

Sbampato, Kaique; Proença, Adriano; Silva, Edison Renato

Article

What do we know about corporate-startup engagement? A systematic review of the main modes of collaboration between corporations and startups

Innovation & Management Review

Provided in Cooperation with:

University of São Paulo, School of Economics, Management, Accounting and Actuarial Sciences (FEA-USP)

Suggested Citation: Sbampato, Kaique; Proença, Adriano; Silva, Edison Renato (2025) : What do we know about corporate-startup engagement? A systematic review of the main modes of collaboration between corporations and startups, Innovation & Management Review, ISSN 2515-8961, Emerald, Leeds, Vol. 22, Iss. 2, pp. 82-99, <https://doi.org/10.1108/INMR-06-2022-0077>

This Version is available at:

<https://hdl.handle.net/10419/337595>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

What do we know about corporate-startup engagement? A systematic review of the main modes of collaboration between corporations and startups

Kaique Sbampato, Adriano Proença and Edison Renato Silva
*Universidade Federal do Rio de Janeiro,
Rio de Janeiro, Brazil*

Abstract

Purpose – The purpose of this article is to identify the predominant modes to realize corporate-startup engagement (CSE).

Design/methodology/approach – We carried out a systematic literature review to synthesize how startups and corporations collaborate in this form of innovation.

Findings – The authors found 19 CSE modes, which range from modes that involve less risk and are simpler to those that involve more risk and are more complex.

Originality/value – The findings consolidate the state of the art on the modes of CSE. It can help scholars drive novel research departing from consolidated findings, and practitioners can understand how collaboration between corporations and startups takes place and anticipate future challenges.

Keywords Corporate venturing, Innovation, Startups, Corporate entrepreneurship, Intrapreneurship

Paper type Literature review

Introduction

The role of corporate innovation is growing rapidly for the discovery of new businesses and markets (Docherty, 2015). However, this challenge needs to be balanced against the organization's resource limitations (Freeman & Engel, 2007). In recent years, collaboration with partners has become an especially important aspect of innovation strategies (e.g. Weiblen & Chesbrough, 2015; Innovation Leader, 2021; Gutmann & Lang, 2022). Under a mutually beneficial relationship, startups and corporations can gain unique advantages, making corporate-startup engagement (CSE) a recent research focus.

Some companies, alert to disruption, seek innovations to remain competitive, enter new markets, manage talent mobility and access faster technological knowledge (Younis, Desai, & Sigal, 2016). Startups, on the other hand, bring new talent, agility, risk tolerance and digitization power but lack the resources, brand credibility and market access of large companies (Grando, 2016).

In other times, large companies aroused the interest of the market. This disposition began to change to a search for businesses with more aggressive growth, migrating markets to startups (Imaginaik & Masschallenge, 2016), hence the need for established companies to become

© Kaique Sbampato, Adriano Proença and Edison Renato Silva. Published in *Innovation & Management Review*. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at <http://creativecommons.org/licenses/by/4.0/legalcode>

We would like to thank the Brazilian National Council for Scientific and Technological Research (CNPq) and Coordination of Superior Level Staff Improvement (CAPES) that provided a scholarship for this project.



more entrepreneurial and internalize the power of disruption instead of fighting it (Sudati, 2016; Corvello, Steiber, & Alänge, 2023).

Despite practical interest (Mocker, Bielli, & Haley, 2015; Bonzom & Netessine, 2016), there is still little scientific evidence regarding the breadth and importance of the theme (Giglio, Corvello, Coniglio, Kraus, & Gast, 2023). It remains unclear how large established companies organize for systematic engagements to enhance open innovation and improve innovation management (KPMG, 2014; Bagno, Salerno, Souza Junior, & O'Connor, 2020; De Groote and Backmann, 2020). This study aims to identify modes of CSE, as existing research lacks a comprehensive synthesis of key findings.

The literature describes traditional modes of CSE (e.g. Weiblen & Chesbrough, 2015; Kohler, 2016; Brigl, Gross-Selbeck, Dehnert, Schmieg, & Simon, 2019). However, in addition to traditional engagement modes, large companies have developed programs offering varied support levels for startups (Carvalho, 2019). This shift has led to numerous engagement modes, enabling companies to engage with more startups and gain greater scope and agility (Yrttimaa, 2021; Ching & Caetano, 2021). However, the abundance of options can cause the “paradox of choice” (Schwartz, 2014), leading to decision paralysis or a “fear of missing out” (FOMO). This study aims to address the gap by synthesizing collaboration modes and their theoretical and practical implications.

Collaboration is challenging due to the divergent interests and inequalities among actors (Varesco Kager, Sparr, & Grote, 2022). Many interaction mechanisms fail to demonstrate value to the core business because they are uncommon and poorly understood. Consequently, there is limited knowledge on executing engagements and understanding this relationship, making the benefits often unclear (Bannerjee, Bielli, & Haley, 2016; Giglio *et al.*, 2023).

The paper contributes to the discourse on corporate entrepreneurship and new ventures. To identify the state of the art on CSE, we conducted a systematic literature review (SLR) to provide a comprehensive overview of how CSE is performed and its main modes. This will solidify the scientific theory behind the topic and offer practitioners insights for designing strategies that benefit both academics and practitioners in implementing CSE.

The article begins by introducing the theoretical background and continues with a description of the chosen methodology and the results found, highlighting the modes of CSE. The article goes on with a discussion of the main findings and their theoretical implications and managerial contributions. Finally, we present the limitations of the research and offer suggestions for future research.

Theoretical background

This section will present CSE, including its theoretical framework, critical points for this study and the research hypotheses.

New ventures and CSE

Since the 1970s, new ventures, often funded by venture capital, have been a major source of business innovation (Burgelman, 1983). Many leading companies today were once venture capital-financed startups (Freeman & Engel, 2007). Corporate venture capital programs can be integral to a firm's innovation strategy. To this day, corporate venture capitalists significantly impact groundbreaking opportunities (Rossi, Festa, Papa, & Scorrano, 2019).

Large companies face significant uncertainty due to unpredictable changes and external events, often driven by the rise of startups. This creates a highly dynamic and less controllable market for organizations (Anthony, Gilbert, & Johnson, 2017; Soni, 2018; Prashantham & Madhok, 2023). This has led to the need for new business models and revenue streams. Large companies excel at incremental innovation with existing technology but are often resistant to

disruptive technologies that render their current competencies obsolete – technologies increasingly demonstrated by startups (Kohler, 2016; Heratri & Klang, 2019).

In that way, sustainable long-term innovation relies on a supportive ecosystem (Viki, Toma, & Gons, 2017). Companies that balance “exploitation” and “exploration” effectively leverage their competencies to innovate and improve efficiency (March, 1991; Tushman and O’Reilly, 1996). After the open innovation paradigm (Chesbrough, 2003), innovating internally is not enough. Today, startups are increasingly driving innovation (Docherty, 2015; Imaginaik & MassChallenge, 2016).

Thus, organizations need to focus on creating new businesses to take a step to growth, where you can engage and leverage the entrepreneurial ecosystem to co-create new businesses (Docherty, 2015; Hogenhuis, Van Den Hende, & Hultink, 2016; Yrttimaa, 2021). Therefore, a particular interaction emerges between large companies and startups commonly known as CSE – formal efforts implemented by established companies to engage with entrepreneurial startups (Weiblen & Chesbrough, 2015; Kitsuta, 2021).

CSE as an open innovation strategy

The interaction between large companies and startups as an open innovation strategy has intensified significantly in the last decade (Thieme, 2017; Jucá & Alves, 2022). This approach is viewed as a management practice to institutionalize entrepreneurship and implement a continuous innovation strategy (Sudati, 2016). Since 2015, surveys on CSE have emerged, with large companies increasingly seeking new interaction models for co-creating innovations.

Weiblen and Chesbrough (2015) follow the perspective of the combination of entrepreneurial activity and corporate capacity. Kohler (2016) understands that corporations want to embrace an open innovation strategy, increasingly looking to startups as a source of external innovation. Bonzom and Netessine (2016) investigate the world’s largest public companies and their practices on corporate engagement with startups. To distinguish from the term corporate venturing and to absorb the new modalities of relationships between large companies and startups, CSE emerges as a new value offering strategy (Gutmann & Lang, 2022).

Open innovation offers many opportunities for interaction, providing mutual benefits to the typically separate worlds of corporations and startups (World Economic Forum, 2018). Engagement programs are rapidly growing in relevance (Rundquist & Österling, 2018). However, scholars define various types of corporate commitments differently, lacking unified titles, definitions and descriptions for each model (Thieme, 2017). Although combining entrepreneurial activity with corporate capability is promising, it can be challenging to achieve (Pisoni, Giovannoni, & Onetti, 2022). Companies need to systematically approach these innovation partnerships rather than relying on individual initiatives (Mocker *et al.*, 2015; Steiber, Alänge, & Corvello, 2021).

Based on this, the authors hypothesize that:

- H1. The increasingly volatile and uncertain market dynamics have brought corporations and startups closer together.
- H2. The various modes of CSE are not consolidated, and this makes it difficult for corporations and startups to make decisions about how to collaborate.

Data and method

This section outlines the research steps and methodology, including the strategy, design, methods and structural basis, as shown in Figure 1.

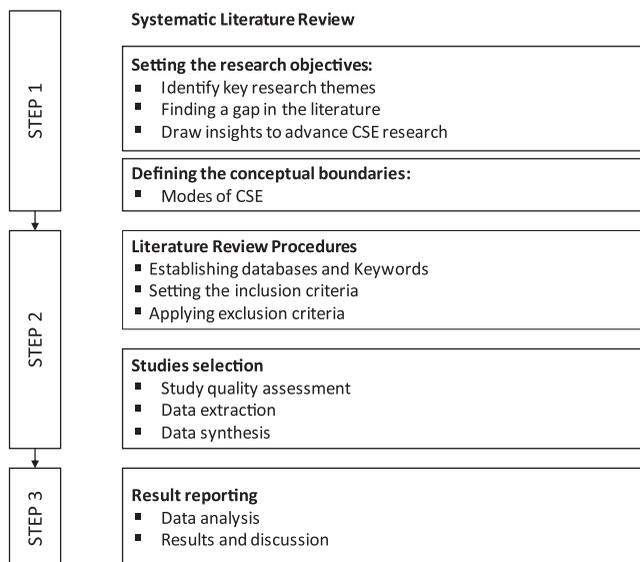


Figure 1. Steps of the systematic literature review

Literature review procedures

An SLR was conducted using the literature grounded theory approach proposed by [Ermelo, Lacerda, Morandi and Gauss \(2021\)](#) for its scientific rigor and transparency ([Tranfield, Denyer, & Smart, 2003](#)). This study utilized selected methods and instruments to identify literature on corporate-startup collaboration and related issues, supporting the research discussion.

Web of Science and Scopus were selected as bibliometric databases to extract metadata. The sample includes academic journal articles published electronically until August 2023. All selected papers underwent a filtering process and met inclusion criteria. Additionally, we incorporated gray literature, such as e-books and consultancy reports, recognizing that CSE is both an academic and practical topic. Including both academic and gray literature was essential for a comprehensive understanding of the phenomenon (see [Table 1](#)).

The search used the following strings (TITLE-ABS-KEY): (1) corporate; (2) startup; (3) “corporate–startup engagement” and (4) “corporate ventur*.” For each database, we tested the number of entries for each keyword, compiled the results and organized them into a database using Sente and Mendeley. Boolean operators “and” and “or” were used to refine the results.

Table 1. Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Scientific references about corporate-startup engagement	References outside the CSE domain
Books that are in line with the key theme of this study	References that are duplicated
References that perform a literature review about corporate-startup engagement and its converging topics from the keywords	References that do not talk about the listed keywords
References of gray literature that concern the proposed topic	References that do not fulfill inclusion criteria
	References whose full text is unavailable

Source(s): Authors’ own work

In the preliminary sample, 7,886 papers were retrieved. After initial screening, 1,445 papers were selected. Further filtering based on keyword heuristics, title, abstract, inspection and analytical reading narrowed the sample to 350 papers. Applying quality and inclusion criteria reduced this to 122 papers, with duplicates removed. After analyzing the selected papers and their citations, 20 additional papers were included. The total number of papers used for the working literature and qualitative synthesis is 153 (see Figure 2).

Data analysis followed standard content analysis procedures (Krippendorff, 2004). Selected papers were reviewed, and relevant snippets mentioning CSE modes were extracted using MAXQDA. The software recorded page numbers and references. Snippets were categorized by source and theme, creating a crossover table of CSE modes mentioned by each source.

Results

The results section will present the analysis of the literature and the main modes for corporations and startups to engage, from the SLR findings.

Systematic results on CSE

CSE programs are formal efforts implemented by established companies to engage with entrepreneurial startups (Kitsuta & Quadros, 2018). Typically, companies use multiple approaches simultaneously, regardless of whether the focus is on strategic or financial goals (Bagno et al., 2020).

The SLR practice requires analysis to better visualize the results. Figure 3 shows some of these findings from the systematic search.

The most notable work on CSE is Weible and Chesbrough (2015). However, prior studies on the theoretical framework of CSE existed, with a significant increase in research after 2015, as shown in Figure 3, Graphic A. Contributions from private companies and consultancies have also been crucial in developing the CSE topic. Moreover, research has advanced beyond gray literature, as shown in Figure 3, Graphic B. While there is growing work and author involvement, studies remain fragmented with limited connections.

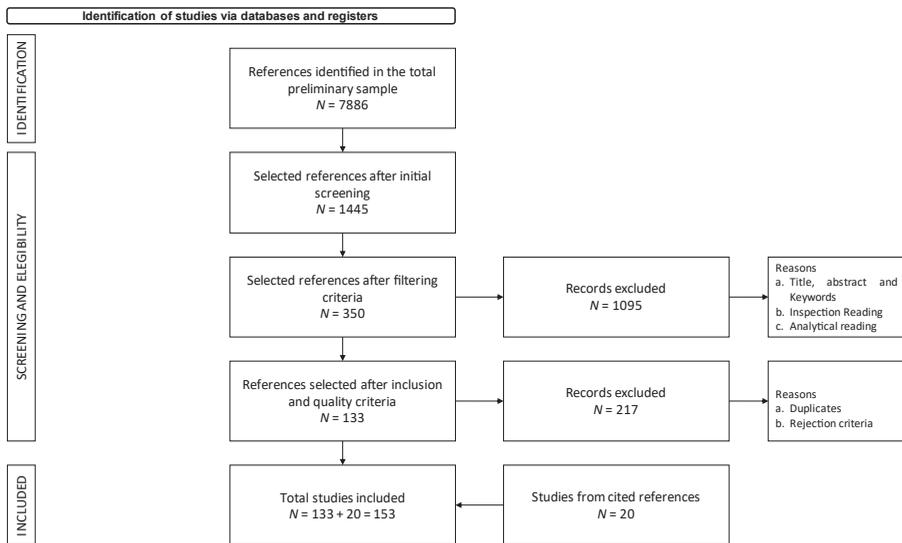
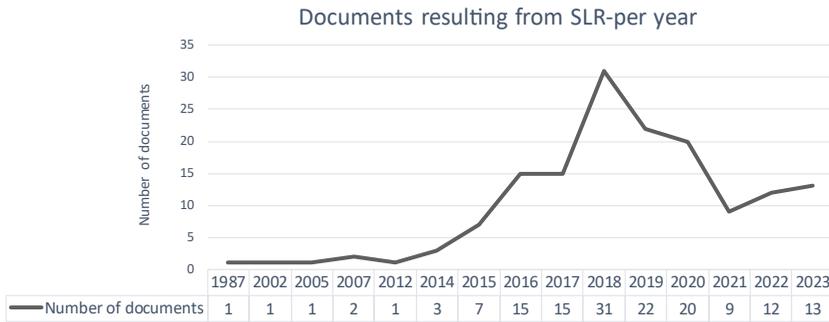
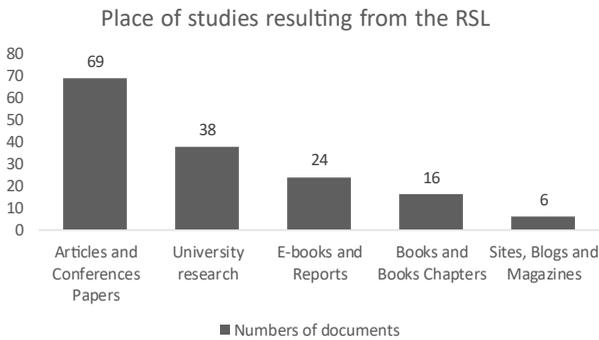


Figure 2. Flowchart of the systematic literature review (PRISMA)

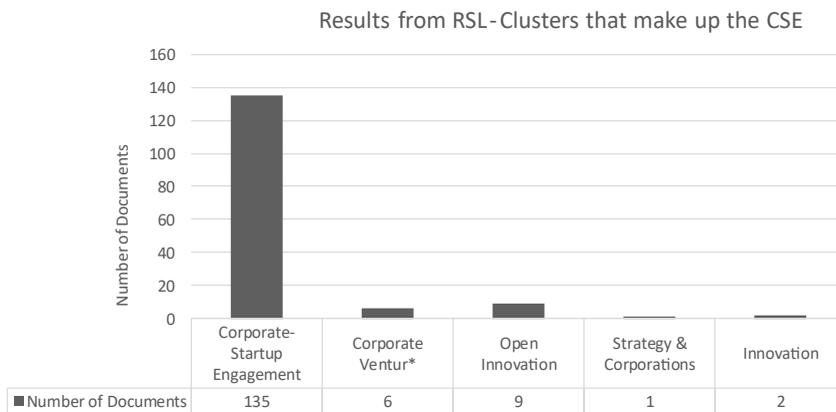


Note: The 2023 results include the works available until August 2023

(a)



(b)



(c)

Figure 3. General results of the systematic literature review

For this reason, we clustered the works based on their similarities, as shown in Figure 3, Graphic C. The “corporate-startup engagement” cluster includes studies on programs, modes, success factors and governance. The “corporate ventur*” cluster covers general corporate

venturing, meanings, generations, systematic reviews and venture capital. The “open innovation” cluster focuses on this innovation mode in corporations, startups and partnerships. The “strategy and corporations” cluster deals with corporate strategy and innovation strategies. Finally, the “innovation” cluster addresses innovation itself, including business models, co-development and related propositions.

CSE modes

Established companies have various ways to interact with startups (Steiber & Alänge, 2020). Weiblen and Chesbrough (2015) identify corporate venturing, corporate incubators and both outside-in and inside-out programs. Carvalho (2019) categorizes them into five types: corporate incubators and accelerators, corporate venture capital, open innovation challenges, services and informal engagement. Brigl *et al.* (2019) list innovation labs, accelerators, corporate venture capital, partnership units and incubators. Denysiuk (2021) includes events, resource sharing, business support, partnerships, corporate venture capital and transformational arrangements.

Open innovation programs facilitate collaboration between corporations and startups through knowledge transfer or higher-risk investments (Bannerjee *et al.*, 2016; Lucerga, 2018). New soft governance models now allow broader engagement with startups, offering more scope and agility (Lucerga, 2018; Carvalho, 2019; Kitsuta, 2021). The significance and understanding of these programs are rapidly advancing (Rundquist & Österling, 2018).

Different engagement models and actors vary in terms of relationship type, partner type, knowledge acquisition and the stage of the innovation process (Kohler, 2016; Maciel, Becker, Gomes, & Teixeira, 2018; Lucerga, 2018). Engagement forms may combine multiple approaches, depending on whether the CSE program focuses on strategic or financial objectives.

There is no standard approach to CSE. Engagement modes vary from simple, low-risk mechanisms to complex, high-risk ones. Besides increased venture capital for startups, there has been a significant expansion in support networks over the past decade (Rossi *et al.*, 2019). Previously dominated by government and academic programs, support now includes a wide range of services, incubators and accelerators. Additionally, large companies have developed new programs to support startups (Carvalho, 2019).

The SLR of CSE reveals various modes. The five most common modes, from all the documents compiled, are (1) accelerators, (2) corporate venture capital, (3) one-off events/challenges, (4) mergers and acquisitions (M&A) and (5) corporate incubators. Table 2 highlights the modes for realizing CSE from the literature.

Discussion

Our discussion is based on the main modes of CSE and the hypotheses made previously on the topic.

The enhancement and diversity of the CSE modes

According to Weiblen and Chesbrough (2015), corporations and startups have complementary characteristics. According to Weiblen and Chesbrough (2015), corporations and startups have complementary characteristics. Corporations possess resources, scale, power and the routines necessary to execute proven business models, but they often lack the adaptability, speed and technology that startups offer. Conversely, startups lack the economic and market power and customer access that large companies have. While large companies see the potential value in investing in startups, aligning these strengths is challenging (Simon, Harms, & Schiele, 2019; Prashantham & Madhok, 2023).

Despite its growth, CSE studies remain fragmented and lack unity (Giglio *et al.*, 2023). This fragmentation is partly due to varying taxonomies in the field, as no unified study guides the nomenclatures. Figure 4, created using VOSviewer for bibliometric network visualization,

Table 2. CSE modes

CSE modes	References	Weiblen and Chesbrough (2015)	Bonzom and Netessine (2016)	Mocker, Bielli and Haley – NESTA (2015)	Bannerjee, Bielli and HALEY – NESTA (2016)	Schättgen and MUR – MMV + ADL (2016)	Kohler (2016)	Saalasti (2016)	Thieme (2017)	Linna (2017)
Accelerators			X	X	X	X		X	X	X
Corporate venture capital	X					X	X	X	X	X
One-off events			X	X	X	X	X	X	X	
Mergers and acquisitions			X	acquisitions	acquisitions	X	X	X	X	
Corporate incubator	X						X	X		X
Co-working spaces			X	X	X			X	X	X
Platform and partnerships			X	X	X			X		
Business incubator			X	X	X	X	X	X	X	
Support services			X	X	X			X	X	
Spin-offs			X					X		
Outside-in startup programs	X							X	X	
Inside-out startup programs	X							X	X	
Technology outsourcing								licensing		
Supplier development								X		
Digital or innovation lab								X		
Pilot projects								X		
Channel partnerships								X		
Partner units										
Venture builder										
<i>Total</i>		4	8	7	7	5	5	14	9	4

CSE modes	References	Lucerga (2018)	Richardson (2020)	Rundquist and Österling (2018)	World Economic Forum (2018)	Carvalho (2019)	Brigl <i>et al.</i> (2019)	Kitsuta (2021)	100 Open STARTUPS (2021)	Total appearances
Accelerators			X	X	X	X	X	X	X	14
Corporate venture capital	X	X	X	X	X	X	X		X	13
One-off events	X	X	X	X		X			X	12

(continued)

Table 2. Continued

CSE modes	References	Lucerga (2018)	Richardson (2020)	Rundquist and Österling (2018)	World Economic Forum (2018)	Carvalho (2019)	Brigl <i>et al.</i> (2019)	Kitsuta (2021)	100 Open STARTUPS (2021)	Total appearances
Mergers and acquisitions	acquisitions		X	acquisitions					X	11
Corporate incubator	X	X	X	X	X	X	X	X		11
Co-working spaces			X	X		X			X	9
Platform and partnerships			X	partnerships	X		partnerships			8
Business incubator	X									8
Support services			X	X		X			X	8
Spin-offs	X	X	X							4
Outside-in startup programs								X		4
Inside-out startup programs										3
Technology outsourcing				X					X	3
Supplier development			X		X					3
Digital or innovation lab	X	X	X				X			3
Pilot projects			X						X	3
Channel partnerships				X					X	3
Partner units					X		X			2
Venture builder								X		1
<i>Total</i>		7	12	10	6	6	6	4	9	

Note(s): MUR: surname of the author, Schattgen and Mur, 2026; MMV: stands for match-maker ventures. and ADL: abbreviation for Arthur D. Little, a global consulting firm
Source(s): Authors' own work

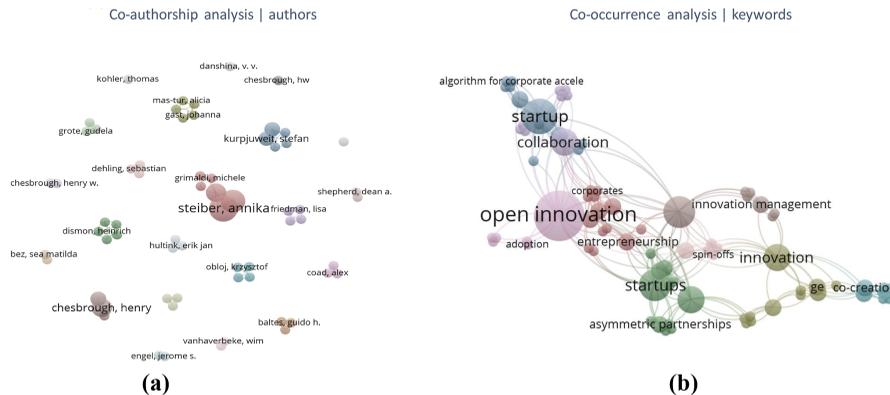


Figure 4. Bibliometric analysis

shows keyword co-occurrence and co-authorship. In Image A, authors often work in silos with little connection, with Annika Steiber and Henry Chesbrough being prominent in the SLR results. Image B highlights the predominance of “open innovation” and “startups” as key terms.

Companies can seek external innovation by engaging with startups through various modes, ranging from robust options like corporate venture capital and venture builders (Kitsuta, 2021) to lighter approaches such as challenges and informal engagement (Bagno *et al.*, 2020). Weiblen and Chesbrough (2015) conclude that there is no best model for engagement because each model has its virtues and challenges; companies should select the model that best fits their goals.

As observed in the SLR, the most prominent engagement mode is the accelerator, focusing on startups with high scaling potential alongside corporations. This mode has gained significant traction as large corporations establish their own accelerators or partner with existing ones. It is a low-risk mechanism that doesn’t require substantial investments. On the other hand, corporate venture capital is one of the vehicles that require the most resources and control; however, the return is proportional to the risk.

Other potential engagement modes are gaining relevance. Beyond traditional models like hackathons, M&A and digital or innovation labs, there has been a significant shift in the corporate world. Large companies are now creating programs and initiatives that offer additional support to startups, such as fostering the creation of internal startups for spin-offs, utilizing venture builders for joint business creation and conducting proof of concept or pilot projects to integrate innovative solutions from startups.

As a finding, we identified numerous references discussing modes of engagement and synthesized 19 distinct CSE modes. This synthesis was necessary due to the varying taxonomies used by different authors and the continuous emergence of new forms in the practical field. By aligning each author’s definitions, we consolidated the main modes evidenced today. Figure 5 presents these modes in a new configuration. To further clarify the CSE field and its modes, Appendix 1 provides definitions from the authors.

The modes of engagement between corporations and startups then vary according to the intentions of the companies and the needs to be fulfilled. Thus, the modes can be altered based on short-, medium- or long-term objectives; financial and/or strategic intentions; direction of the innovation flow, from outside to inside and from inside to outside, and degrees of involvement risk, among others. Within each typology, a specific mode of CSE may be more suitable.

From a contextual analysis of innovation through entrepreneurship, it is evident that the market’s dynamism and agility encourage collaboration between corporations and startups (H1). Despite their differences, these entities have complementary characteristics that drive

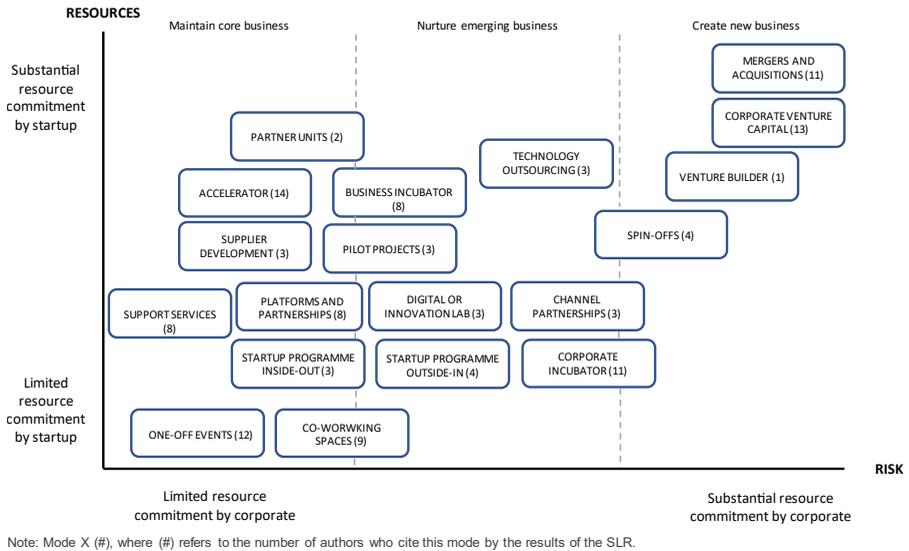


Figure 5. Modes of corporate-startup engagement

their partnership. However, although CSE is becoming more common, our hypothesis (H2) was confirmed: there is no consolidated knowledge about the main modes of engagement. Only the most frequent modes are reported, not necessarily the most effective for companies.

Conclusions

Through the studies that were part of this work, CSE imposes itself as an innovation mechanism to enable the strengths of startups and corporations, and despite the difficulties that still exist, it is growing in the ecosystem because of the enormous value it can generate, much for the various distinct modes of CSE that serve corporations and startups in their distinct needs.

Various engagement methods arise, differing in relationships between parties, types of partners, stages of innovation and knowledge acquisition methods. Consequently, several types of relationships can be identified based on the objectives and strategies of the organizations involved, ranging from specific short-term actions to more complex, long-term initiatives.

Implications and avenues for further research

This paper synthesizes the primary modes of CSE through an SLR. Despite ongoing skepticism, startups and corporations are leveraging these methods to enhance their strategies and create value. The main contribution of this study is the synthesis of key modes for implementing CSE programs. While the topic is still emerging as a formal field of study, it is well established in practice. Therefore, further research is recommended, including case studies from both corporate and startup perspectives.

From a practical perspective, this study solidifies CSE as a market practice by detailing its various modes. It provides valuable insights for business managers and startup founders on the current landscape, how to leverage it and the most effective strategies for achieving their goals.

Based on the SLR conducted on CSE, we identified potential research avenues for each engagement mode, with at least one reference per mode. Table 3 outlines these future study directions.

Table 3. Directions for future research

Directions for future research		
Modes of CSE	Avenues of research	Reference author
Accelerators	According to Kohler (2016), corporate accelerators address some questions to program leaders, such as: (a) How can we align our corporate objectives with startups' expectations? (b) How can we make it easy for startups to work with us? (c) How can we identify the right startups to accelerate? (d) How do we manage the interactions between executives and managers with startup teams?	Kohler (2016)
Corporate venture capital	Corporate venture capital studies in the field of CSE focus on the relationship between taking an equity stake in external startups to participate in the success of external innovation and obtaining strategic insights in non-core markets, but little is discussed about the governance of the organization-investor relationship, performance metrics and degree of control over investment	Thieme (2017) and Brigl et al. (2019)
One-off events	Focused on image enhancement both in the market as well as towards employees and potential employees. Targets early-stage startups. Kohler (2016) mentions corporate hackathons as an unsubstantial short-term corporate startup engagement, but does not elaborate it further	Schätngen and Mur (2016), Kohler (2016) and Thieme (2017)
Mergers and acquisitions	The path of corporate engagement with startups involves a few steps until reaching more robust and complex initiatives, for example M&A. After the learning and partnership phases, the "own" phase involves some corporate objectives, such as entering new markets and problem solutions. How to make this open innovation model work end-to-end is something that still has no studies, looking at the whole deal flow from the objectives involved	Bonzom and Netessine (2016) and Lucerga (2018)
Corporate incubator	More research is needed to identify the differences between independent programs and corporate programs, and to search for concrete patterns for success in corporate programs. Helping more corporations collaborate with startups would have a positive impact to all stakeholders. At this point, it is unknown whether or not these patterns exist	Linna (2017)
Co-working spaces	Co-working spaces are directly related to support services, including taking on space at a co-working facility in order to station staff on-site to interact with startups and entrepreneurs. One way to delve into this mode of CSE is to analyze it from: (a) level of effort; (b) cost; (c) timeline; and (d) level of commitment	Carvalho (2019)
Platform and partnerships	A lot is said about corporate-startup collaboration, but when to approach for a actually start a partnership? How to be a platform for scalability of the two parts? There is no sure way about the ideal time to climb together	Bannerjee et al. (2016)
Business incubator	Business incubator offers programs to support startups in exchange for equity capital. In any case, there is a lot of difficulty, given the lack of maturity of the programs, in understanding the best way to offer value in exchange for receiving equity. This ceded equity is sometimes not very well assimilated by startups, so investigating value addition is essential	Schätngen and Mur (2016)

(continued)

Table 3. Continued

Directions for future research		Reference author
Modes of CSE	Avenues of research	
Support services	The support services that companies offer to startups can be a relatively inexpensive way for companies to build a more innovative brand. However, it is important to understand that these programs, especially the provision of free tools, provide a less immediate return in terms of business relationships. Again, considering and testing why startups would use free resources and ensuring that these resources meet the requirements of entrepreneurs is pivotal	Mocker et al. (2015)
Spin-offs	Mixing intrapreneurs with entrepreneurs is one way to have an impact on culture and to generate more internal innovations and spin-offs. However, companies need to have a clear roadmap of how to deal with spin-offs, both by the separate model of the investing organization, and by governance and alignment with objectives	Bonzom and Netessine (2016)
Outside-in startup programs	“Given their position as the interface to the startup world, the corporate units running outside-in startup programs need to bridge the gap to the corporate world. Their job does not end with a successful prototype or proof-of-concept ready to be transferred to a regular business unit for market launch. Rather, they need to push this external innovation internally to make sure its market launch will eventually happen and the project’s results don’t go by the wayside. The organizational interface with the core business is hence a highly critical point in an outside-in program.”	Weiblen and Chesbrough (2015)
Inside-out startup programs	The aim of inside-out platform startup programs is to expand the current markets of corporations. The inside-out platform startup programs are carefully designed and structured, but may not be as limited in time as outside-in programs. This time tends to bring greater possibilities of return, but needs greater governance to achieve success, which is not yet explored	Saalasti (2016)
Technology outsourcing	When entering a CSE program, it is important to understand what competencies can be outsourced. For example, if the software development of the core product/business is outsourced this implies that someone outside of the company is responsible for this	Rundquist and Österling (2018)
Supplier development	If corporates work only with established tech providers, they risk missing out on potential new sources of revenue: buying from an innovative start-up may give a corporate a competitive edge. Startups may also simply outperform existing solution providers to corporate clients because they have less overhead costs, and a stronger innovation focus	World Economic Forum (2018)
Digital or innovation lab	Corporate facility supporting startups with early stages of conception, design and production of products and services. Aimed to develop prototypes. It is a way of investigating the question of equity. Not necessarily, but corporates may take equity positions in the most promising ventures	Lucerga (2018)

(continued)

Table 3. Continued

Directions for future research		
Modes of CSE	Avenues of research	Reference author
Pilot projects	New product development, market opportunity exploration and new technology development are reasons for corporate-startup pilot projects. Pilot projects include funding, and from the perspective of the corporations the core of these projects is to innovate externally at a lower cost. It may be worth investigating the relationship in which companies can use startups as their suppliers and, therefore, be customers of startups	Saalasti (2016)
Channel partnerships	Advice how to set up the channel to the market in the best way, including sales channels, production and delivering. This is a topic that needs greater clarity, especially with regard to how to put this model to work in practice, in order to serve both corporations and startups	Rundquist and Österling (2018)
Partner units	Innovation vehicles that focus on transforming the core business—as partnership units do—are usually geographically close to corporate headquarters because they require easy access to corporate assets and business units	Brigl <i>et al.</i> (2019)
Venture builder	The case of Venture Builder shows the existence of conflicts in the relationships between the executive proponent of the engagement initiative and the company’s top leadership. The relationships between innovation and venturing managers and the top leadership of the organization deserve deepening. It is necessary to study more in depth what already exists and to have the necessary entry into this type of organization on the part of researchers for a result more faithful to reality	Kitsuta (2021)

Source(s): Authors’ own work

Finally, in addition to what the authors themselves identify (Table 3), a future agenda could involve “design science research” to both advance theory and achieve empirical validation in management practice. One proposal is to develop an artifact that extends the insights from CSE studies to both academics and practitioners, enhancing the effectiveness of these engagements. Additionally, we recommend future studies explore the primary reasons and challenges associated with implementing such approaches.

References

- Anthony, S. D., Gilbert, C. G., & Johnsons, M. W. (2017). *Dual transformation: How to reposition today’s business while creating the future* (pp. 1–272). Boston, MA: Harvard Business Review Press. 1st ed. [S.l.].
- Bagno, R. B., Salerno, M. S., Souza Junior, W. C., & O’Connor, G. C. (2020). Corporate engagements with startups: Antecedents, models, and open questions for innovation management. *Product: Management & Development*, 18(1), 39–52. doi: [10.4322/pmd.2019.019](https://doi.org/10.4322/pmd.2019.019), in Call for Papers: Innovation management in incumbent companies and new ventures in the age of innovation ecosystems.
- Bannerjee, S., Bielli, S., & Haley, C. (2016). Scaling together: Overcoming barriers in corporate-startup collaboration. Available from: https://media.nesta.org.uk/documents/scaling_together_.pdf (accessed 8 September 2021).

- Bonzom, A., & Netessine, S. (2016). How do the world's biggest companies deal with the startup revolution?. Available from: https://cdn2.hubspot.net/hubfs/698640/500CORPORATIONS_-_How_do_the_Worlds_Biggest_Companies_Deal_with_the_Startup_Revolution_-_Feb_2016.pdf (accessed 12 September 2021).
- Brigl, B., Gross-Selbeck, S., Dehnert, N., Schmiegl, F., & Simon, S. (2019). After the honeymoon ends: Making corporate-startup relationships work. Available from: <https://www.bcg.com/pt-br/publications/2019/corporate-startup-relationships-work-after-honeymoon-ends> (accessed 16 November 2021).
- Burgelman, R. A. (1983). A model of the interaction of strategic behavior, corporate context, and the concept of strategy. *Academy of Management Review*, 8(1), 61–70. doi: 10.2307/257168.
- Carvalho, L. L. M. (2019). *Corporate innovation through Engagement with startups: Searching for sustained competitive advantage?*. Dissertation. Rio de Janeiro: COPPEAD - University of Rio de Janeiro.
- Chesbrough, H. W. (2003). *Open innovation: The new imperative for creating and profiting from technology*. Boston, Massachusetts: Harvard Business Press.
- Ching, H. Y., & Caetano, R. M. (2021). Dynamics of corporate startup collaboration: An exploratory study. *Journal of Management Research*, 13(2), 22–47. doi: 10.5296/jmr.v13i2.18217.
- Corvello, V., Steiber, A., & Alänge, S. (2023). Antecedents, processes and outcomes of collaboration between corporates and start-ups. *Review of Managerial Science*, 17(2023), 129–154. doi: 10.1007/s11846-021-00510-8.
- Denysiuk, L. (2021). *Success factors for corporate-startup collaboration: An exploratory study investigating corporate-startup collaborations in the Austrian financial sector*. Dissertation – International Management and Leadership. Vienna: Lauder Business School.
- De Groote, J. K., & Backmann, J. (2020). Initiating open innovation collaborations between incumbents and Start-ups: How can David and Goliath get along?. *International Journal of Innovation Management*, 24(2), 2050011. doi: 10.1142/s1363919620500115.
- Docherty, M. (2015). *Collective disruption: How corporations & startups can Co-create transformative new businesses*. Boca Raton, FL: Polarity Press.
- Ermel, A. P. C., Lacerda, D. P., Morandi, M. I. W. M., & Gauss, L. (2021). *Literature reviews: Modern methods for investigating scientific and technological knowledge* (pp. 202). Cham, XVII: Springer.
- Freeman, J., & Engel, J. S. (2007). Models of innovation: Startups and mature corporations. *California Management Review*, 50(1), 94–119. doi: 10.2307/41166418.
- Giglio, C., Corvello, V., Coniglio, I. M., Kraus, S., & Gast, J. (2023). Cooperation between large companies and start-ups: An overview of the current state of research. *European Management Journal*, 43(1), 142–153. doi: 10.1016/j.emj.2023.08.002.
- Grando, N. (2016). *Beyond corporate venture capital: New ways corporations can engage with startups*. São Paulo: Faculdade de Economia, Administração e Contabilidade da Universidade de São Paulo.
- Gutmann, T., & Lang, C. (2022). Unlocking the magic of corporate-startup collaboration: How to make it work. In *IEEE Engineering Management Review*. doi: 10.1109/EMR.2022.3158490.
- Heratri, N., & Klang, C. (2019). *Collaboration between startups and corporations: A startup perspective*. Dissertation. Civil Engineering, Department Of Architecture And Civil Engineering. Göteborg: Chalmers University Of Technology.
- Hogenhuis, B. N., Van Den Hende, E. A., & Hultink, E. J. (2016). When should large firms collaborate with young ventures?. *Research-Technology Management*, 59(1), 39–47. doi: 10.1080/08956308.2016.1117329.
- Imaginaik & Masschallenge (2016). The state of startup/corporate collaboration. Available from: https://cdn2.hubspot.net/hubfs/1955252/SCC_2016/Startup_Corporate_Collab_2016_Report.pdf (accessed 9 July 2021).

- Innovation Leader (2021). The changing landscape of Corporate-Startup Engagement. Available from: <https://ilp.mit.edu/sites/default/files/public-surveys/Corporate-Startup-Engagement-Excerpt-Q3-2021.pdf> (accessed 15 May 2022).
- Jucá, M. C. C., & Alves, C. F. (2022). How do startups and corporations engage in open innovation? An exploratory study. in R. Guizzardi, J. Ralyté, & X. Franch (Eds.), *Research Challenges in Information Science. RCIS 2022* (Vol. 446). Cham: Springer. doi: [10.1007/978-3-031-05760-1_17](https://doi.org/10.1007/978-3-031-05760-1_17), Lecture Notes in Business Information Processing.
- Kitsuta, C. M. (2021). *Engajamento corporativo com startups: ambiente de negócios, capacidades em gestão da inovação e modos de engajamento*. Ph.D. thesis. Campinas, SP: Universidade Estadual de Campinas, Instituto de Geociências.
- Kitsuta, C., & Quadros, R. (2018). The boost of corporate-startup programs in Brazil: Are there differences between local companies and multinational subsidiaries? Are there sectoral patterns. In *R&D Management Conference*, Milan.
- Kohler, T. (2016). Corporate accelerators: Building bridges between corporations and startups. *Business Horizons*, 59(3), 347–357. doi: [10.1016/j.bushor.2016.01.008](https://doi.org/10.1016/j.bushor.2016.01.008).
- KPMG (2014). New horizons - corporates & startups: Hip, but not happening. Available from: <https://assets.kpmg/content/dam/kpmg/pdf/2016/05/new-horizons-2014-1.pdf> (accessed 13 April 2021).
- Krippendorff, K. (2004). *Content analysis: An introduction to its methodology* (Vol. 2, pp. 422). Thousand Oaks: Sage Publications. doi: [10.4135/9781071878781](https://doi.org/10.4135/9781071878781).
- Linna, E. (2017). *Corporate startup growth program*. Dissertation. Aalto University Learning Centre.
- Lucerga, R. J. V. (2018). *Open innovation strategy: A framework for corporate-startup collaboration*. Dissertation, Master of science in management of technology. Massachusetts, US: Massachusetts Institute of Technology.
- Maciel, J. R., Becker, J. B., Gomes, R. A., & Teixeira, C. S. (2018). A interação entre grandes empresas e startups: desafios da inovação aberta. *Revista Eletrônica do Alto Vale do Itajaí*, 7, 11. doi: [10.5965/2316419007112018001](https://doi.org/10.5965/2316419007112018001).
- March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2 (1), 71–87. doi: [10.1287/orsc.2.1.71](https://doi.org/10.1287/orsc.2.1.71).
- Mocker, V., Bielli, S., & Haley, C. (2015). Winning together: A guide to successful corporate-startup collaborations. Available from: <https://startupeuropepartnership.eu/wp-content/uploads/2015/06/Winning-Together-WEB2.pdf> (accessed 9 July 2021).
- Open Startups (2021). Overview of open innovation between corporations and startups in Brazil | 2016-2021. Available from: <https://www.openstartups.net/site/ebooks.html> (accessed 12 November 2021).
- Pisoni, A., Giovannoni, S., & Onetti, A. (2022). Critical barriers to overcome when corporates engage with startups. In O. L. Rua (Ed.), *Impact of Open Innovation on the World Economy* (pp. 242–261). doi: [10.4018/978-1-7998-8665-5.ch010](https://doi.org/10.4018/978-1-7998-8665-5.ch010).
- Prashantham, S., & Madhok, A. (2023). Corporate - startup partnering: Exploring attention dynamics in asymmetric settings. *SSRN Electronic Journal*. doi: [10.2139/ssrn.4539533](https://doi.org/10.2139/ssrn.4539533).
- Richardson, A. W. (2020). The 10 ways corporations can engage with startups. *Gearbox*, 2019. Available from: <https://www.gearbox.ai/blog/the-10-ways-corporations-can-engage-with-startups-complete-guide> (accessed 12 June 2021).
- Rossi, M., Festa, G., Papa, A., & Scorrano, P. (2019). Corporate venture capitalists' ambidexterity: Myth or truth?. *IEEE Transactions on Engineering Management*, 68(2), 1–12. doi: [10.1109/TEM.2019.2903984](https://doi.org/10.1109/TEM.2019.2903984).
- Rundquist, E., & Österling, A. (2018). *Critical success factors in the offering of a corporate-startup program*. Dissertation. Lund University.
- Saalahti, S. (2016). *Startup activities of established Finnish companies*. Tampere, Finland: Master's Thesis, Management & Organization, School Of Management, University of Tampere.

- Schättgen, N., & Mur, S. (2016). *The age of collaboration*. Technical report, Arthur D. Little, MatchMaker Ventures and Telecom Council of Silicon Valley. Vienna. Available from: https://www.adlittle.com/sites/default/files/viewpoints/ADL_MatchMaker_The_Age_of_Collaboration.pdf (accessed 11 July 2021).
- Schwartz, B. (2014). *The paradox of choice: Why more is less*. New York: HarperCollins.
- Simon, F., Harms, R., & Schiele, H. (2019). Managing corporate-startup relationships: What matters for entrepreneurs?. *International Journal of Entrepreneurial Venturing*, 11(2), 164–186. doi: [10.1504/IJEV.2019.098770](https://doi.org/10.1504/IJEV.2019.098770).
- Soni, N. (2018). *The startup gold mine: How to tap the hidden innovation agendas of large companies to fund and grow your business* (Vol. 1, pp. 1–250). New York, NY: Amacom.
- Steiber, A., & Alänge, S. (2020). An empirical test of an analytical framework for evaluation of different corporate-startup collaboration models. *Journal of Technology Management and Innovation*, 15(3), 40–51. doi: [10.4067/S0718-27242020000300040](https://doi.org/10.4067/S0718-27242020000300040).
- Steiber, A., Alänge, S., & Corvello, V. (2021). Evaluating corporate-startup co-creation: A critical review of the literature. *International Journal of Innovation Management*, 25(7). doi: [10.1142/s1363919621500730](https://doi.org/10.1142/s1363919621500730).
- Sudati, E. (2016). *Analysis of the strategic interaction among established corporations and startups in Italy*. Dissertation. Milan, Italy: Politecnico Milano 1863.
- Thieme, K. (2017). *The strategic Use of corporate-startup engagement*. Dissertation. Delft: Delft University of Technology.
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14(3), 207–222. doi: [10.1111/1467-8551.00375](https://doi.org/10.1111/1467-8551.00375).
- Tushman, M. L., & O'Reilly, C. A.III (1996). Ambidextrous organizations: Managing evolutionary and revolutionary change. *California Management Review; Summer*, 38(4), 8–30. doi: [10.2307/41165852](https://doi.org/10.2307/41165852).
- Varesco Kager, N., Sparr, J. L., & Grote, G. (2022). Looking for guidance? Five principles for leveraging tensions in corporate–startup collaboration. *The Journal of Applied Behavioral Science*, 58(4), 682–715. doi: [10.1177/00218863221117850](https://doi.org/10.1177/00218863221117850).
- Viki, T., Toma, D., & Gons, E. (2017). *The Corporate Startup: How established companies can develop successful innovation ecosystems* (Vol. 1). Utrechtseweg: Vakmedianet.
- Weiblen, T., & Chesbrough, H. W. (2015). Engaging with startups to enhance corporate innovation. *California Management Review*, 57(2), 66–90. doi: [10.1525/cmr.2015.57.2.66](https://doi.org/10.1525/cmr.2015.57.2.66).
- World Economic Forum (2018). *Collaboration between start-ups and corporates: A practical guide for mutual understanding*. Geneva, Switzerland: White Paper. Available from: https://www3.weforum.org/docs/WEF_White_Paper_Collaboration_between_Start-ups_and_Corporates.pdf (accessed 11 July 2021).
- Younis, Z., Desai, A., & Sigal, M. (2016). Unlocking innovation through startup engagement: Best Practices from leading global corporations. [s. L.]: 500 startups. Available from: <https://go.500.co/unlockinginnovation> (accessed 14 July 2021).
- Yrttimaa, T. (2021). *Reasons and methods for corporations to systematically engage with startups*. Ph.D. thesis. Industrial Engineering and Management, School of Science. Helsinki: Aalto University.

Further reading

- Steiber, A. (2020). Corporate-startup collaboration: Its diffusion to and within the firm. *Triple Helix*, 7 (2-3), 250–276. doi: [10.1163/21971927-bja10005](https://doi.org/10.1163/21971927-bja10005).

Supplementary material

The supplementary material for this article can be found online.

About the authors

Kaique Sbampato is Doctoral student with a Master's in Management and Innovation from the Production Engineering Program (PEP-UFRJ). Kaique has been honored as an outstanding doctoral and academic master's student by PEP-UFRJ and ANPEPRO. Kaique graduated in Department of International Defense and Strategic Management at the Federal University of Rio de Janeiro - academic dignity Summa Cum Laude. Kaique holds the position of a faculty member in postgraduate studies (MBA) at the Polytechnic School of Universidade Federal do Rio de Janeiro (UFRJ) and serve as Guest Professor at Alumni COPPEAD (UFRJ). Currently, Kaique Sbampato is researching corporate-startup engagement, corporate innovation and corporate venture builders.

Adriano Proença holds a degree in Production Engineering from the Federal University of Rio de Janeiro (1985), a specialization degree in Industrial Automation from the Ecole Nationale d'Ingenieurs de Tarbes (ENIT/France, 1987), a Master's degree in Production Engineering from the Federal University of Rio de Janeiro (1987) and a Ph.D. in Production Engineering from the Federal University of Rio de Janeiro (1994), with a post-doctoral fellowship at Warwick University (UK, 1991–92). He is currently Associate Professor at the Industrial Engineering Department of the Polytechnic School and collaborator of the Production Engineering Program of COPPE - Federal University of Rio de Janeiro (UFRJ). He develops activities in teaching, research, development and innovation in production engineering, working mainly in strategic management, strategic management of technology and innovation, business strategy and organizations.

Edison Renato Silva holds a Ph.D. and Master in Production Engineering from COPPE/UFRJ. He is Professor at the Industrial Engineering Department of the Polytechnic School and the Management and Innovation area of the Production Engineering Program at Coppe/UFRJ. He works in the field of (1) startup entrepreneurship process, (2) corporate-startup engagement and (3) entrepreneurship and engineering teaching. He is the Winner of the Sebrae Entrepreneurial Education Award, State (Rio de Janeiro (RJ)) and Southeast Stage, Higher Education category, 2019 as well as the Medal of the City of Pilcuyo, Peru (2016). He completed the University of Berkeley training - Lean Launchpad Program. Part of his doctoral research was conducted under the guidance of Professor Emeritus Joan Van Aken, Technische Universiteit Eindhoven. He has a degree in Production Engineering from UFRJ, with academic dignity Cum Laude. He was a Productive Extension Fellow (Innovation Development and Transfer (DTI)) for CNPq, Adjunct Professor at UNIRIO and Substitute Professor at UERJ. Edison Renato Silva is the corresponding author and can be contacted at: edison@poli.ufrj.br

Associate editor: Dennys Eduardo Rossetto