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ABSTRACT

In response to convergent and dynamic market developments, established firms use corporate accelerators to open their innovation processes to start-ups. Research on this strategic open innovation approach is gaining importance, but it remains scarce and fragmented. To support a more detailed view of accelerator programmes, we investigate one specific theme of accelerators: the "ecosystem builder," as introduced by Pauwels et al. (2016). We argue that heterogeneity exists among different corporate accelerator programmes within the ecosystembuilder based on differences in the process of selection, business support, and graduation. This heterogeneity is reflected in different corporate accelerator types within the ecosystem builder theme. We interviewed 20 leading experts from 16 German corporate-accelerator programmes and identified five types within the ecosystem builder theme. These types show important differences and similarities in terms of strategies, design elements, and processes. Thus, by categorizing programmes into these five types, we reduce the complexity for incumbents using the open innovation strategy to access the start-up ecosystem.

Key Words: Ecosystem Builder Types, Corporate Accelerator Programmes, Corporate Accelerator Heterogeneity, Start-up Supporting System, Open Innovation

INTRODUCTION

Driven by the challenges of dynamic market environments (e.g., in the context of digitalization) and the necessity of staying innovative, companies are opening up their internal innovation processes to profit from external knowledge sources like start-ups (Enkel et al., 2009; Gassmann et al., 2010). Therefore, established companies have started launching corporate venture capital, corporate incubation, and corporate accelerator programmes to foster structured interaction with start-ups (Weiblen & Chesbrough, 2015).

Accelerator programmes are time-limited forms of external/internal cooperation and are used for certain stages of start-ups (e.g., mature, early-, and late-stage) (Weiblen & Chesbrough, 2015). They are the next evolutionary step towards implementing start-up-supporting strategies (Cohen, 2013; Hochberg, 2016; Isabelle, 2013; Miller & Bound, 2011; Pauwels et al., 2016). Although there is important research on the strategies, design elements, and processes of corporate start-up engagement using corporate *venture capital* programmes (e.g., Benson & Ziedonis, 2009; Bruneel et al., 2012; Grimaldi & Grandi, 2005; Weiblen & Chesbrough, 2015) and *incubator* programmes (e.g., Allen & McCluskey, 1990; Bergek & Norrman, 2008; Hackett & Dilts, 2004), few academic studies have analysed corporate *accelerator* programmes (e.g., Barbero et al., 2014; Bauer et al., 2016; Kohler, 2016; Weiblen & Chesbrough, 2015).

Pauwels et al. (2016) were one of the first to investigate and structure accelerator programmes by analysing characteristics and drivers using a design lens (i.e., programme package, strategic focus, selection process). They identified three types of accelerator programmes: (1) the ecosystem builder, which focuses on corporations and the corporate environment; (2) the deal-flow maker, which focuses on investor funding and venture capital; and (3) the welfare stimulator, which focuses on the generalist local and/or international level and has government agencies as its main stakeholders.

The present study builds upon the pioneering investigation of design themes and focuses on the ecosystem builder as a design theme strongly related to (traditional) corporate start-up engagement (Pauwels et al., 2016; Weiblen & Chesbrough, 2015).

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Prevailing research demonstrates the necessity of combining external and internal knowledge especially in corporate innovation processes (Gassmann et al., 2010) to increase corporate engagement and to integrate a start-up culture characterised by speed, flexibility, and risk-taking (Weiblen & Chesbrough, 2015). Corporate willingness and openness to increase innovation and accept risks has led to diversified corporate ecosystem builder activities aiming to increase their agility and to leverage corporate experience, knowledge, infrastructure, and networks (Oh et al. 2016, Weiblen & Chesbrough, 2015). Therefore, corporate accelerators are the next evolutionary step after corporate incubators which in consequence increase the importance of understanding the ecosystem builder as such (Pauwels et al., 2016; Weiblen & Chesbrough, 2015).

However, observing a dynamic environment of individualized programmes of corporate engagement and considering the recent growth of corporate accelerators (Heinemann, 2016), we question the homogeneity of this design theme and assume diverse typologies within the ecosystem builder theme based on different strategies and processes. In more detail, we deem it necessary to explore and structure the heterogeneity of accelerator programmes *within* the ecosystem builder design theme of accelerators to maintain the strategic usefulness of this open innovation approach for both incumbents and start-ups. We interviewed 20 leading experts from 16 German corporate accelerator programmes that can be characterized as ecosystem builders (1) to deepen the understanding of the similarities and differences in their strategies, design elements, and processes of corporate accelerator programmes (Pauwels et al., 2016; Wise & Valliere, 2014) and (2) to identify and analyse types of corporate accelerator programmes associated with the ecosystem builder (Pauwels et al., 2016).

This article is structured as follows. The next section outlines the theoretical background of corporate accelerator programmes. It is followed by the methodological procedure used to identify five corporate accelerator types within the ecosystem builder accelerator theme. Then, we discuss the resulting implications to guide incumbents' choices for accelerator programmes to mutually benefit from cooperating with start-ups. The article

concludes with an overall discussion as well as limitations highlighting future research opportunities.

THEORETICAL BACKGROUND OF CORPORATE ACCELERATORS

Start-up-Supporting Activities and Corporate Accelerators

Weiblen & Chesbrough (2015) identified three major success factors that corporations need to consider when engaging with start-ups: (1) their absorptive capacity and ability to work with numerous start-ups, (2) a clear value proposition for the start-ups, and (3) a clear strategy for the desired benefits for the incumbent corporation. Based on these success factors, they then identified four general models of corporate engagement with start-ups: (1) corporate venture capital, (2) corporate incubation, (3) platform-based start-up programmes, and (4) outside-in start-up programmes (Weiblen & Chesbrough, 2015). According to this classification of corporate start-up engagement, the corporate accelerator programme is part of the fourth model, the outside-in start-up programme (Weiblen & Chesbrough, 2015).

Accelerators are time-limited programmes that shift towards intangible, knowledge-intensive support services that typically focus on education and mentoring (e.g., Cohen, 2013; Hochberg, 2016; Isabelle, 2013; Miller & Bound, 2011). Unlike incubators and venture-capital programmes, accelerators have a high turnover rate of two to three batches of start-ups per year with comparably short investment cycles, a limited duration of three to six months, differences in the kind of counselling offered, a competitive and cyclical selection process, and an on-site venture location (Bauer et al., 2016; Hochberg, 2016; Pauwels et al., 2016). Furthermore, accelerators downplay physical resources and product development support. Instead, they focus on networking facilitation (Barbero et al., 2014) for young seed-stage start-ups, and their investment strategies are more like those of business angels and less like those of large-scale corporate venture capital programmes (Bruneel et al., 2012; Pauwels et al., 2016).

Accelerator Themes

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Accelerators evolved from corporate engagement through incubators (Bruneel et al., 2012; Pauwels et al., 2016). Therefore, the underlying processes of start-up-supporting activities are associated with existing models within the incubation literature (Bergek & Norrman, 2008). These models are based on a three-step process of different antecedents: *selection* of start-ups (Bergek & Norrman, 2008), *business support* of selected start-ups (e.g., Allen & McCluskey, 1990; Bruneel et al., 2012; Hackett & Dilts, 2004; McAdam & McAdam, 2008; Schwartz, 2013), and *graduation* (Baum & Silverman, 2004). This process is mandatory for identifying the main elements of accelerators and helps to systematize corporate accelerator programmes (Bruneel et al., 2012; Pauwels et al., 2016).

Many authors have attempted to integrate and characterize accelerator programmes within the existing landscape of (corporate) start-up engagement (Cohen, 2013; DaSilva & Gurtner, 2017; Hochberg, 2016; Weiblen & Chesbrough, 2015), but only a few studies have specifically identified and subsumed a variety of programmes to different themes of (corporate) accelerators (Pauwels et al., 2016). By investigating 13 European accelerator programmes, Pauwels et al. (2016) identified three specific design themes of accelerators— the deal-flow maker, the welfare stimulator, and the ecosystem builder—based on differences and similarities in five design elements: programme package, strategic focus, selection process, funding structure, and alumni relations. The *deal-flow maker* identifies investment opportunities for potential investors and is oriented towards a corporate venture-capital programme. The *welfare stimulator* combines start-up activity with economic development and typically includes government agencies. The *ecosystem builder* focuses on a corporation's efforts to match, implement, and align start-ups for establishing a corporate ecosystem; it is thus the design theme to emphasize connection, exchange, and long-term learning in corporations for ongoing corporate development, growth, and disruptive innovation and change.

However, corporate strategies often create heterogeneous selection *among* as well as *within* corporate engagement activities (Weiblen & Chesbrough, 2015). Moreover, different levels of engagement due to corporate restrictions on engagement with external

actors, for example, or limited resources for efficiently integrating external knowledge (Volberda et al., 2010) can also increase the heterogeneity with a selected corporate engagement strategy. Thus, the majority of research considers the heterogeneity *between* different types of accelerators (Barbero et al., 2014; Bruneel et al., 2012; Pauwels et al., 2016), and research on possible heterogeneity *within* different types of accelerators is scarce (Cohen, 2013; Hochberg, 2016). To build upon this pioneering research, scholars should further structure and characterize corporate accelerator programmes (Bergek & Norrman, 2008; Mian et al., 2016; Pauwels et al., 2016). Thus, we stress the importance of investigating the rapid developments and the increasing individualization of engagement in this area.

> *Assumption 1:* There exists heterogeneity *among* different corporate accelerator programmes based on differences in the three-step process of selection, business support, and graduation.
>
> *Assumption 2:* The heterogeneity among different corporate accelerator programmes leads to different types *within* the ecosystem builder theme.

METHOD AND RESEARCH DESIGN

We chose an inductive, multiple-case study design (Eisenhard & Graebner, 2007; Pauwels et al., 2016). To avoid common-method bias (Miller & Bound; 2011; Pauwels et al., 2016; Weiblen & Chesbrough, 2015), each case includes data from multiple sources: (1) expert interviews, (2) additional internal information provided by the interviewees, and (3) publicly available data.

Sample

To observe heterogeneity among different accelerators, we kept the external context as homogeneous as possible (Welter, 2011). Thus, we limited our sample collection to a single country (Germany). We applied the following six key factors to identify potential

corporate accelerators that follow the strategic goal to build an ecosystem, provide

innovation opportunities (ecosystem builder, according to Pauwels et al., 2016), and

differentiate them from incubation programmes: (1) possible upfront investment (€10k–€50k)

and possible exchange for equity (~5–10%), (2) time-limited support, (3) a highly competitive

application process that is open to all, (4) cohorts of start-ups, (5) a focus on small teams,

and (6) periodic graduation with a demo day or investor day (Pauwels et al., 2016). Overall,

we identified 67 programmes and corporations and contacted them through an official letter

inviting them to join the study. The final sample consists of 16 German corporate

accelerators operating in various industries (Table 1 summarizes the characteristics and

specifications of the sample), which are all categorized as ecosystem builders (Pauwels et

al., 2016).

Table 1: Sample characteristics and specifications

Case	Founding Year	Ø Age of Participating Start-ups (in months)	Ø Financial Support for Each Start-up	Equity in Exchange	% Share of Successful Follow-on Investments (% of Internal Investment)	Batches per year (Duration in Months)
1_Car	2015	min. 6–12	flexible	none	none (none)	flexible (4)
2_Car	2015	6–12	€25,000	5%	n/a (n/a)	2 (3)
3_Bank	2014	max. 6	flexible	varying	n/a (n/a)	flexible (varying)
4_Retail	2014	3–12	€20,000 (+€100,000 convertible debt note possible)	7–10%	n/a (n/a)	1–2 (3)
5_Pharma	2013	6–12	€50,000	< 10%	n/a (n/a)	1–2 (4–6)
6_Finance	2013	min. 6–12	flexible	varying	n/a (n/a)	2–3 (max. 6)
7_IT	2010	max. 6	€15,000	None	20–60% (10–20%)	no batches
8_IT	2013	max. 6	none	n/a	60–90% (<10%)	flexible (6–9)
9_IT	2012	0–12	flexible	varying	customized (n/a)	flexible (3–6)
10_Media	2014	6–12	€50,000	5%	100% (0%)	1 (6–9)
11_Media	2013	6–18	€25,000	None	100% (0%)	2 (3)
12_Transport	2015	3–12	€25,000	None	n/a	2 (3)
13_Tech	2014	0–12	flexible	varying	n/a	flexible (varying)
14_Tech	2016	max. 6	flexible	varying	n/a	2–3 (2–3)
15_Phone	2012	6–12	€100,000–€300,000	10–15%	80–100% (0%)	flexible (varying)
16_Phone	2013	6–12	max. €50,000	5–10%	80–100% (0%)	2 (3)

Data Acquisition

In-line with Irvine et al. (2013), two independent researchers conducted 20 face-to-face interviews (30 to 90 minutes long) in German and English between August 2014 and June 2016. Each interview was tape-recorded, transcribed, and completed with internally and publicly available information (McLellan et al., 2003). This information includes company websites, news articles about the organizations and programmes, annual reports, media coverage, and company and programme presentations. This resulted in 388 pages of transcripts.

Interview Guideline

We followed a semi-structured interview guideline based on Bernard & Bernard (2012) to provide clear instructions and gain reliable qualitative data from the interviews. The guideline was translated, retranslated, and pretested and then arranged in five sections: (1) basic programme data (e.g., number of batches); (2) questions about the selection process (Bergek & Norrman, 2008); (3) questions about business-supporting and value-adding services (e.g., provision of infrastructural services, professional business support; Bruneel et al., 2012; Rice, 2002; Vanderstraeten & Matthyssens, 2012); (4) questions about collaborative projects between start-ups, the accelerator enterprise, and other strategic partners (e.g., Benson & Ziedonis, 2009; Cohen & Levinthal, 1990; Grimaldi & Grandi, 2005); and (5) questions about the programme's graduation process, exit policy, and long-term perspective (Baum & Silverman, 2004; Stuart et al., 1999).

Data Analysis

The data were summarized and interpreted using the text-reduction method (Bernard & Bernard, 2012). The process applied by Weiblen & Chesbrough (2015) and Pauwels et al. (2016) was adapted slightly, and two researchers extracted the data separately. An independent researcher participated in the analysis for greater validity of the interpretations (Gioia et al., 2010). A cross-case analysis (Eisenhardt, 1989) identified patterns and revealed differences among the interviews (Table 2 shows the procedure in more detail).

Table 2: Overview of data analysis

Step 1:	Step 1a	**Interviews and external data** (company websites, news articles about the organizations and programmes, annual reports, media coverage, and additional information provided by the interviewees).
Preparation of Data and First Steps of Analysis	Step 1b	**Recording and transcribing the interviews.** **Merging and interpreting the main characteristics (context and case):** 1. Constructing a matrix for the interview guidelines. 2. Completing the case overview with additional information.
Step 2:	Step 2a	**Coding key phrases and patterns of meaning iteratively** (Spiggle, 1994) within several rounds.
Identifying Relevant Statements and First Structure	Step 2b	**Structuring content analysis: Identifying relevant statements** (Bernard & Bernard, 2012): 1. Context-related statements to interview categories of the interview guidelines (function, dimension/theory, and questions). 2. Advanced completion of matrix. 3. Identifying provisional codes and categories. 4. Identifying related statements with significant difference to company and programme.
Step 3:	Step 3a	**Cross-Case Analysis** (Eisenhardt, 1989)**: Selection, Comparison, and Verification:** 1. Recording differences and similarities. 2. Main characteristics merged and interpreted with respect to the context of our problem description. 3. Repeating the process and merging results. 4. Defining the evaluation grid with categories and elements. 5. Entering the identified and corresponding data.
Selection, Comparison, Definition, and Evaluation Grid	Step 3b	**Defining categories, elements, and values using three-step process** (Bergek & Norrman, 2008): 1. Inter-case similarities and differences. 2. Categories and dimensions suggested by elements and constructs from each interview grid over all cases, followed by comparison and replication against one another (Yin, 2013). 3. Finally, enter date completed in the evaluation grid.
	Step 3c	**Advancement towards categories in the evaluation grid**: 1. Comparative analysis to cluster in various rounds (Miles & Huberman, 1994). 2. Identifying and defining category and element relationships. 3. Pooling the different categories and elements and refining evaluation grid (Tables 2 and 3).
Step 4:		**Advancement towards different corporate ecosystem builder themes** with differently sized groups of corporate accelerator programmes by pooling the categories.
Advancement towards Types of Corporate Accelerators Programmes	Step 4a	**Defining and naming the types** by revealed relationships of categories and elements of cases.
	Step 4b	**Identifying similarities between and relationships with Pauwels et al.'s (2016) ecosystem builder theme.**

RESULTS

Selection, Business Support, and Graduation

Based on the interview data, we identified and categorized the characteristics of the

three steps of selection, business support, and graduation representing also the starting-

point of our typology. The categories of the *selection* process were (1) acquisition strategy,

(2) exclusivity, and (3) admission screening. *Business support* was divided into (1) provision of space and infrastructure, (2) completeness of start-up support (e.g., absence or presence of different forms of counselling), (3) degree of standardization, and (4) interaction with the corporation (e.g., industry focus, direction of innovation flow). The *graduation* categories were (1) the presence or absence of predefined time schedules and (2) graduation events (see Table 3 for results).

Table 3: General results for the categories and characteristics of the three-step process

Process Step	Category	Characteristic	Count (% of the 16 programmes)
Selection	Acquisition Strategy	Open-to-all	81%
		Focused	19%
	Exclusivity	Yes	31%
		No	69%
	Admission Screening of New Start-ups	Picking-the-winners	63%
		Survival-of-the-fittest	38%
Business Support	Provision of Shared Office Space	Yes	100%
		No	0%
	Provision of Infrastructural Services	Yes	100%
		No	0%
	Completeness of Start-up Support: *Reactive and Episodic Counselling*	Internal	18%
		External	13%
		Both	69%
		n/a	0%
	Completeness of Start-up Support: *Proactive and Episodic Counselling*	Internal	13%
		External	63%
		Both	25%
		n/a	0%
	Completeness of Start-up Support: *Continuous and Proactive Counselling*	Internal	44%
		External	50%
		Both	0%
		n/a	6%
	Completeness of Start-up Support: *Hands-on Business Assistance /Technical Assistance*	Internal	25%
		External	0%
		Both	25%
		None	44%
		n/a	6%
	Degree of Standardization	Low	25%
		Medium	18%
		High	56%
	Focus on Industries	Vertical	44%
		Horizontal	25%
		Flexible	31%
	Integration with Core Business Corporation	Low	38%
		Medium	38%
		High	25%
	Direction of Innovation Flow	Outside-in	75%
		Inside-out	25%

	Value Capture	Equity involvement	44%
		Service fees	0%
		None	56%
	Organizational Anchoring	Separate corporate identity	50%
		Project-based	50%
Graduation	Pre-Defined Time Schedule	Fixed-term batch	50%
		Flexible-term batch	50%
	Graduation Event	Yes	63%
		No	38%

First, for the *selection process,* we observed stronger similarities in the acquisition strategy with a focus on open-to-all start-ups (Pauwels et al., 2016). Exclusivity (69% vs. 31% of the programmes) and admission screening (63% vs. 38%) were relevant antecedents for the assumed heterogeneity among accelerator programmes, even within the ecosystem builder theme (Pauwels et al., 2016). Second, for *business support,* the positive evaluation of provision of shared office space and infrastructural support was identical in all cases; it seems to be a necessary condition for differentiating accelerators from incubators (e.g., Barbero et al., 2014; Bergek & Norrman, 2016; Kohler, 2016), but not for distinguishing between ecosystem builder accelerator types. The completeness of start-up support with its different counselling forms showed that continuous and proactive counselling is a main driver of heterogeneity among the ecosystem builder accelerator types.

The other two forms of counselling support were similar, with either no distinction between internal and external forms (proactive and episodic counselling) or a strong focus on external counselling (continuous and proactive counselling). Furthermore, although standardized start-up support and direction of innovation flow are more convenient conditions, with almost identical patterns among accelerator programmes, the important drivers of distinction among accelerator programmes are industrial focus, integration with the corporation's core business, value capture, and organizational anchoring. Third, regarding *graduation*, both characteristics—pre-defined time schedule and graduation event—showed a heterogeneous pattern among accelerator programmes. Consequently, these results confirm assumption 1, that there exists heterogeneity among the corporate accelerator

programmes based on differences in the three-step process of selection, business support, and graduation.

Classifying Corporate Accelerator Programmes into Types

Based on the derived characteristics (see Table 3) from the analysis (see Table 2), we classified the accelerator programmes into five corporate accelerator types: Start-up Accelerator (SUA), Idea-Lab Accelerator (ILA), Intrapreneurship Accelerator (IPA), Venture-Client Accelerator (VCA), and White-Label Accelerator (WLA).

The *Start-up Accelerator* (SUA) is the dominant type of accelerator programme within our sample, described by six identified corporate accelerator programmes. It continues the incubator-like investment in young ventures, focusing on profitable assets and liquidation events with a stronger, formalized support process and a relatively low risk profile due to the smaller amounts of direct financial investment.

The *Idea-Lab Accelerator* (ILA) can shape, adopt, and follow new trends and weak signals from early on as part of a market enactment strategy. The ILA is a kind of hands-on activity for enabling new ideas, innovation development, and change. It focuses on very young start-ups and applies a survival-of-the-fittest approach with fewer pre-selective barriers. This type of corporate accelerator is strictly oriented towards enabling innovation from an early stage. It doesn't require seed investment or equity engagement, and its funding structure from corporations describe the ILA mechanisms to accelerate ideas and build innovation ecosystems. The horizontal focus on industries supports the ecosystem builder's strategic focus and the selection process element with more detail, including the different perspectives on the selection steps and the criteria of our support process. The ILA has a relatively low degree of formality, and it abandons the typical batch concept for a steady and flexible fluctuation, adaption, and exchange with start-ups. This is a prominent characteristic of an ecosystem builder aiming to enhance the ideation process of ideas and new impulses and signals, technologies, and business models from both worlds and actors (outside-in and

inside-out). The graduation process is flexible, having only individual conceptualized graduation events, but its established infrastructure is suitable for building support services.

The *Intrapreneurship Accelerator* (IPA) is based on the well-known concept of recognizing and developing (radical) innovation (Pinchot, 1985). Its key characteristics are a predominantly inside-out direction of innovation flow, quick access to resources, and high-level integration with the incumbent's core business. It aims to explore talents and entrepreneurs with the acceleration of employees' start-up ideas and to enable and accelerate innovation from within the incumbent corporation to better leverage existing resources and keep up with the disruption in the respective industries.

The *Venture-Client Accelerator* (VCA) is typically set up by corporations aiming to be the (exclusive) client or project partner of a relatively mature start-up without focusing on the classical start-up-supporting activities. The VCA becomes the predominant client for the start-up, which is then integrated into the core business and given access to the necessary resources and partner networks. The VCA has a local and international strategic focus and a longer perspective of the cooperation between the start-ups and partners, depending sometimes on a more flexible time schedule.

The *White-Label Accelerator* (WLA) represents a new, flexible, individual "platform" model for corporations, and it focuses on horizontal industries to build relationships with start-ups. It is a neutral form of the corporate accelerator ecosystem builder theme and is established externally in a separate corporate entity to enable incumbent corporations to profit from the collaboration with start-ups while sparing them the complex set-up procedure. This type of programme is often set up cooperatively with other (consulting) organizations that specialize in developing and executing accelerator programmes, especially platform solutions (e.g., Techstars, Plug-and-Play). See Table 4 for a summary of the accelerator types, associated corporate accelerator programmes, and representative quotes.

Table 4: Exemplary representative quotes from different corporate accelerator types

Type	Accelerator programmes	Representative quote from the interviews
Start-up Accelerator (SUA)	1_Pharma, 10_Media 11_Media 12_Transport 14_Tech 16_Phone	"Our dream is that, hopefully, they will advise us in the future, saying what they are interested in, subjects they are working on themselves, and scenarios that they could imagine going after. ... Currently, we are seeking interesting teams, products, and projects and presenting them. … Maybe in the future it will be the opposite way" (16_Phone). "The accelerator seems to be an advanced programme of incubators, following the same direction towards substantial relationships and collaboration with start-ups, but with a lower risk profile and a stronger formalized supporting process. Close but separated from the corporation daily business" (1_Pharma).
Idea-Lab Accelerator (ILA)	3_Bank 7_IT 8_IT 15_Phone	"Therefore, an accelerator is also good, because you have a test surface or a kind of test lab. … They are seen as an additional opportunity to leverage existing assets and resources by testing small but promising market opportunities, as confirmed by the corresponding corporations. It is here where things get simply tested fast, and sometimes really simple questions are tested that we have dealt with for many years already, but nobody ever just simply tried and developed them" (7_IT). "Today's start-ups are the partners and clients of tomorrow. … The universal goal is mutual learning! … Thus, we are of course not exit-oriented but absolutely innovation-oriented. … The most important thing we can do for our products is R&D. We bring together our techies with the companies, teams, and individuals, and then they are working together now and from time to time and beginning to understand and learn from new technologies. … What we are doing is technologically agnostic. … Due to the fact that we want to discover new, really new technologies, we are looking for true innovations. In this case we are absolutely open to observing and working in peripheral areas" (8_IT).
Intrapreneurship Accelerator (IPA)	9_IT 13_Tech	"It is about motivating the employees from within to work on their ideas, ideas that maybe do not fit into the existing plans and strategies of the company or existing divisions. Thus, in terms of the long-term strategy of the company, we enable the individual employees to develop new business

		ideas for the corporation … We want to open the mind for other ways of thinking and doing and building future potential for new business models" (13_Tech). "The reference cases enhance the corporate ability of fostering disruption and to be open for the outside-in integration of start-ups" (9_IT).
Venture-Client Accelerator (VCA)	1_Car 6_Finance	"'Venture Client' represents the 'natural next step in the evolution of a start-up.' … We are working together as their first client and a following mutual collaboration. … This constellation allows our employees, partners, and R&D to further develop their ideas and/or projects and allow for openness of the corporation to implement possible innovation mechanisms and drivers for really changing and to authorize with more speed" (1_Car). "We are the predominant client for the start-up, which is then highly integrated into the core business and has access to the necessary resources and partner networks on a highly individualized support and collaboration" (6_Finance).
White-Label Accelerator (WLA)	2_Car 4_Retail	"We chose this way as a first step to open our innovation process for external knowledge from start-ups … to continuously engage in the development and growth innovation of our culture and architecture-specific model, even with the help of a provider and expert in acceleration programmes … and yes, their existing contacts to start-ups and respecting ecosystems in the first step. … Yes, separated from our corporation. Not all employees are open for new developments" (4_Retail).

In-line with prior rationales for the ecosystem builder design theme, we observed that the identified corporate accelerator types are associated with elements of the ecosystem builder (Pauwels et al., 2016). However, the results also support assumption 2, that is the idea of different types within this specific accelerator theme. While Pauwels et al.'s (2016) *design approach* identified one ecosystem builder theme, our three-step *process approach* (selection, business support, and graduation) identifies a fine-grained differentiation among programmes within the ecosystem builder design theme.

In the *selection* phase, ILAs, SUAs, and WLAs apply the open-to-all acquisition strategy with fewer pre-selective barriers. This is in contrast to VCAs and IPAs, which follow the focused, single-acquisition strategy. In terms of admission screening, ILAs and IPAs prefer a survival-of-the-fittest approach. SUAs, WLAs, and VCAs, however, follow the picking-the-winners approach, asking for a comprehensive overview of a start-up's business plan, financial situation, and market development and for a first prototype demonstration during the online application process and pitching event. For VCA, corporations prefer experienced start-ups and entrepreneurs.

Regarding *business support*, the SUAs in our sample provide only continuous and proactive counselling from external sources. Reactive and episodic counselling is offered by the WLAs from external sources and by the ILAs and VCAs from internal sources, and no support is provided by ILAs or IPAs. WLAs and ILAs offer proactive and episodic counselling from external sources, VCAs offer it from internal sources, and IPAs don't offer it at all. For SUAs and WLAs, continuous and proactive counselling is provided by an outsourced partner or entity, and for ILAs, VCAs, and IPAs, it is offered from within the corporation. Technical assistance is offered only by VCAs and IPAs from internal sources, confirming their different characteristics. The degree of standardization of SUAs and WLAs and of these programmes' supporting structures and processes is relatively high; it is medium for ILAs and low for VCAs and IPAs, relating to a flexible and individual time schedule. Regarding the focus on industries, WLAs and ILAs focus mainly on horizontal industries, whereas for VCAs and IPAs, the search for new start-ups focuses on business models and technologies within the market space of the respective incumbent corporation (vertical approach). The industry focus of SUAs varies between vertical and horizontal. Integration in the core business is low for SUAs and WLAs, medium for ILAs, and high for VCAs and IPAs.

The direction of innovation flow is an important indicator for the differences and similarities of the identified types. Only the IPA is characterized by an inside-out orientation; all others focus on the outside-in direction of innovation flow and business development. Regarding value capture, SUAs and WLAs provide financing in exchange for equity to power

the development and commitment of start-ups. Thus, the degree of equity involvement and operative cooperation is stronger than in all other cases of the ecosystem builder accelerator type. There, the investment logic is driven by a purely strategic approach with no financial commitment or equity exchange. Finally, an important characteristic of this process is organizational anchoring of the corporate accelerators: SUAs, WLAs, and IPAs are typically set up as separately incorporated entities or separate business units. Instead, the ILA and VCA are project based.

Considering *graduation* and its "pre-defined time schedule" characteristic, the SUA and WLA have a fixed-term batch, in contrast to the flexible-term batch of all other identified types (ILA, VCA, and IPA). Finally, the corporate accelerator types are characterized in four cases by the execution of a graduation event, but not in the cases of ILAs and VCAs. Figure 1 shows the identified types, illustrating their differences, similarities, heterogeneity, and applicability to diverse corporate exchange and collaboration with start-ups. Additionally, Table 5 summarizes the five corporate accelerator types and their similarities and differences and, consequently, the existing ecosystem builder theme. This also supports incumbents' decision making for accelerator programmes to mutually benefit from cooperating and engaging with start-ups.

Figure 1: *Characterization and demarcation of the identified corporate accelerator types*
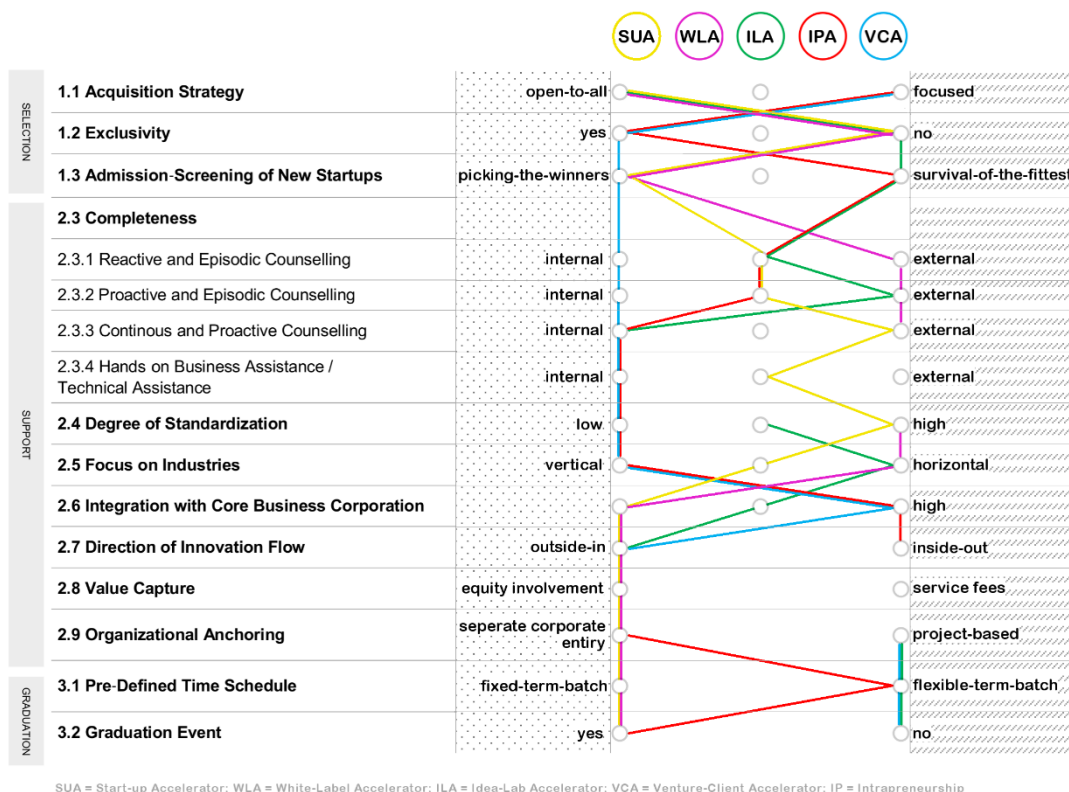
Illustration of corporate accelerator types

SUA = Start-up Accelerator; WLA = White-Label Accelerator; ILA = Idea-Lab Accelerator; VCA = Venture-Client Accelerator; IP = Intrapreneurship

Illustration of the types' heterogeneity

Table 5: Similarities between the five corporate accelerator types and the existing ecosystem builder theme

	Start-up Accelerator (SUA)	White-Label Accelerator (WLA)	Idea-Lab Accelerator (ILA)	Venture-Client Accelerator (VCA)	Intrapreneurship Accelerator (IPA)
Short definition of types in the ecosystem builder theme	*The modern classical: Advanced incubator concept for substantial relationship and collaboration with start-ups, lower risk profile, and stronger formalized supporting process.*	*The relatively neutral and adaptable hybrid: Supported and facilitated by one or more corporations with outsourced partners or proven expert providers. Creation of own ecosystems around the corporate involvement in start-up-supporting activities.*	*The hands-on active for the new: Ideas, experiential futures, innovation. Providing possibilities to shape, adopt, and follow new trends and weak signals in corporations from early on through to the enactment and beyond.*	*The exclusive but not classical engagement relationship of joint development: Corporations aiming to be the (exclusive) client or project partner of a relatively mature start-up in late-stage development, helping to specialize in a specific industry.*	*The internal entrepreneur for high-level involvement and integration: Starting inside the corporation to accelerate innovation from within and depending on the individual structure and the employees as the most important drivers and (re)sources of the programme type.*
Ecosystem builder design elements:					
Programme package of ecosystem builder	High formalization of support process, low integration in core business, separate entity *Differences:* Incubator-like direct investments in new ventures in later stages, outside-in innovation flow	High formalization of support process but also flexible, individual approach, low integration in core business, separate entity *Differences:* Equity involvement, outside-in innovation flow	Medium formalization of support process, steady and more flexible fluctuation, medium degree of integration in core business, project-based *Differences:* Pre-seed start-up support of programmes and early ideas, outside-in innovation flow	Low formalization of support process, high integration in core business, project-based *Differences:* Outside-in innovation flow	Low-to-medium formalization of support process, individualization, and flexibility; high integration in core business, project-based *Differences:* Inside-out innovation flow

| Strategic focus of ecosystem builder | International vertical/horizontal focus on industries

Differences:
Local and/or international | International horizontal focus on industries

Differences:
Local and/or international | International horizontal focus on industries

Differences:
Local and/or international | International vertical focus on industries

Differences:
Local and/or international | International vertical focus on industries

Differences:
Local and/or international |
|---|---|---|---|---|---|
| **Selection process of ecosystem builder** | Favour new ventures in later stages with proven track record

Differences:
Focus on teams and entrepreneurs, open-to-all, picking-the-winners | Favour new ventures in early and/or later stages but with proven track record dependant on individual type of programme, focus on teams and entrepreneurs

Differences:
Early stages and individuality, focus on teams and entrepreneurs open-to-all, picking-the-winners | Favour very young entrepreneurs and start-ups

Differences:
Focus on teams and entrepreneurs, open-to-all, survival-of-the-fittest | Favour new ventures in later stages with proven track record and fundamental proof of concept

Differences:
Exclusivity of cooperation, focus on teams and entrepreneurs, focused, picking-the-winners | Favours screening employees' new start-up ideas and projects

Differences:
Exclusivity of cooperation, focus on individual teams/projects, focused, survival-of-the-fittest, corporate objectives |
| **Funding structure of ecosystem builder** | Funding from corporations | Funding from corporations

Differences:
Supported by consultancies/agencies | Funding from corporations | Funding from corporations | Funding from corporations |
| **Alumni relations of ecosystem builder** | Opportunity to build and alumni infrastructure dependant on individual type

Differences:
No special focus | Opportunity to build and alumni infrastructure dependant on individual type

Differences:
No special focus | Opportunity to build and alumni infrastructure dependant on individual type

Differences:
No special focus | Opportunity to build and alumni infrastructure dependant on individual type

Differences:
No special focus | Opportunity to build and alumni infrastructure dependant on individual type

Differences:
No special focus |

DISCUSSION AND IMPLICATIONS

This study presents further evidence for the dynamically evolving landscape of corporate accelerator programmes as indicated by the rapid growth of new kinds of accelerators and diverse models of corporate engagement with start-ups. The results support the assumptions that (1) there is heterogeneity among corporate accelerator programmes based on differences in the three-step process of selection, business support, and graduation, and (2) the heterogeneity among different corporate accelerator programmes leads to different types within the ecosystem builder theme.

Some corporate accelerator programmes and types follow a stronger specialist approach with a vertical industry focus, whereas others aim for a wide variety of start-up ideas within their portfolio. In addition, some corporate accelerators confirm that the first batch of their programme was a learning phase and that they wanted to teach, learn, and develop further entrepreneurial spirit within their corporation to bridge the gap between both worlds (corporations and start-ups). Besides the typical trial-and-error approach of testing processes inside the programme, the important factors for the programmes were reputation building and accepting collaboration in the start-up ecosystem.

However, our findings also support a numerical increase in programmes and the emergence of hybrid types of the ecosystem builder theme. Because of the varying corporate structures, diverse attitudes, and the individual, dynamic environments of incumbent corporations, corporate accelerators may vary their start-up-supporting services or design elements (see Tables 3 and 4 and Figure 1). Moreover, the emergence of White-Label Accelerators shows that an independent ecosystem (comprising consulting firms and agencies) is forming around corporate involvement in start-up-supporting activities and is engaging in general innovation (Hochberg, 2016; Kohler, 2016; Weiblen & Chesbrough, 2015).

Theoretical Implications

Within the fragmented work on accelerator programmes, this study provides a first step in integrating and connecting existing and new research to achieve the following: (1) provide a

consistent and systematic theoretical understanding about corporate accelerators, their strategies, design elements, and processes (Hochberg, 2016; Pauwels et al., 2016; Weiblen & Chesbrough, 2015); (2) improve understanding of the new-generation incubation models with a more detailed and informed image of how to specify their accelerator programmes; (3) extend Pauwels et al.'s (2016) study by emphasizing the components of the corporate accelerator programmes in the ecosystem builder theme using a process-based approach to complement their design approach and to ease the positioning in the ecosystem; and (4) complement the categorization of the different models of activity systems (Amit & Zott, 2012) depending on the different elements and characteristics.

Managerial Implications

By reducing the complexity of the programmes and facilitating their selection, incumbents can use this open innovation strategy to access start-up ecosystems and develop them according to their strategic objectives (Weiblen & Chesbrough, 2015). In particular, corporate objectives linked to ecosystem building (e.g., growing agility of business models and strategies to enter new industries and implement new technological environments and/or generate access to the "new digital age" of business) represent the critical starting point for decision-making about the selection process and the strategic focus, among other things. Corporations can use the three-step process and the five types and their corresponding characteristics as a guideline (1) to develop their start-up engagement; (2) to use, design, and position their individual accelerator programmes; and (3) to grow the corporation's and the individual's perception of the future and an agile long-term corporate strategy.

Our research shows that accelerator programmes vary in their strategic objectives; thus, companies need to understand what they can achieve with a particular programme. The industrial focus, integration with the corporation's core business, direction of innovation flow, and organizational anchoring are representative characteristics of heterogeneity and important drivers for the distinction of accelerator programmes. From our research, we distilled the following exemplary factors that may guide corporate decision making about engagement and collaboration

with start-ups and entrepreneurs in the first step: the maturity of the idea, the possible time horizon (long- or short-term engagement and batches) in relation to organizational anchoring (separate or project based), and industry focus (vertical or horizontal).

Considering this with the existing corporate activities to push innovation (internally and/or externally) and the respective patience for countable results yields the following implications: (1) for Idea-Lab Accelerator (ILA), corporations seek a long engagement perspective with a horizontal industry focus. It is project-based in the first step and favours very young but also mature ideas and entrepreneurs of all levels of experience with an outside-in innovation flow. (2) The Venture-Client Accelerator (VCA) focuses on later-stage, mature, and experienced start-ups within their own market space (vertical approach). It favours a high degree of integration in corporate core business but a low degree of standardization to allow flexible collaboration and an exclusive developmental relationship with the start-ups. (3) For example, a corporation fosters its employees' start-up projects at all experience levels, establishing them in a separate corporate entity or business unit, adopting a vertical focus on industries, and favouring an outside-in innovation. Here, the corporation follows the Intrapreneurship Accelerator type and fosters individualization and flexibility in the acceleration process to push and pull innovation in the corporation.By identifying cases in each type from different industries, we conclude that accelerator programmes are not restricted to one industry.

LIMITATIONS, FUTURE RESEARCH, AND CONCLUSION

The five accelerator types within the ecosystem builder design theme (Pauwels et al., 2016) are a fruitful starting point for elaborating their content, characteristics, similarities, differences, and mechanisms of their engagement (strategies, design elements and processes). They generate insights into the structure and organization to set up ecosystem builder accelerator types. However, the present study also reveals some limitations and future research opportunities.

First, because our research focuses on corporate accelerators in Germany, the research scope should extend to other countries and explore the influence of different cultural, economic, political, and administrative contexts. Second, although the proposed typology can serve as a

basis for future research, it is necessary to continuously examine, expand, and adapt it to changing corporate structures, cultures, and environments and the evolution of new types of corporate accelerators. Third, this research could be completed by new evaluation phases, providing insights into the success of corporate accelerator types and their different strategies, exploring future transformations of accelerator programmes due to further developments and improvements, and seeking results beyond purely financial returns. Fourth, the dynamic and volatile developments in this market mean that the strategies of the observed corporate accelerator types vary and thus need to be continuously reviewed, adapted, and systematized. New accelerator types and diverse models of corporate engagement with start-ups and ecosystems will likely emerge. Fifth, in addition to the company's point of view, research could also explore the views of diverse start-ups associated with corporate accelerator programmes.

We hope that this study enriches our understanding of how to make strategically informed decisions about suitable accelerator programmes and that it stimulates further research into this important topic.

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