investment portfolio approach, the corporation spreads the risk of misinvestment in case of startup failure, and thereby expects to receive above-average financial returns (Kohler, 2016; Nesner et al., 2020).

Overall, studies on corporate accelerators show that only a minority of corporate accelerator programmes are financially-orientated, while most programmes pursue strategic objectives (Kanbach & Stubner, 2016; Kohler, 2016).

In recent years, literature has additionally begun to examine accelerators from a process perspective (Ghorashi & Asghari, 2019; Kuebart & Ibert, 2019; Nesner et al., 2020; Prexl et al., 2019; Shankar & Shepherd, 2019), a much-needed lens to explain their underlying mechanism (Shankar & Clausen, 2020). Articles which take a process view differ in their number of process steps, ranging from three (Kuebart & Ibert, 2019) to six (Ghorashi & Asghari, 2019). The majority of those articles refer to post-acceleration as an explicit process step (Ghorashi & Asghari, 2019; Kuebart & Ibert, 2019; Nesner et al., 2020; Shankar & Shepherd, 2019).

Shankar and Shepherd (2019) introduce a corporate accelerator process model consisting of the three distinct stages *sourcing selection*, *acceleration* and *community formation*. They indicate that the latter stage consists of post-programme activities such as creating partnerships, conducting further product testing or gaining access to customers. Nesner et al. (2020) more clearly emphasise the *post-acceleration phase* by using this specific name. They categorise post-acceleration as the third step of the overall corporate accelerator process, after *pre-acceleration*, the period before an accelerator programme starts, and *acceleration*, the actual programme timeframe that usually ends with a closing event (e.g. demo day). When the programme has terminated, alumni startups are assessed in terms of further collaboration potential with the corporation and, in the case of a positive evaluation, the relationship continues and intensifies into a long-term partnership.

Research design and methodology

Since the goal of this study is to discover novel insights on different forms of corporate-startup collaboration and obstacles of relationship-building in the post-acceleration phase of corporate accelerators, we followed an explorative grounded theory research design (Corbin & Strauss, 2015; Denzin & Lincoln, 2011; Thornberg & Charmaz, 2014). We used numerous cases to ensure a rich and diverse set of data (Silverman, 2016). This is especially relevant given that accelerators are a phenomenon that lacks a thorough understanding; therefore, theory still has to be generated (Yin, 2014). We collected and analysed our data according to the inductive coding scheme of Gioia et al. (2013), which facilitated a rigorous transformation of diverse observations into generalisable statements. In the following sub-sections, the methodological approach is elaborated in more detail.

Sampling

An accurate selection of cases is important, as it substantially impacts data interpretation and hence the quality of research results. Therefore, we applied a carefully-considered set of criteria that determined the relevant sample.

First, we searched for startup assistance programmes that qualified as accelerator programmes. To identify such programmes, we grounded our assessment on the differentiating characteristics of accelerator programmes (Cohen, Fehder, et al., 2019; Isabelle, 2013; Shankar & Clausen, 2020).

Second, since the regional context has a significant influence on entrepreneurial innovation efforts (Autio et al., 2014) and the type of accelerator sponsor determines the programme's mode of operation (Colombo et al., 2018), we focused on programmes sponsored and run by a commercial, for-profit company (Dempwolf et al., 2014) within Germany to ensure comparability within our sample.

Third, our sample consists of corporate accelerator programmes with strategic primary objectives. We intentionally did not include financially-orientated programmes where the corporate parent's main objective is to invest in startups, because in the post-acceleration phase, startups are transferred into the corporate venture capital units, resulting in less intense and more standardised relationships with the corporate parent (Nesner et al., 2020).

Fourth, we focused on outward-orientated programmes that have an external locus of opportunity (Kanbach & Stubner, 2016). From an open innovation perspective, this corresponds to an outside-in process where a corporation primarily collaborates with external startups (Enkel et al., 2009; Nesner et al., 2020). Conversely, we did not consider programmes that have a main focus on accelerating internal ideas (Kanbach & Stubner, 2016), which would have resulted in limited information on post-programme corporate-startup relationships.

Case selection was performed in two steps. We initially identified relevant cases through desk research (e.g. corporate websites, market studies) by applying our sample criteria. Subsequently, we contacted accelerator managers and arranged interviews. Where a positive response was received, we included the corporate accelerator programme in our sample. In total, our final sample contains 21 corporate accelerator

cases. These cases were chosen because they fitted our sample criteria and were adequately accessible for us to gather a sufficient amount of data. Sample demographics are portrayed in Table 1. All cases were anonymised and labelled as, for example, "CA1" (corporate accelerator number one). 20 cases represent currently active programmes, while in one case the programme was closed directly before the interview was conducted. Even so, we kept this case in our sample due to the valuable information it offered, especially on the obstacles of a post-acceleration phase.

Data collection and analysis

For data collection and analysis, we performed the method of Gioia et al. (2013). This method offers a systematic approach for rigorously analysing and interpreting collected data, and has already been applied in other corporate accelerator studies (Gutmann et al., 2020; Shankar & Shepherd, 2019).

The data collection process started with the development of an interview guideline for semi-structured interviews. We prepared questions and grouped them into four categories: motivation and expectations, accelerator role, post-programme collaboration, and programme output. We then set out to collect data. For data collection, we relied on multiple data sources, separated into primary and secondary data sources according to the value of information they were expected to offer.

The primary data sources consist of semi-structured interviews conducted with corporate accelerator and startup representatives. From the corporate accelerator side, we intended to perform an interview with at least one member of the accelerator's core team, which we were able to accomplish in all 21 cases. For the most of these, we were able to speak directly to the corporate accelerator's managing director. From the startup side, we mainly spoke to startup founders. In the majority of cases, we had a conversation with at least three startups per accelerator programme. With respect to a startup's status in the accelerator programme, we only spoke to accelerator programme alumni. Startups are considered alumni if they have passed the formal graduation day of the accelerator programme (Cohen, 2013; Shankar & Shepherd, 2019). For those startups, the programme has officially ended and they are now in the post-acceleration phase.

Secondary data sources reflect publicly-available information from corporate websites, presentations and news articles. Information from these sources mainly served the purpose of confirming and, in some cases, supplementing data from the interviews (Miles et al., 2014). Secondary sources were mostly accessed in order to prepare for an interview and to conduct a debriefing.

Overall, data collection was completed between May 2019 and April 2021. With an increasing amount of interviews and the associated information volume, we continually modified the interview guidelines to enrich existing data. Towards the end of data collection, we recognised that we had reached theoretical saturation (Glaser & Strauss, 1967); therefore, additional interviews led only to a marginal increase in new information. In total, data was collected from 99 interviews, of which 26 were performed with corporate accelerator representatives and 73 with startup representatives. The average interview length with corporate accelerators was 35 min, and with startups, 21 min. Interviews were conducted via telephone and recorded in English

or German. Recordings were transcribed and, in the cases of interviews in German, translated by the professional online transcription and translation platform Sonix. Finally, transcripts were reviewed by the authors and optimised in some instances of inaccuracy, such as syntax. This procedure resulted in a total number of 894 transcript pages, which built the foundation of subsequent data analysis.

To make sense of the data collected, we inductively and iteratively moved from raw data to general findings that met our research goals. Gioia et al.'s (2013) procedure for concept development guided us in identifying common forms of corporate-startup collaboration in the post-acceleration phase, as well as major obstacles of such relationships. In particular, data transcripts were first open coded and then reduced to statements that are relevant for our research purposes (first-order concepts). Resulting statements from the first round of analysis were then checked for patterns and summarised in second-order themes, which reflect specific forms and obstacles of corporate-startup collaboration. Eventually, related second-order themes were combined into more general constructs (aggregate dimensions). Transcripts were coded and the systematic data structure was created through the use of the qualitative data analysis software MAXQDA. Data structure is transparently presented in Fig. 1.

Results

In this section, we first present different forms of post-programme collaboration that we encountered during our research. Subsequently, we discuss common obstacles that hinder relationship-building between the corporation and startups. Thereby, we intend to "make extraordinary efforts to give voice to the informants […] and also to represent their voices prominently in the reporting of the research" (Gioia et al., 2013, p. 17). In this way, we aim to let the data speak for itself wherever appropriate.

Forms of post-programme collaboration

When graduating from the accelerator programme, startups in general face two fundamentally different situations: they either gain the chance to establish and intensify a partnership with the corporate parent, or they are not considered for further post-programme collaboration. In the latter case, a startup might be automatically out of scope for collaboration because there is no intention from the corporate parent or the startup to engage in a closer relationship; therefore, collaboration fades out after programme end. Similarly, the corporate parent might be interested in further collaboration, but it is currently not possible to engage in a relationship because the startup is unable to meet the corporate's expectations, or the corporate parent does not have the resources available for a closer partnership. Such startups are in principle eligible for a post-programme partnership, but are obliged to wait for the right window of opportunity to come.

Overall, from our sample including 73 startups, one in two startups were not in a relationship with the corporate parent after the programme's end. The other half of programme alumni were able to establish post-programme relationships: in most cases, corporations were open to engage in different forms of collaboration with start-

Table 1 Sample information

Accelerator case	Industry of corporate parent	Programme foundation year	Job title informants corporate accelerator	Job title informants startup	# of corporate accelerator interviews	# of startup interviews	Total interviews length
CA1	Telecommunications	2017	Managing Director Accelerator	CEO, Sales Manager	1	2	85 min
CA2	Telecommunications	2012	Managing Director Accelerator, Marketing Manager Accelerator	Founder, Co-Founder, CEO, CFO	2	6	193 min
CA3	Software	2017	Managing Director Accelerator, Accelerator Programme Manager	Founder, Co-Founder, CEO, Business Developer	2	5	178 min
CA4	Business Services	2018	Managing Director Accelerator	CEO	1	1	60 min
CA5	Retail	2016	Managing Director Accelerator	CMO	1	1	53 min
CA6	Software	2013	Accelerator Programme Manager	Founder	1	1	56 min
CA7	Retail	2015	Managing Director Accelerator	Co-Founder, CEO, Business Developer	1	3	80 min
CA8	Health Care	2015	Managing Director Accelerator, Accelerator Programme Manager	Founder, Co-Founder, CEO, CSO	2	9	264 min
CA9	Retail	2015	Managing Director Innovation Unit	Co-Founder, CEO	1	3	117 min
CA10	Media	2015	Chief Technology Officer	Founder	1	1	47 min
CA11	Business Services	2018	Managing Director Accelerator	Founder, Co-Founder, CEO, Business Developer	1	5	120 min
CA12	Energy	2013	Venture Development Manager	Founder, Co-Founder, CEO, CSO	1	5	123 min
CA13	Telecommunications	2012	Managing Director Accelerator, Marketing & Communication Manager	Co-Founder, CEO	2	3	137 min
CA14	Transportation & Logistics	2015	Managing Director Accelerator	Founder, Co-Founder, CEO, CTO	1	5	171 min
CA15	Transportation & Logistics	2016	Open Innovation Manager	CEO	1	1	66 min
CA16	Finance	2015	Deputy Managing Director Accelerator	Co-Founder	1	1	55 min
CA17	Agriculture	2016	Head of Innovation, Marketing & Communication Manager	Founder, Co-Founder, CEO, CMO	2	5	140 min

Table 1 (continued)

Accelerator case	Industry of corporate parent	Programme foundation year	Job title informants corporate accelerator	Job title informants startup	# of corporate accelerator interviews	# of startup interviews	Total interviews length
CA18	Health Care	2013	Chief Partnerships Manager	Founder, Co-Founder, CEO	1	4	102 min
CA19	Health Care	2017	Managing Director Accelerator	Founder, Co-Founder, CEO, Partnership Manager, Business Developer	1	5	179 min
CA20	Transportation & Logistics	2015	Managing Director Accelerator	Co-Founder, CEO, R&D Manager	1	3	103 min
CA21	Electrical Equipment	2018	Managing Director Accelerator	Founder, Co-Founder, CEO, CTO	1	4	130 min

Source: Own study

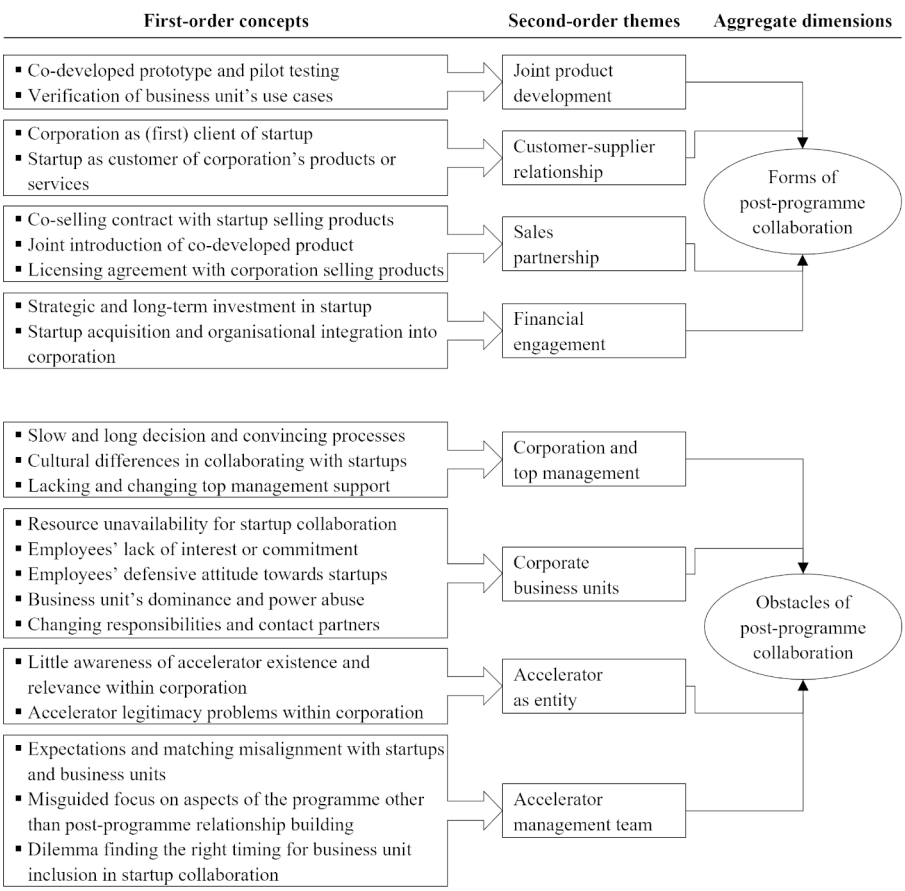

Fig. 1 Post-programme collaboration forms and obstacles. Source: Own study

ups depending on the individual situation, while only in exceptional cases did the corporate parent intentionally strive for just one specific collaboration form. In the following sub-section, we present four frequently-used forms of collaboration and explain them in more detail.

Joint product development

When it comes to intensifying collaboration with startups after accelerator programme end, business units may consider a joint product development. In some instances, the business unit and the startup co-develop a prototype, and subsequently conduct pilot tests to verify the solution's utility. The goal of this is to integrate the startup's solution in specific use cases of the business unit. This strong focus on pre-defined use cases serves the purpose of challenging a startup's ability to be a solution provider for the corporation, as well as unravelling further potential benefits of using the startup's solution. If the use case or pilot test are considered successful, business units might

decide to integrate the solution within the corporate's structures. Usually, updates on the product development progress happen via regular conversations (e.g. phone calls) between a personal contact from the business unit and the startup.

This form of collaboration is especially attractive for corporations that act in more technology-intense or regulated industries such as pharmaceutical or software, where product development and testing is naturally a lengthy process. One accelerator informant emphasises the relevance of working more intensely on the startup's solution together after programme end:

> *Nobody, or few people, are expecting big things to happen in three or four months […]. So that's why we have this demo date to show where we are. But then the process doesn't stop there. It's actually where it starts. (CA3)*

Customer-supplier relationship

Another common form of post-programme collaboration is a customer-supplier relationship. Such a relationship between the corporation and startup can work both ways. Hence, a corporation can become a startup's client and vice versa.

In most cases, the relationship occurs in the form that a corporation takes products or services from a startup. In this context, the corporation often becomes the first large customer of a startup. Either the corporation lists the startup's solution as an additional offering in its own product portfolio, and whenever an end customer purchases the product, the corporate uses the startup as an intermediary seller, or the corporation considers the startup as a solution supplier if it sees potential to optimise its organisation (e.g. by improving internal processes). This basic idea is summarised by an accelerator informant:

> *We always say that we want to be the first big customer of the startup, and they can perform practical tests upon us as a large corporation. (CA2)*

Collaboration might also evolve into a vendor relationship where a startup becomes the customer of a corporation. With intensifying collaboration, a startup might realise that it needs to purchase a component from the corporate to make its overall product or service offering work; hence, it becomes a client of the corporate. However, only few corporates intentionally strive for this form of collaboration. This situation is especially relevant to corporations that see a potential in selling their products and services to startups once they have become established companies and possess purchasing power.

Sales partnership

The ultimate goal for many corporations is to establish sales partnerships with startups. Therefore, both parties agree on a commercial follow-up project in the post-acceleration phase, with the joint intention to generate leads and revenues. For startups especially, a sales partnership represents additional sales channels. Corpora-

tions expect to become more attractive for their customers through combined solutions with startups, and seek to utilise startups to gain quick access or insight into new markets.

A joint go-to-market can manifest differently. First, the corporation and startup can sign a co-selling contract where the corporate provides the sales channels and does some form of business development for the startup and the startup sells its product to the corporate's customers. In such situations, the corporation usually takes a certain share of the startup's revenues or profits as financial compensation. To ensure that a startup delivers high-quality products, first it often needs to be certified by the corporation. Only then will the startup be permitted to approach the corporate's customers. Second, both parties might introduce a co-developed product to the public. For instance, the corporation sells a product to its customers that is supplemented with an attractive component from the startup, as an accelerator manager describes in detail:

> *We're adding an extra to these corporate clients by bringing them some really exciting fast-growth companies that we've spent a long time filtering and interviewing to select for the programme. (CA4)*

Third, some corporations want to partner with a startup, but at the same time they wish to market the product with their own brand. Therefore, they acquire the intellectual property or technology from the startup through a licensing agreement, and the startup profits financially from the corporation's additional revenues.

Financial engagement

In financially-orientated corporate accelerators, the primary objective is to invest in startups. However, for strategic-orientated accelerators, a financial engagement is only a possible and optional form of collaboration rather than a requirement. If the corporation engages in a startup for financial purposes, then the intent is strategic and long-term orientated, with the goal to financially strengthen the startup. A financial engagement is also an attractive option for corporations if a startup is expected to develop into a promising firm, but no other form of post-programme collaboration proved to be reasonable. Similarly, in specific cases, a corporation might decide to acquire the startup fully and integrate it into the corporate's organisation if the corporation and startup consider this measure to be the most promising for both parties. Financial support is usually provided in the form of a silent partnership or convertible loans, where the corporation voluntarily invests in the startup at its next financing round. In the case of a financial engagement by the corporation, startups collaborate with the corporation's strategic venture capital team that is helping startups to increase their valuation.

Although some corporations see a real value in financial post-programme engagement, a startup informant points out one negative aspect:

> *This kind of practice is not really efficient. When this kind of business is acquiring shares in a startup and they are just integrating everybody to the organisa-*

tion, at the end of the day they are replicating the problems that they have inside [the corporation] to this young organisation. (CA13)

Obstacles of post-programme collaboration

Engaging in post-programme collaboration does not automatically result in a fruitful and sustainable relationship between the corporation and startup. When both parties decide to enter a strategic partnership, they might face several obstacles that could severely impede their collaboration efforts. Our analysis demonstrates that obstacles concerning post-programme collaboration originate from four different clusters within the accelerator as well as its corporate parent. These clusters and their associated obstacles are presented in the next sections. In general, we could not identify any obstacle that is solely relevant for one specific collaboration form. Therefore, our results show that the presented obstacles might be present in all different forms of post-programme collaboration.

Corporation and top management

Engaging with a corporation usually entails coping with the typical challenges of a large organisation. In the specific situation of post-programme collaboration between startups and business units of an incumbent organisation, there are three main obstacles that may occur.

First, startups face a sudden change of pace when leaving the accelerator. Despite the willingness of both the startup and the corporation to intensify collaboration, the follow-up after the accelerator programme becomes much slower than during programme phase. A central reason is the long decision-making and convincing processes a startup has to undergo within the organisation, which can easily take one year or longer. This hurdle is reinforced by increasing slowness of decision-making as the involvement of higher-level individuals in corporate hierarchies is required. As a result, many startup informants complain that they have lost transition momentum after programme end. In one extreme case, 1.5 years after programme end the corporation and startup are still willing to establish a relationship and conversations are ongoing, but they are moving forward slowly and the exact form of collaboration is still unclear.

Second, the majority of corporate employees are culturally not ready to collaborate with startups. Large cultural discrepancies are revealed in working habits and mentality. For instance, startups grow by trial and error and see opportunities created by making mistakes, while corporate employees have a perfectionist manner of thinking, which makes it difficult for them to act agilely and accept failure as part of the development process.

Third, top management support is a key criterion to make employees understand that engaging with startups is of crucial importance for the corporation. However, backing may be absent or insufficiently communicated, or might change over time, as one accelerator informant expresses:

The collaboration got kicked off, but there was suddenly a strategy shift, and it was now not a priority any more. And then the startup had no project and stake any more. (CA2)

Corporate business units

In most cases, startups leaving the accelerator programme continue collaborating closely with a corporate business unit. Hence, business units represent a crucial factor for successful post-programme relationship-building between a corporation and startup. Even though business units are interested in startup collaboration, in reality, establishing a partnership with them is challenging for a startup for several reasons.

It lies in the nature of a large organisation to assign a pre-defined amount of investment budget to business units for a certain time period (e.g. one year). This implies that a business unit could have invested all its available money before it starts working with a startup. Thus, a business unit might not be able to finance post-programme projects with startups, which could in the worst case terminate a collaboration as experienced by a startup informant:

They already have everything allocated. And the earliest that they can engage with you is if they put you in the next year's plans, so maybe in one and a half years. (CA20)

In addition, several startups were missing basic interest and commitment from business units. Typically, employees have to fulfil their core business functions, and view a partnership as an additional effort for themselves without having direct returns. Hence, they prioritise operational tasks and assignments instead working with the startup with sufficient intensity to make the collaboration succeed. This lack of willingness to take ownership is occasionally combated through incentivisation measures such as bonus salaries or top-down directives by top management. However, even with top management support, business unit commitment cannot be taken for granted, as one startup informant describes when repeating a conversation with an employee from a business unit:

They say "It is not my business. It is not within my target for this year. I am not getting paid for making that work." And then you say "Okay, but your C-level members, they said they want us." Then they say "Well, they did not say it to me." (CA14).

Sometimes, business unit employees might also take a defensive attitude towards startups. They are afraid of becoming obsolete or getting eliminated by new business. Others struggle to deviate too much from their core product portfolio and show resistance against radical innovation. Additionally, some employees have an old-fashioned way of thinking: they perceive that something they don't do themselves is inappropriate ("not invented here") and it is difficult to convince them of other approaches ("we have always made it like this").

It may also occur that business units enforce their superior position in the relationship to control or steer startup behaviour. Startups reported that they were pushed towards the needs of the corporation, while the interests of the startup were neglected. In certain instances, the business units abuse their power to the disadvantage of startups. For example, the business unit may require a startup to bring its clients into the partnership, while the startup expected it to be the other way round: the startup provides the technology that the business unit doesn't have and the business unit gives access to some of its clients. But instead of a win-win situation, only the corporate partner profits from such a relationship. Business units might also utilise their knowledge superiority by including mandatory contract clauses that allow the transfer of a startup's extensive intellectual property rights. In those situations, startups may not even be aware of what they are signing due to their inexperience in collaborating with business partners. Such one-sided and dominant form of collaboration filled with demands rather than an equal dialogue might severely threaten a long-term and trustful post-programme relationship.

Moreover, startups might lose their relationship to the corporation if the setting of its cooperating business unit changes. This situation might occur when the business unit's director gets replaced and the new one no longer wants to collaborate with the startup, or the business unit is closed entirely so that the startup loses its partner. One frustrated startup informant described this fate:

> *My contact in the corporate was fired from the company, or he was let go in some mysterious and quick way. And what happened was that his successor, the guy that took his place, was not as excited about the product because it was not his project. So we stopped working. (CA9)*

Accelerator as entity

Challenges for relationship-building might not only arise from within the corporation, but in addition, specific accelerator characteristics can make it difficult for startups to establish a long-lasting partnership with the corporation.

Since an accelerator is just one of numerous entities of the corporation and has a very specific focus on working with startups, many people in the organisation do not know about the accelerator or are not familiar with its purpose. Often, the accelerator programme is initiated by the central office, but it is not widely recognised by business units which might be interested in collaborating with startups. Therefore, the challenge in a large organisation is to make corporate employees aware of the accelerator and to communicate the values of engaging with startups through the accelerator, that is, for the accelerator to market itself intensely within the corporation. This lack of accelerator publicity is criticised by a startup informant:

> *What they need to keep doing and improving is definitely the internal marketing of this so that people know about us. It is a big company and you never know who wants to work with you. There should be more activities. (CA8)*

Another frequent obstacle relates to the acceptance of the accelerator as an important corporate entity. Accelerators normally possess little power to control corporate business units, and they struggle to persuade them to act in the best interest of all collaborating parties. In addition, most accelerators have existed for five years or less. Since it takes time to build a good reputation, many accelerators still lack standing within the organisation. As a result of the low acceptance of the accelerator within the corporation, business units tend to replicate steps that a startup has already gone through in the accelerator programme, which slows down the progress of collaboration. Furthermore, accelerators have difficulties properly connecting all important stakeholders that should be involved in post-programme collaboration to increase the likelihood of successful relationship-building.

Accelerator management team

The connection between an accelerator management team and startups usually does not cease abruptly at programme end. The accelerator team also stays involved in supporting startups to a certain extent in the post-acceleration phase. Hence, actions performed by the accelerator team also bear the risk of negatively impacting relationship-building.

In particular, an accelerator team faces the challenge of aligning expectations of startups and business units on post-programme collaboration. Some startup alumni did not know what to expect after the programme was completed, as the accelerator team had communicated little or no basic information on how the collaboration would continue. Others assumed that they would make a contractual agreement with business units on further collaboration by the end or shortly after the programme, which in many cases did not happen. Similarly, an accelerator team may not properly align a business unit's perception on how much they can expect from startups. Consequently, in many cases lasting relationships were not established, as the startup couldn't satisfy the needs of a business unit. For instance, startups offered an immature technology or could not meet the corporation's quality standards; the startup's solution was incompatible with the overall solution of the business unit; or startups were incapable of making a leap from piloting to large-scale commercialisation within a short timeframe. Misalignment of expectations most often comes to light when a partnership between startups and the corporation intensifies after programme end. Therefore, it is crucial for accelerator management to start to discuss and set post-programme collaboration expectations earlier in the accelerator process, before it is too late to bring startups and business units into alignment.

Additionally, in some instances, accelerator management teams overlook the relevance of relationship-building. They focus too much on other programme components, such as training or mentoring, instead of supporting startups in the areas in which they most need assistance: connections with potential collaboration partners from the corporation, or strengthening of existing relationships. One indication of misguided goal-alignment may be found by reviewing the KPIs of an accelerator team. If accelerator management is primarily evaluated by its performance on activities limited to the programme, but not the main objective of establishing meaningful relationships with the corporation, then the behaviour of the accelera-

tor team will automatically move away from supporting startups in post-programme relationship-building.

Finally, accelerator teams are confronted with the dilemma of finding the right timing for business units to contact startups. The challenge is to give startups the safe space to develop ideas freely and to grow, but at the same time, for startups to receive guidance from business units on how to serve their needs, which is a prerequisite of establishing long-term relationships. Therefore, accelerator managers are still looking for an ideal strategy of when and how they can most successfully couple business units with startups. While most accelerators include business units early in the accelerator process (during the selection or acceleration phase), others decide to involve them at the end of the accelerator programme. An accelerator informant illustrates this dilemma:

> *On the one hand, the earlier you involve [business units], the smaller ideas are thought […]. On the other hand, great ideas don't help us that are thought big, but will never be implemented. And this is the balancing act in which we're in. (CA16)*

Discussion

Contribution to literature

We provide, to the best of the author's knowledge, the first study that examines post-acceleration in depth as one central accelerator process step. Our findings emphasise the relevance of the post-acceleration phase for corporate accelerators, and contribute to a currently incomplete understanding of accelerator mechanisms (Goswami et al., 2018; Hallen et al., 2020; Shankar & Clausen, 2020). We also add to the ongoing discussion on accelerator efficacy (Hallen et al., 2020; Yu, 2020) and fill the lack of research on corporation-startup partnerships (Das & He, 2006) and their challenges (Urbaniec & Żur, 2020) by extending current knowledge on their collaboration (Kohler, 2016). Furthermore, we take information from accelerators and startups into equal consideration. In doing so, we enhance prior research that is primarily one-sided (Shankar & Clausen, 2020).

Our findings especially indicate that business units possess a superior position within the organisation, which they assert to control startups in favour of their own needs. In such settings, an accelerator should ideally act in the post-acceleration phase as the promoter of and buffer for a startup, greatly mitigating disadvantages suffered by the startup due to being new and small (Freeman et al., 1983; Stinchcombe, 1965; Stuart, 2000). However, our study results point out that corporate accelerators face extensive legitimacy problems within the organisation that impede better startup support in the post-acceleration phase, even though accelerator legitimacy is a key success factor for corporate accelerators to support startups in building lasting relationships with the corporation. While the accelerator can mainly act autonomously in the acceleration phase, decisions post-acceleration are predominantly made by

business units, with a comparatively low degree of accelerator involvement. Hence, our findings add to existing research that has found legitimacy issues being mainly prevalent in startups (Ahlstrom & Bruton, 2001; Alvarez & Barney, 2001; De Groote & Backmann, 2020; Hite & Hesterly, 2001; Human & Provan, 2000), but not in accelerators.

Contribution to practitioners

Based on insights with regards to post-programme collaboration and accompanying challenges, we derive implications that corporate employees and accelerator managers, as well as startups, should be aware of when forming valuable and long-lasting corporate-startup relationships.

For corporations, our findings give guidance to managers within business units on how to improve startup collaboration. Specifically, these managers frequently lack sufficient commitment as well as a clear strategy and interaction structure with startups (Gutmann et al., 2020). In principle, corporations do not face an absence of collaboration opportunities, but they are confronted with major challenges when attempting to make relationships with startups successful. Even though top management might encourage relationship-building with startups, business units will find a way to terminate such partnerships if they do not see the value of post-programme collaboration. Therefore, in addition to the support from top management (Prats & Siota, 2019), the corporation primarily has to ensure co-operation from business units to guarantee that startup collaboration succeeds. Moreover, the entire corporation, especially business units, must understand and internalise that the accelerator is an important entity, which can impact relationship-building positively after programme end. To overcome the accelerator's legitimacy problems within the corporation, the corporate parent should enable the accelerator unit to enforce episodic power (Lawrence et al., 2005).

For accelerators, our findings show that a considerable number of accelerators have not fully understood the relevance of their role in the post-acceleration phase. Many accelerators follow KPIs centred around the accelerator programme, such as startup satisfaction from programme participation or startups dropping out of the programme. However, such a focus does not relate to the actual goal of establishing partnerships between startups and the corporate parent after programme end. As a result, accelerators are mainly actively engaged with startups in the acceleration phase, but then take a passive position during post-acceleration by handing over startup collaboration to business units almost entirely. We propose that accelerator behaviour should move from a programme-specific to a relationship-specific focus. To increase relationship-building success, corporate accelerators need to take over a more active role in the post-acceleration phase. For instance, startup-corporate alignment should be triggered and coordinated by the accelerator throughout all phases of an accelerator programme cycle.

For startups, research results suggest that most relationships fail, or do not get established, due to misaligned expectations about post-programme collaboration. Therefore, it is vital for startups to understand the corporation's post-programme relationship expectations and align them with their own. Startups should proactively

request this information from the accelerator before participating in the programme and should continuously check on its validity since the corporate focus might change over time.

Overall, having a system of transparent roles clearly assigned to each party involved in the post-acceleration process might mitigate the present obstacles of collaboration, thus enabling more effective post-programme collaboration. For instance, introducing a deliberate decision process on how to continue after acceleration can guide corporate units, accelerators, and startups to align expectations and move forward jointly towards establishing long-term relationships.

Limitations and future research

Limitations of our study primarily result from our sample selection. First, we intentionally limited our data to corporate accelerator programmes in Germany. While the corporate accelerator landscape in Germany is large and growing, it is still reasonable to extend the scope towards other regions in the world to understand the relevance of contextual factors from different entrepreneurial ecosystems. Second, our study focuses on accelerators sponsored and operated by corporations. Corporate accelerators represent a relevant actor within the ecosystem. However, there are other important accelerator types, such as university or business accelerators, which might use other forms of collaboration and might face different challenges than those which are present in corporate accelerators. Therefore, we encourage future research to complement our findings by considering other accelerator types. Third, our sample only includes strategic-orientated corporate accelerators. As another subgroup of corporate accelerators, financially-orientated corporate accelerators function differently in terms of post-programme collaboration due to the distinct needs of alumni startups and parent companies. Therefore, future research may generate additional insights from further corporate accelerators with other primary objectives.

Conclusion

Corporate accelerators are continuously improving their programme set-up to more effectively fulfil their strategic purpose of bringing together corporate units with startups and forming prospering partnerships. In this context, the post-acceleration phase is the crucial time when collaborations intensify and their outcomes eventually determine the success of accelerator programmes. Drawing on an extensive qualitative dataset based on 99 interviews, we show various challenges of the post-acceleration phase on different organisational levels. Our study emphasises the need for practitioners to reconsider current practices and focus on what really matters for corporate accelerators: to establish a long-term and value-adding relationship between corporations and startups. In addition, we encourage scholars to broaden their view on accelerators by shifting from primarily focusing on the accelerator programme itself towards taking a process perspective, which should include the so-far-neglected post-acceleration phase. Taking a more holistic perspective can help scholars to bet-

ter examine accelerator efficacy. With our explorative work, we hope to contribute to a better understanding of the corporate accelerator phenomenon.

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