UNIVERSIDADE FEDERAL DO RIO DE JANEIRO

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CORPORATE INNOVATION THROUGH ENGAGEMENT WITH STARTUPS:
searching for sustained competitive advantage?

RIO DE JANEIRO
2019

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CORPORATE INNOVATION THROUGH ENGAGEMENT WITH STARTUPS: Searching for sustained competitive advantage?

1 volume

Master's dissertation presented to the Instituto Coppead de Administração, Universidade Federal do Rio de Janeiro, as part of the mandatory requirements in order to attain the degree of Master in Business Administration (M.Sc.).

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Rio de Janeiro
2019

CIP - Catalogação na Publicação

C331c

Carvalho, Luciana Lima Melik de
CORPORATE INNOVATION THROUGH ENGAGEMENT WITH STARTUPS: SEARCHING FOR SUSTAINED COMPETITIVE ADVANTAGE? / Luciana Lima Melik de Carvalho. -- Rio de Janeiro, 2019.
97 f.

Orientadora: Elaine Tavares.
Coorientador: Sergio Yates.
Dissertação (mestrado) - Universidade Federal do Rio de Janeiro, Instituto COPPEAD de Administração, Programa de Pós-Graduação em Administração, 2019.

1. Open innovation. 2. Corporate innovation. 3. Startup engagement. 4. Innovation strategy. I. Tavares, Elaine, orient. II. Yates, Sergio, coorient. III. Título.

Elaborado pelo Sistema de Geração Automática da UFRJ com os dados fornecidos pelo(a) autor(a), sob a responsabilidade de Miguel Romeu Amorim Neto - CRB-7/6283.

[folha de aprovação]

ACKNOWLEDGEMENTS

I would first like to thank my two advisors: Professor Elaine Tavares from COPPEAD, as well as Sergio Yates, both of whom were critical in guiding this process and always available as a sounding board for ideas, questions, and insights. Both of them encouraged the vision of this research to become a reality by allowing from the start that I set the objectives of the research as I understood to be relevant and interesting. I would also like to thank the committee members participating in the defense presentation of this project.

I would also like to share my enormous appreciation to the seven subjects who participated in the study. It is clear that this research would not have been possible without the open and honest participation of the interview subjects and their firms, and the information they shared have been beyond insightful not only for the analysis here but hopefully for other executives and business managers that look to this research as a source of information and inspiration.

Lastly, I want to express my deep gratitude to my family and my partner who have been a source of constant support, care, and encouragement throughout this process. I would also like to thank our dog, for sitting patiently by my side while I listened to and analyzed hours of recorded interviews for this research. This accomplishment would not be possible without them. Thank you.

ABSTRACT

CARVALHO, Luciana Lima Melik de. Corporate Innovation Through Engagement with Startups: searching for sustained competitive advantage?. Rio de Janeiro, 2018. Dissertação (Mestrado em Administração) --COPPEAD, Universidade Federal do Rio de Janeiro, Rio de Janeiro, 1996

This research explores the application of startup engagement mechanisms being utilized by firms in an attempt to foster corporate innovation. The field research has been conducted in Brazil with a variety of firms – ranging in size, location, and industry – all of which are currently implementing corporate innovation strategies that include startup engagement activities. It seeks to understand not only what mechanisms of startup engagement firms are utilizing, but also their motivations for doing so, barriers and difficulties encountered, and what firms see as advantages in implementing this type of strategy. The analysis also included a discussion of several practical aspects of the strategy as well as insights on the concept of the "angel client", all of which emerged from the research. In an effort to bring value business managers who may be seeking to implement startup engagement activities, this research also offers an objective list of best practices that have been identified through the field research.

Keywords: open innovation, corporate innovation, startup engagement, innovation strategy.

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ACRONYMS

BRL – Brazilian Reais (currency)
CA – competitive advantage
CI – Corporate incubator
CVC – Corporate venture capital
EUR – Euros (currency)
HQ – Headquarter
HR – Human resources
IP – Intellectual property
MVP – Minimum viable product
OECD – Organization for Economic Cooperation and Development
R&D – Research and development
SCA – Sustained competitive advantage
SCP – Structure-Conduct-Performance
USD – American Dollars (currency)
VC – Venture capital

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CORPORATE INNOVATION THROUGH ENGAGEMENT WITH STARTUPS: SEARCHING FOR SUSTAINED COMPETITIVE ADVANTAGE?

1. Introduction

1.1 The New Landscape of Competition

Within the past several decades it has become clear that the global proliferation of new technologies and other innovations – be it new products, business models, processes, or organizational changes – have spread much quicker than any other time. Although established companies are quite efficient at exploiting their resources and knowhow, they tend to fall behind competitors that are smaller and more agile when it comes to implementing new innovative offerings to their portfolio.

With a globalized landscape where information, technology, and capital are more accessible than ever before, large, well-established companies find themselves in a new paradigm of competition and survival where innovative new entrants can pose a significant threat to established companies and even entire industries.

According to the World Bank, in the ten years between 2006 and 2016, global internet usage close to tripled – seeing a rise from around 17.5% of the global population using the internet in 2006 to almost 48% in 2016. In the ten years previous to that the growth was even more staggering, with 1996 usage numbers hovering at close to 1% of the world population (World Bank, 2018). These numbers make it clear that access to information, knowledge, and new and improved products and services has rapidly increased across the world. Whereas before, companies introduced products and services into a select few markets at first, they can now easily do business across the world, accessing an abundance of customers that previously would have been very difficult to reach. This increased access to customers has also dramatically lowered the cost of doing business at a global scale. We no longer live in a world where only those companies with vast resources are able to fight for market share. Relative newcomers, and small to mid-size competitors can gain significant share of an industry with a much lower investment than was needed before – and they pose a real threat to firms who have been around and successful across countless industries (Christensen, 1997).

In addition to the impact of the internet on the spread of knowledge and information, as well as access to products and services (on the customers' side), and to plenty of customers (on the business' side), the world has also seen increased access to investment capital (Rowley,

2019). Startups currently have more access to venture capital investments than previous years[1], a fact that sheds light on the higher ability for long-term survival as a startup today as compared to before. Companies not only have their traditional competitors to worry about, but also must recognize this opportune atmosphere that small entrepreneurial ventures have as well.

All of these elements bring a new dynamic to the competitive environment that firms operate in. The security of survival long-held by established companies is under threat from more agile new entrants, and the scenario is no longer always advantageous for the incumbents (Foster & Kaplan, 2001). What we see now is that gone are the days where incumbents in an industry are protected merely by being there first. With the proliferation of technology throughout the world, and a democratization of business in the age of the internet, startups now pose a real threat to even the most established industries, and disruption is happening faster than ever before. Companies now face a new reality. While firms are realizing that their long-held sustained competitive advantage may not persist in the face of disruption, they also see that innovation can be a catalyst to success (Kuratko, 2009).

In addition to the larger sums of venture capital going to startups, there has also been an expansion over the past decade of the support network surrounding those firms. Whereas years ago it was mostly government and academic-backed programs that fomented the startup networks, today there is a wide range of services, incubators, and acceleration programs, among other types of support. Beyond the traditional models of support, there has also been a major shift in the corporate world, where large companies have set up programs and initiatives that provide some sort of support for startups. In 2016, BCG's study of 210 top firms across seven industries showed that there was a significant increase in the use of corporate venture capital, accelerators, incubators, and innovation labs within those firms between 2010 and 2015. The survey results emphasize that "the rapidly increasing pace of change and the proliferation of new technologies are making these new models competitive necessities, not optional activities" (Ringel, Taylor, & Zablit, 2017, p. 11).

It is important to point out that disruption and fierce competition does not solely stem from technological and product innovation. It is not uncommon to see established firms losing ground to startups due to innovations in other dimensions such as marketing, production process, business model, pricing strategies, and new organizational structures. It is easy to come up with major recent examples where a startup has grown quickly through an innovation

[1] Rowley (2019) notes a 32% increase in venture capital deal volume, as well as 42% increase in the dollar amount of those deals year-over-year from 2017 to 2018 in VC funding.

and posed a real threat to established corporations – or even in some cases completed decimated incumbent businesses. Companies like Airbnb, Netflix, and Amazon are very obvious examples of this phenomena, with the latter two driving two enormous competitors fully out of business – Blockbuster in the case of Netflix, and more recently Sears (commonly known as "the original everything store") in the case of Amazon (Corkery, 2018).

With the world of business being flatter than ever, and innovation is moving at the speed of light. Large companies that have entrenched corporate structures that lack flexibility and the agility needed to seek innovation run the serious risk of eventually being left behind by new entrants. While startups may have many less resources at their disposal, they have the speed and adaptability to get the products that match today's needs into the market much quicker than their incumbent competitors.

1.2 The Need to Embrace Change

Joseph Schumpeter's *Capitalism, Socialism, and Democracy* (1942) dives into the question of whether or not capitalism can survive. Although this is not the exact focus of this research, Schumpeter's work does give us important insights to the conditions of capitalism, which ring true many decades later and continue to be extremely relevant when assessing firms even today. Schumpeter's view is that capitalism is not, nor can it ever be stationary:

> "The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumer's goods, the new methods of production or transportation, the new markets, the new form of industrial organization that capitalist enterprise creates" (Schumpeter, 1942, p. 83)

This book introduces us to the concept he dubs the 'process of Creative Destruction,' which he perceives as a vital characteristic of capitalism. Schumpeter defines creative destruction as a "process of industrial mutation … that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one." (Schumpeter, 1942, p. 83). He goes on to explain that within this paradigm of creative destruction, where the economy keeps moving through the creation of new products and processes, new markets, and new forms of organization, the traditional modus operandi of firms when it comes to competition must change. Schumpeter recognizes that at the time of his writing the majority of competition strategy was related to pricing. He was also farsighted enough to mention that once firms began to compete on quality and sales effort this prioritization of price-based competition would end. Schumpeter's vision, however, went

beyond these more rigid elements of competition, as his understanding of the capitalist system calls for competition to be focused on the new products, new technologies, new sources of supply, and new types of organization. As he puts it more succinctly:

> "competition which commands a decisive cost or quality advantage and which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives. … Competition of [this] kind … acts not only when in being but also when it is merely and ever-present threat." (Schumpeter, 1942, pp. 84-85)

Schumpeter's vision that relentless change is a main characteristic of capitalism consequently brings the notion that competition must focus on this change, rather than the traditional elements of competition that so often capture the majority of firms' attention (Schumpeter, 1942).

Foster and Kaplan (2001) investigate the long-term performance of firms, and argue that companies, in order to survive, must let go of the assumption of continuity of the firm and ultimately embrace the concept of creative destruction. Companies tend to operate with an assumption of continuity – believing that as long as they are remaining efficient and competitive, they will continue to survive. Survival may be the case, but they are unlikely to earn average or above-average returns this way. On the other hand, the capital markets do not operate in this manner. It operates instead on the assumption of discontinuity where it encourages rapid creation that leads to greater wealth building while at the same time being less tolerant of underperformers, who may eventually be destructed within this paradigm of discontinuity. Foster and Kaplan (2001) embrace Schumpeter's (1942) concept of creative destruction and agree with him that companies must be aware of this environment they operate in, which brings constant, ruthless change. In their view, companies must be able to balance the management of current operations with the cultivation of an environment that encourages innovation and new ideas to thrive.

Large corporations are starting to accept that in a dynamic business environment, being the incumbent and having vast resources no longer guarantees longevity. As a result, corporate strategy today is experiencing a shift. The threat of unexpected substitutes is real, and unless companies embrace the reality that the system within which they exist demands that they embrace creative destruction (and therefore innovation) and operate under the paradigm of discontinuity, they run the risk of losing the competitive advantage they may have comfortably held for decades. It is not surprising, then, that large companies today are expanding their

innovation scope from highly-funded R&D department, towards a more diversified portfolio of innovation catalysts.

This research analyzes corporate innovation strategy at established companies, looking specifically at those strategies that include some type of mechanism for engaging with startups. The objective of this research is not only to understand the activities of corporate innovation through startup engagement, but also what motivates the pursuit of this type of strategy, what barriers and difficulties the companies face when utilizing this type of strategy, and their view of what advantages the implementation of activities of startup engagement bring.

The research at hand is of a qualitative nature, with data collection taking place through interviews with executives at companies implementing this type of strategy. There we a total of seven participants in the study who took part in open-format interviews lasting on average one hour. These interviews covered a range of topics with the objective of uncovering right insights into startup engagement strategies at these firms, as well as better-understanding their motivations, barriers, and perceived advantages regarding implementing these activities.

The research seeks to utilize literature from the strategic management as well as from innovation to frame the field research and the analysis and discussion of the data collected. In the strategic management we take a look at various schools of thought on the subject and ponder the concept of sustained competitive advantage. The strategic management literature posits a lot of the framework covering the motivation for implementing these strategies, as well as the advantages for doing so. With the innovation literature, on the other hand, we seek to better understand the objective topic at hand – corporate innovation and startup engagement.

It is the author's hope that this research can also be transcendent and useful outside of academia. With this in mind, the research also seeks to shed light on practical and useful insights for managers and corporate leaders alike. The research is concluded therefore with a straightforward list of best practices as it concerns the topic of corporate engagement through startup engagement.

2. Literature Review

The literature review for this research touches on a number of different disciplines and is therefore organized in several subsections in order to maintain coherence in the discussion of each. In the following sections, literature from the disciplines of strategic management and innovation are discussed. The objective in diving into to these diverse fields within the literature review is to set the stage for the analysis of the research conducted. In looking at the

field of corporate innovation, and especially in seeking to understand not only what companies are doing in regard to engaging with startups but also the reasoning and motivations behind these types of strategies, it quickly becomes apparent that this is something that falls within several disciplines. Like most things in business, decisions are not taken with consideration of only one single field of knowledge, and it therefore became clear that in order to maintain coherence with the analysis, the literature review would need to speak to several disciplines that influence this type of strategy.

The section on strategic management focuses on the theories related to competitive advantage. In particular, I examine several different views of competitive advantage literature, which include the industrial organization theory, the resource-based view, the knowledge-based view, and finally the dynamic capability approach. Next, there is a review of literature touching on the concept of the entrepreneurial firm, and finally concepts related to innovation, as well as the various mechanisms of startup engagement discussed in this research are explored.

With the broad scope of this literature review, it is also important to note that indubitably this is not an exhaustive review of the literature on these subjects. It has, however, the objective of being extensive enough to set the tone for the research undertaken for this research. In concluding this section, the gaps in the literature are also identified.

2.1 Strategic Management - Competitive Advantage

The literature on business strategy is well-established and the filed has been developed over many decades. In this time, there has been several different schools of thought that guide strategists, and a lot of the literature tends to fall to two sides. First, early strategic theories that looked mainly at the environment outside of a company as the elements that should guide company strategy. Decades later, there was a seismic shift from this environmental view to a resource-based view, which has had several related schools of thought that have sprung directly from it, including the knowledge-based view and dynamic capabilities view which are both also discussed below.

2.1.1 Industrial Organization Theory

The industrial organization view of business strategy looks at the firm strategically based on external factors that influence it. This school of thought argues that external industry and market factors are what ultimately shape the firm's performance. J.S. Bain's work (Industrial Organization, 1968) developed what is known as the Structure-Conduct-

Performance (SCP) paradigm, which focuses on how industry structure influences firm performance. Bain focuses on how four elements impact the market structure, these being: (1) supply (number of competitors), (2) demand, (3) product differentiation, and (4) entry barriers. Bain's view is that the way that firms decide to act and therefore their ultimate performance levels are a result of the environment that firm is a part of.

Porter's (1979) "How Competitive Forces Shape Strategy" builds further on Bain's SCP model. Porter introduces his five forces model in which he points to five forces that influence competition within an industry: (1) the threat of new entrants, (2) the bargaining power of customers, (3) the thread of substitute products and services, (4) the bargaining power of suppliers, and (5) competing for a position among competitors in your industry (Porter, 1979). Porter's model reinforces that the strength that the firm has within its market is what ultimately influences its performance among competitors.

The industrial organization approach put the emphasis of competitive advantage on how firms act and are positioned in relation to what is going on around them – not necessarily what it is going on inside of the firm itself. Porter suggests that firms take a three-pronged approach whereby they position the company in a way that its capabilities can defend it against competitive forces, it seeks to influence the forces through strategic moves, and that it also anticipates potential changes in forces and find ways to respond to and exploit those changes.

2.1.2 Resource-based View

Before the resource-based view got its name, an economist by the name of Edith Penrose published *The Theory of the Growth of the Firm* (1959) in which she analyzes the conditions that contribute to the growth of companies. Penrose's (1959) view contrasts with Porter's (1979) as she focuses on the resources of the firm instead of the industry circumstances. This notion of looking-internally to the company's resources eventually gains the name "resource-based view" in Birger Wernerfelt's article "A Resource-based View of the Firm" (1984).

Wernerfelt defines a resource as "tangible and intangible assets which are tied semi permanently to the firm" and his paper seeks to expand on "under which circumstances will a resource lead to high returns over longer periods of time" (Wernerfelt, 1984, p. 172). This article posits that in utilizing the resource-based perspective, diversified firms can devise their strategies to address several significant matters such as which resources to base their diversification on, what resources to develop, in what order and which markets should they diversify, and which other firms may be of interest for them to acquire. His paper pushes forth

that this view helps firms gain additional insights that the traditional market-based view does not produce, as well as understanding which resources may yield significant profits, understand the balance that firms must strike "between the exploitation of existing resources and the development of new ones" (Wernerfelt, 1984, p. 172), and the fact that acquisitions can be considered a method of obtaining a bundle of rare resources that can yield good returns.

Wernerfelt interestingly takes an approach of comparing the duality between resources and products in this paper, which gives it also a place in the literature of being the bridge crossing from Porter's five forces model into a fully resource-based view. He applies some of Porter's forces to the resource-based view, such as looking at barriers of entry in the perspective of resource position barriers.

Within the school of resource-based strategic management theory, another author is widely regarded as moving the literature forward. In his 1991 article "Firm Resources and Sustained Competitive Advantage", Jay Barney pushes forward from Wernerfelt's investigation of conditions that help resources yield high returns and goes into the realm of sustained competitive advantage by discussing the conditions that lead firm resources to become a source of this sustained competitive advantage (Barney, 1991).

The author begins by clarifying that the market based view of assessing competitive advantage presumed two assumptions to be true: (1) that firms with a certain group or industry have the same access to resources and types of strategies they practice, and (2) that resources are highly mobile, so in the case of firms having varied resources among each other (what Barney calls "resource heterogeneity") that this would be short-lived, since based on the first assumption all firms have the same access to resources, a new entrant in an industry would soon be able to access the same resources as everyone else. On the other hand, he explains, the resource-based view takes the following two assumptions into consideration: (1) that there may indeed be resource heterogeneity among firms, and that (2) resources are not perfectly mobile, therefore allowing for resource heterogeneity to be long-lasting.

Barney defines firm resources as "all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness", and in other words "strengths that firms can use to conceive of and implement their strategies" (Barney, 1991, p. 101). He categorizes firm resources into three groups: physical capital resources, human capital resources, and organizational capital resources, and points out that not all of the firm's resources are strategically relevant.

He also takes care to define both competitive advantage and sustained competitive advantage. The former, he explains, a firm possesses "when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors" (Barney, 1991, p. 102). On the other hand, a firm has sustained competitive advantage "when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors *and* when these other firms are unable to duplicate the benefits of this strategy, and adds that "whether or not a competitive advantage is sustained depends on the possibility of competitive duplication" (Barney, 1991, p. 102). According to Barney, in order for a resource to be a potential source of sustained competitive advantage, it must have four distinct attributes. The resource (1) must be valuable, (2) must be rare, (3) must be imperfectly imitable, and (4) must not have an equivalent substitute.

According to Barney, "resources are valuable when they enable a firm to conceive of or implement strategies that improve its efficiency and effectiveness" (Barney, 1991, p. 106). In pointing out what is valuable in the context of what can help a firm improve its efficiency and effectiveness, he makes an important link between the market-based view (which he refers to as the "environmental models") and the resource model. The environmental model, which often calls for an analysis of the strengths, weaknesses, threats, and opportunities (also known as a SWOT analysis), points to what opportunities the firm can exploit or what threats it should seek to neutralize, and also helps to isolate the resources that will help the firm do so. This basically defines which of the firm's attributes can be considered resources. In complementarity to this, the resource-based model takes the next steps in then saying what conditions these resources need to meet in order to generate sustained competitive advantage.

A resource being valuable alone is not enough. If a lot of firms possess this valuable resource, then it lacks the characteristic of being rare and means that no single firm is gaining competitive advantage from it. It is difficult to assign a degree of rarity to a resource in order for it to be able to produce a sustained competitive advantage, but Barney does make certain that a resource that is completely unique among a group of competitors will at least be a source of competitive advantage and have the potential to be a source of sustained competitive advantage. In addition to this, he also imparts that valuable resources that are not rare should not be dismissed as unimportant, as those "can help ensure a firm's survival when they are exploited to create competitive parity in an industry" (Barney, 1991, p. 107)

The third characteristic of a resource that can generate sustained competitive advantage I that it should be imperfectly imitable, meaning that firms that don't own that resource cannot

attain it. Barney points to three reasons for this being the case: (1) the unique historical conditions of a firm and the inability of another firm to duplicate its exact path that led it to attaining that resource, (2) a level of casual ambiguity between the resource and sustained competitive advantage that is not understood by competitors as well as the firm itself, and (3) a level of social complexity related to that resource which is close to impossible to be imitated.

Finally, Barney points to the characteristic of substitutability that must also be in place in order for a resource to generate sustained competitive advantage. A resource that is valuable, rare, inimitable but has an equivalent substitute will not be able to generate sustained competitive advantage. A competitor may substitute a resource by something similar as well as something different from the other firm's resource and still be able to implement the same strategy, in which case the other firm's sustained competitive advantage is no longer viable.

One other noteworthy element of Barney's article is that it also discusses what he calls "Schumpeterian shocks" – "structural revolutions in an industry [which] redefine which of a firm's attributes are resources and which are not" (Barney, 1991, p. 103). Barney discusses this in the context of the sustained competitive advantage discussion, when explaining that a sustained competitive advantage is not linked to a length of time, but rather the inability of competitors to duplicate the benefits the firm is able to gain from it. He goes on to explain, however, that these Schumpeterian shocks that industries may experience can render such resources no longer a basis for sustained competitive advantage, while at the same time characterizing other attributes into resources which previously were not. Barney summarizes it well: "a firm enjoying a sustained competitive advantage may experience these major shifts in the structure of competition, and may see its competitive advantages nullified by such changes" (Barney, 1991, p. 103).

2.1.3 Knowledge-based View

In the mid-1990's Robert M. Grant published what would be a starting point for a knowledge-based theory of business strategy. The author takes the stand that "the primary role of the organization is knowledge application rather than knowledge creation" (Grant, 1996, p. 109). In addition to this, he views knowledge as being linked to the individual, and uses the paper to explore the various mechanisms by which firms coordinate this specialist knowledge that its members possess.

Although Grant is pushing the literature forward at this time, he is careful to note the knowledge-based theory of the firm is an outgrowth of the resource-based approach. With this

in mind, it is evident that there is some overlap in important elements of both theories, which he applies the knowledge lens to. In particular concern to competitive advantage, Grant touches on the concepts of transferability and inimitability of the capabilities of the firm. Within the scope of transferability, he highlights the difference between explicit knowledge ("knowing about facts and theories") and tacit knowledge ("knowing how"). The distinction between the two, he argues, is an important facet of seeking sustained competitive advantage due to the fact that explicit knowledge, by its nature of being codified, is much more transferable than tacit knowledge, which is not codified and is instead acquired through observation and practice, therefore being much more costly and time-consuming to transfer (Grant, 1996, p. 111). Grant's discussion of the element of inimitability parallels close to Barney's, in which he highlights the complexity of the scope of knowledge attached to a capability: "the broader the scope of the knowledge integrated within a capability, then the more difficult imitation becomes. The complexity of 'broad-scale' integration creates greater casual ambiguity and greater barriers to replication" (Grant, 1996, p. 117).

Lastly, Grant makes an important foray into the topic of the boundaries of the firm. He explains that there is a crucial incongruence between the knowledge that company has and the knowledge that it needs to apply to its products and services. The usual scenario is that some of the knowledge it has within its boundaries ends up not being applicable to the work it does, while on the other hand there is a lack of some knowledge that would be useful to them. Therefore, this "imperfect congruence between firms' product and knowledge domains created opportunities for knowledge trading to achieve fuller utilization of knowledge" (Grant, 1996, p. 120). Grant highlights that this is often done through strategic alliances. Although his article primarily focuses on the internal factors of knowledge coordination, this element of accessing knowledge through alliances is very important, and is something that is highly applicable to the research at hand in which we look at companies who are reaching beyond their boundaries for knowledge and innovation.

Sveiby (2001) continues on the knowledge-based path in an article that utilizes this theory to inform strategy formulation. Similarly to Grant, Sveiby sees knowledge as linked to the individual, and argues that therefore the formulation of strategy must take into account the competence of the people in the organization, and that "people in an organization can use their competence to create value in mainly two directions: externally or internally" (Sveiby, 2001, p. 346).

He takes important step forward concerning transfers of knowledge by highlighting the fact that transfers of knowledge create value. Sveiby's view of knowledge transfers is that it creates value due to the fact that when it occurs the knowledge does not leave the person it is originating from. His positive outlook on knowledge transfer creating value is succinctly summarized in five words in this article: "knowledge shared is knowledge doubled" (Sveiby, 2001, p. 347). Sveiby's optimistic view, however, does come with an important observation that firms must fundamentally be aware of how effective these transfers of knowledge ultimately are in order to obtain value from it.

Similarly, to Grant's take on the boundaries of the firm, Sveiby begins to look beyond the in-house knowledge. He takes a refreshing approach in strategic theory and highlights that not only is the internal structure of the firm important, but that value creation can also happen through knowledge transfers with the outside – event including customers, suppliers, and former employees within this scope. The article lists nine[2] basic types of knowledge transfer which create value for the firm, and within these nine, there are four mechanisms that concern the research at hand: knowledge transfers from external structure to individuals, knowledge transfers from within the external structures, knowledge transfers from external to internal structure, and knowledge transfers from internal to external structure.

Both the element of value creation through different mechanisms of knowledge transfer, as well as the emphasis on the unimportance of the firm's boundaries are important links for our research here. Where we seek to observe firms that are engaging with startups as a way to innovate, we can apply this lens that ultimately, they are seeking to produce value from transfers of knowledge, and in this specific type of case they are doing so by reaching externally from the firm itself.

2.1.4 Dynamic Capability View

The dynamic capabilities approach is considered by Teece, Pisano, and Shuen (1997), who take the resource-based view of strategic management into what they describe as a "Schumpeterian world of innovation-based competition, price/performance rivalry, increasing returns, and the 'creative destruction' of existing competences" (Teece, Pisano, & Shuen, 1997, p. 509). The authors consider sources of wealth creation of companies, and how and why some firms are able to achieve competitive advantage in this dynamic environment in which they

[2] For the sake of brevity, we will not discuss all nine types identified by Sveiby. However, you may wish to read further in his 2001 article "A Knowledge-based theory of the firm to guide in strategy formulation" (Journal of Intellectual Capital, vol. 2, n. 4).

experience so much change. The dynamic capabilities approach stresses "exploiting internal and external firm-specific competences to address changing environments". This school of thought pulls from a background of a wide variety of research, and calls attention to "[developing] management capabilities, and difficult-to-imitate combinations of organizational, functional, and organizational skills" (Teece, Pisano, & Shuen, 1997, p. 510).

The 'dynamic' piece of this school of thought is related to having the ability to renew your capabilities in order to be aligned with the rapidly changing environment. While on the other hand, the term 'capabilities' here focuses on the important role of management in being adequately competent to allow for the repositioning, integration, a re-configuration of both internal and external capabilities of the firm to cope with these rapid changes companies experience.

The viewpoint pushed forward by Teece *et al*. highlight that in order to achieve competitive advantage, there is a need for companies to be able to be flexible and responsive in the face of change. The authors posit that three important elements work toward this: organizational and managerial processes, the strategic position of the firm, and the possible paths a firm can take.

The dynamic view stresses that resources alone are not enough. Managers need to be equipped with the capabilities to deploy and manage them in the best possible way. The authors point out that there are three roles that organizational and managerial processes play.

First, there is the role of coordination and integration which refers to the basic function of management to organize the firm's activities internally. This coordination and integration also increasingly includes external resources as well, such as technology and other external activities. The authors point to the importance of this role within the scope of competitive advantage because coherence and deep intrafirm linkages within these processes can yield an element of inimitability to the firm which helps shield it from competition.

The second role played by the organizational and managerial processes is of learning, which the authors define as "a process by which repetition and experimentation enable tasks to be performed better and quicker … [and] enables new production opportunities to be identified" (Teece, Pisano, & Shuen, 1997, p. 520). According to the authors, learning involves both organizational and individual skills, is intrinsically a social and collective process, and requires common communication and research procedures. As a result, learning brings new patterns of activity and routines to the company. These routines are defined by the authors as "patterns of interactions that represent successful solutions to particular problems", and they

point out that there interactions and collaborations can be a vehicle for organizational learning, which in turn helps the organization identify weaknesses and avoid "strategic blindspots" (Teece, Pisano, & Shuen, 1997, p. 520)

Lastly, the managerial and organizational processes also play the important role of reconfiguration and transformation. In dynamic environments of rapid change firms need to be able to survey their environment and identify ways in which they may need to reconfigure or change their resources and asset structure. This transformational ability is a learned skill, and companies that have a willingness to practice this are the one who will be able to do it best and ahead of their competition. The authors point out that increased local autonomy, rather than a more centralized firm structure, can be helpful in achieving this, and they also interestingly call out that "in dynamic environments, narcissistic organizations are likely to be impaired" (Teece, Pisano, & Shuen, 1997, p. 521). Interestingly, Penrose also discusses this a bit, emphasizing that it is not only the resources of the firm which bring about its productivity and success, but "also that the experience of management will affect the productive services that all its other resources are capable of rendering. As management tries to make the best of the resources available, a truly 'dynamic' interacting process occurs which encourages continuous growth" (Penrose, 1959). The willingness and ability to be flexible enough to reconfigure and transform as needed is crucial for the competitive advantage of the firm.

The article also explores the strategic position of the firm as well as the firm's potential paths, both as additional elements that impact the flexibility of a firm to succeed within a dynamic environment. The strategic position of the firm is associated to its processes as well as to the assets it has. These assets include technological, financial, reputational, structural, institutional, and market structure assets, as well as organizational boundaries in terms of the degree of integration of the firm. In regard to the path of the firm, Teece *et al* challenge the commonly held belief from the school of microeconomic theory that considers that firms may have access to an infinite amount of technology and markets. In their approach, the authors hold on to the idea that history matters. They call this concept "path dependencies" – where the firm has been, its routines, and its previous investments influences its future performance.

When assessing the importance of imitability and replicability of resources, Teece *et al* do agree with the likes of Barney that seeking difficult-to-imitate capabilities is important in the pursuit of competitive advantage. They do, however, also emphasize that guarding intellectual property is not enough – something which they note is a significant part of the strategy within the resource-based view.

A varied application of strategic management in practice

This research takes these theories of strategic management into account and uses them as part of the basis for the research. In looking at why and how companies are utilizing strategies of startup engagement for innovation, this research uses a lens of seeking competitive advantage, and understands that companies put different elements into practice, creating complementarity between all of them when applying them to their specific cases. In addition to the strategic management theories, it is important to also include in the literature review the sections that follow, which explore the concept of the entrepreneurial company, the dynamic business environment that companies operate into today, and finally an overview of the literature on innovation as well as a closer look at the various mechanisms used for startup engagement.

In the context of innovation, all of these strategic management points of view are relevant to the firm, and it is advantageous to pull influences from all of these as they are certain complementary when taking on innovation activities. Although different firms will approach innovation in different ways, what they all seek is for this type of activity to help them grow and continue to have (or develop) an edge over their competitors. In practice, companies don't stick to one school of thought or the other. Instead, they apply different elements of these approaches to their strategy as they see fit.

While each school of thought emphasizes a different element, all four bring relevant points of analysis for firms competing in today's dynamic business environment. A company may be very aware of their competitive environment and how that impacts their business, while at the same time taking into consideration the resources they have, how those resources propel them toward a sustained competitive advantage, as well as how the transfer of knowledge and the managerial abilities to identify, reallocate, and reconfigure resources is important for their business. On top of it all, they can also focus on how their managerial and organizational processes may be flexible enough to deal with a quickly changing environment. I believe that in the context of this research all of these strategic management approaches are valid and are put to use by our subjects, which is why they are all presented here.

2.2 Corporate Innovation & Engagement with startups

In transitioning from the strategic management literature to that of innovation, I believe there is a value in bridging the gap between both sides with some additional insights from Edith

Penrose. In her Theory of the Growth of the Firm, Penrose highlights some crucial aspects such as resources and management (as mentioned in the previous section). In addition to these, she also identifies valuable characteristics for firms to have: that of being enterprising. Penrose believes that "the rate and direction of the growth of the firm depend on the extent to which it is alert to act upon opportunities for profitable investment." (Penrose, 1959). It is important for firms to have this characteristic – they cannot solely depend on the resources currently in their repertoire, but must instead also look to where else they may be able to find opportunity. If we link this back to Schumpeter (1942) and Foster & Kaplan (2001), we can start to move towards an impetus of firms needing to innovate and look for new opportunities in order to continue to not only thrive, but to survive.

One important voice within the innovation literature is Peter F. Drucker, who's approach is based on the belief that "innovation … is the means by which the entrepreneur either creates new wealth-producing resources or endows existing resources with enhanced potential for creating wealth" (Drucker, 1985). Drucker very much takes the concept of the entrepreneurial nature of the firm into the zone of innovation. His stance is that entrepreneurs must have a commitment to a "systemic practice of innovation". Drucker believes that successful innovation comes from a purposeful and conscious search for it. He sees several areas of opportunity for innovation, both internal and external to the firm. Internally, he says, innovation can be sought through unexpected occurrences, incongruities, process needs, and industry and market changes, while externally these areas of opportunities are demographic changes, changes in perception, and new knowledge. This last area of opportunity – new knowledge – is of particular focus to Drucker who explains its complexities. Although knowledge-based innovations have shown incredible success throughout history, he emphasizes that they do have the longest lead time to get to market, are more likely to fail than others, tend to also be more unpredictable, and often require more than one kind of knowledge in order to be effective. These characteristics pose great challenges to managers, but they can be overcome. Managers must be able to determine what kinds of knowledge are needed to make that innovation feasible, and, Drucker adds, they must be attentive in particular to the needs and capabilities of the intended user of that innovation. Drucker stresses that "knowledge-based innovation is more market dependent than any other kind of innovation" (Drucker, 1985).

In delving into the topic of innovation it is important that we clearly define the concept itself, as well as some of its categorizations and characteristics. While we tend to connect the

term innovation to technology, innovations can happen in a variety of dimensions of a business. Technological innovations are the ones we often hear about as they tend to be more radical, and to have broader impacts into an industry, markets, and the lives of the consumers. The OECD defines four types of innovation: product, process, organizational, and marketing (OECD, 2005). For the purposes of clarity and standardization, this research will be utilizing the following OECD definitions which are presented in OSLO Manual's third edition:

> **Innovation** – "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations. …. The minimum requirement for an innovation is that the product, process, marketing method, or organizational method must be new (or significantly improved) to the firm." (p. 46)
>
> "by definition, all innovations must include a degree of novelty …. New to the firm, new to the market, and new to the world: (p.57).
>
> **Product innovation** – "the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses." (p. 48).
>
> **Process innovation** – "the implementation of a new or significantly improved production or delivery method." (p. 49).
>
> **Marketing innovation** – "the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing. … The distinguishing feature of a marketing innovation compared to other changes in a firm's marketing instruments is the implementation of a new marketing method not previously used by the firm. It must be part of a new marketing concept or strategy that represents a significant departure from the firm's existing marketing methods … [and] can be implemented for both new and existing products" (p. 49-50).
>
> **Organizational innovation** – the implementation of a new organizational method in the firm's business practices, workplace organization or external relations." (p.51).

In addition to this Oslo Manual definition of innovation, it is also useful to include here the distinction between an innovation and an invention, as described by Fagerberg (2013). While an "invention is the first occurrence of an idea for a new product or process … [an] innovation is the first attempt to carry it out in practice". In this transition from invention to innovation, Fagerberg explains, "the innovator normally needs to combine several different types of knowledge, capabilities, skills, and resources" (Fagerberg, 2013).

Besides the categorization of *types* of innovation, this research also takes into account the following definitions of the *intensity* of innovation based on the work of Clayton Christensen and Joseph Bower (Bower & Christensen, 1995):

> **Incremental innovation** – An innovation that "[tends] to maintain a rate of improvement … [which gives] customers something more or better in the attributes they already value". (p.45).
>
> **Radical innovation** – An innovation that "introduces a very different package of attributes from the one mainstream customers historically value". (p.45).

It is important to note that throughout the literature (as well as the field research) the term radical innovation is often interchangeable with the term disruptive innovation, and incremental innovation is interchangeable with sustaining innovation.

Lastly, this research utilizes the following definition of startups, from the book *The Lean Startup* by Eric Ries:

> "A **startup** is a human institution designed to create a new product or service under conditions of extreme uncertainty." (Ries, 2011).

In the context of this research, a startup will most often reference an institution that is outside of the confines of a company. However, the scope of startup engagement also includes startups that may sprout from within a firm. This is most often referred to by the term 'intrapreneurship'. Although the startup may have its origins from employees of a firm, if it transitions from being a project to being an institution, it does fall within the scope of this research.

With the concepts clearly defined, it is easier to take the next steps in discussing the main topic of this research – firms who are seeking innovation through engagements with outside entities (startups).

Why do firms necessarily seek to innovate? The answers to this question are a dime a dozen – there doesn't seem to be one exact answer or widely praised theory of *why*, instead we see a variety of insights into this throughout the literature. The Oslo Manual, for example states that "the ultimate reason is to improve firm performance" (OECD, 2005, p. 29). Bonzom & Netessine (2016) believe that companies that fail to innovate will no longer be competitive and will eventually die. Whatever the reason, firms all over the world are taking this topic seriously and looking to incorporate innovation into their corporate strategy. In addition to that, they are also looking to transition their innovation efforts from costly and time-consuming research & development efforts, to new, more flexible ways. This includes, of course, finding ways to engage with startups – organizations that are not only on the frontline of technology and trends, but also have the agility, speed, and flexibility to try things out quickly and efficiently. Unlike large corporations, when startups fail they can get back up quickly and try a new solution. They foster a culture of failing fast, where getting to the best solution quickly is the ultimate goal. The Boston Consulting Group's 2018 report on the Most Innovative Companies dives into this

new era of innovation and stresses that "traditional companies, no matter how large, can't afford to pursue innovation, R&D, and product development in traditional ways. To do so cedes competitive advantage to the disruptors. Companies need to determine their own digital strategies and start playing the innovation game by today's rules" (Ringel, Taylor, & Zablit, 2017, p. 12).

Henry Chesbrough's body of work is highly focused on what he titles the practice of Open Innovation. The author describes a world in which many industries have or are in the process of transitioning from a widely-accepted practice of closed innovation into this new open innovation paradigm. He makes no secret of his vision of the business world as it is today, mentioning within the book's first chapter that "companies that don't innovate die. … In today's world where the only constant is change … innovation is vital to sustain and advance companies' current business; it is critical to growing new business" (Chesbrough H. , 2003, p. xvii).

Chesbrough (2003) explains that in the paradigm of closed innovation, companies traditionally viewed their internal R&D as both an important resource in developing and improving their products and services as well as a critical asset for competition, which would create high barriers of entry for potential new entrants. Within this practice of closed innovation, companies tried to have most talented people in their field working for them in order to develop breakthroughs in-house, take it to market themselves when ready, and fully control their intellectual property – all with the anticipation that this would bring about market leadership among their peers.

In today's world, however, Chesbrough explains, that several factors have undermined the logic of closed innovation. These, which he calls "erosion factors" include: increased numbers of college and post-graduated educated people, higher mobility of skilled individuals, an intensified availability of venture capital, faster time-to-market of products (and by contrast a shorter shelf life of products and technologies), more knowledgeable customers, and heightened competition from firms across the globe. He sees today's business environment as operating within a condition of abundant knowledge, which no longer sits within the traditional silos of corporate R&D. Knowledge is abundant and mobile – a scientist that develops a new idea or technology at a company that decides not to take it to market may decide to explore that idea elsewhere by tapping into venture capital and creating a startup to exploit this knowledge. It may well be that it eventually fails, but it can also very well become a new disruptive technology that eventually comes to challenge the incumbent as well.

His open innovation paradigm advises companies that they must not have such rigid firm boundaries when it comes to innovation. Rather than solely using internal sources of innovation, firms should also look to external sources, as well as be open to both internal and external paths to market for their innovations. The open innovation approach flips many of the closed innovation assumptions upside-down. This approach believes that all of the smartest people may not necessarily be within the firm, and therefore firms must be open to working with those outside of it as well. R&D doesn't necessarily need to originate from within the firm in order for it to bring value to the firm, just as it doesn't need to go to market through the firm's own paths in order for the firm to benefit from it.

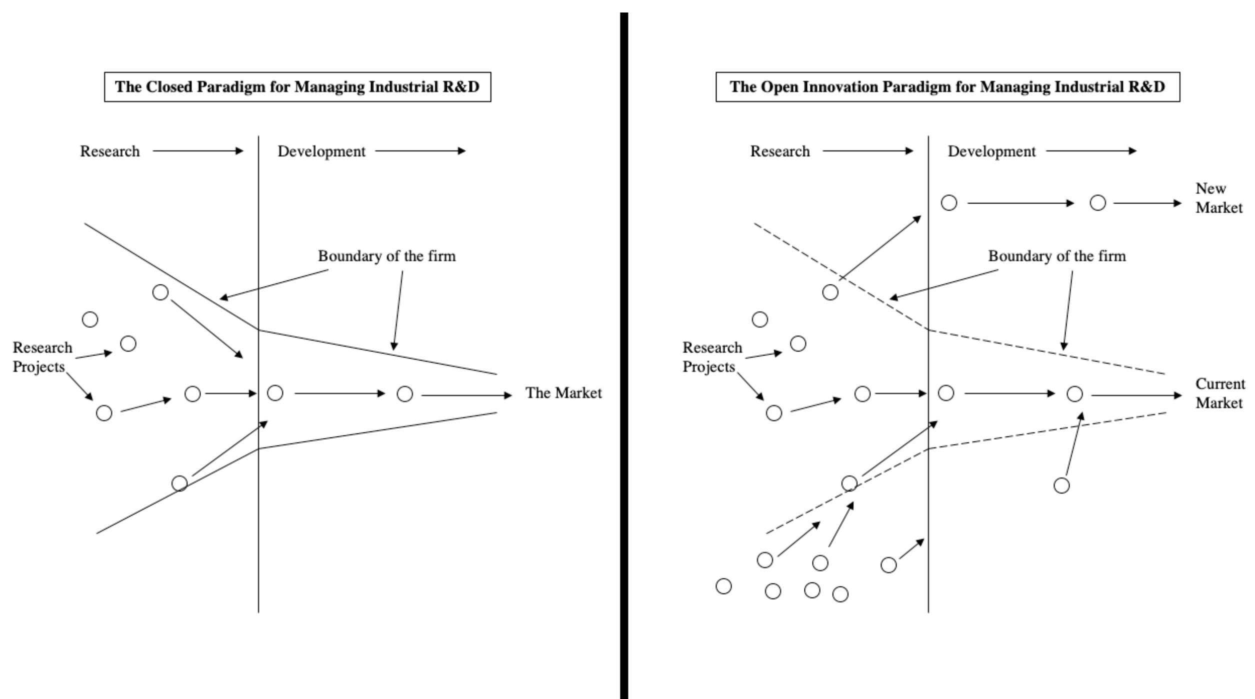

Figure 1 - Henry Chesbrough's Open Innovation Paradigm for Managing Industrial R&D (Source: Chesbrough, H. , 2003)

Chesbrough sees the world today as abundant in knowledge and accepts that knowledge no longer lives within the bounds of large corporate R&D departments. He believes that companies often don't take advantage of knowledge, and that by not seeking to explore knowledge outside of their own walls they often duplicate efforts of innovation which could be more efficient otherwise. He also relates to this a sense of "use it or lose it", whereas ideas that are not readily able to be put to use or taken to market will likely lose its potential value. Under the practice of closed innovation it was quite normal for companies to shelf both ideas and people until they had the best moment to put them to use, and in today's highly mobile world of both knowledge and skilled workers this can no longer be the case. Sveiby (2001) has

a very similar approach in this sense, and explains that "in contrast to tangible goods, which tend to depreciate in value when they are used, knowledge grows when used and depreciated when not used" (page 346).

Finally, the open innovation paradigm also brings up some important points related to the extraction of value from innovations, as well as the management of intellectual property and the impact of venture capital. Shifting into this new paradigm requires that innovation be managed differently than the traditional model suggests. Chesbrough emphasizes that the potential value of the innovation will be determined by the business model used to bring it to market – and that firms should be open to going outside of their own market paths. This links over to intellectual property in the sense that while traditionally firms would seek to protect their IP at all costs, in the open innovation paradigm it could make sense for them to find external uses for their knowledge, such as through licensing or spinning off a new business.

While it may not have been accepted before, it has become clear that large problems can be solved by small, innovative companies, and this is an enormous threat to those industry leaders who have been accustomed to edging out competition purely based on their size.

With the failures of major companies that are directly related to innovative new competitors becoming more common, businesses have learned that ignoring the new and innovative and continuing to prioritize the traditional is hardly a good strategy for staying on top. It is no surprise that today, most of the well-established companies in the market take innovation and competition from innovators seriously. Building in strategies that allow them to see what is on the horizon for their industries, and engaging with these new players when the balance of power is still in their favor, is crucial for their continued survival.

Weiblen and Chesbrough (2015) explore the practice of large corporations who are seeking innovation through engagements with startups. They work off of the premise that while large corporations sit on vast valuable resources, startups have an inherent agility, and they see that finding ways to bring those two elements together can bring about significant benefits. Although the authors accept that it is not as simple to put into practice, they do recognize that there is a shift happening within large corporations of tapping into the startup ecosystem in order to foster innovation.

The researchers define a typology of corporate engagement models which is based on the direction of the innovation flow. This typology is divided into two categories: outside-in and inside-out. Within their typology, they also define four types of corporate-startup engagement mechanisms. Within the outside-in mechanisms, they include corporate venturing

and startup program. On the other hand, the inside-out mechanisms are corporate incubation and startup program (platform). Within each typology, one model of corporate engagement is categorized as traditional and one as a new model. The traditional models of corporate engagement are corporate venturing and corporate incubation. These two models are also listed by the authors as having equity involvement. The new models of startup engagement are startup programs – outside-in and platform. Opposite to the traditional models, these two models are noted as having no equity involvement (Weiblen & Chesbrough, 2015).

Typology of Corporate Engagement Models with Startups and Their Key Goals

Equity involvement	*Direction of innovation flow:* *Outside-in*	*Inside-out*
Yes	**Corporate Venturing** Participate in the success of external innovation and gain strategic insights into non-core markets.	**Corporate Incubation** Provide a viable path to market for promising corporate non-core innovations.
No	**Startup Program (outside-in)** Insource external innovation to stimulate and generate corporate innovation.	**Startup Program (Platform)** Spur complementary external innovation to push an existing corporate innovation (the platform).

Figure 2 - Chesbrough & Weiblen's Typology of Corporate Engagement Models with Startups (Source: Weiblen, T. & Chesbrough, H. , 2015)

Their study shows that firms are moving toward these newer models, as they tend to be more "lightweight" and can therefore increase both the speed of decision-making as well as the quantity of startups they can engage with. The authors do, however, emphasize that the different models attend to different needs, and therefore corporations need to be keenly aware of what objectives they seek to fulfill through this strategy of startup engagement. Weiblen and Chesbrough ultimately "conclude that there is no single best model for engagement; rather each model has its virtues and challenges. Companies must select the model that best fits their strategic objectives for engaging with startup firms" (Weiblen & Chesbrough, 2015, p. 81).

In a report compiled by INSEAD and 500 Startups (Bonzom & Netessine, 2016), one begins to see how prevalent the use of startup engagement is becoming among the companies on the Fortune 500 list. At the time of the report, over half (262 companies, representing 52.4% of the total group) of the companies on the list were engaging with startups in some way. In analyzing this group further, the report highlights that the most common mechanism used by these large corporations is corporate venture capital (62.6%), with startup competitions and acceleration and incubation programs following (29% and 24.4%, respectively). The report also interestingly points out that there is a correlation between the company's rank on the list and having startup engagement strategies in place. For example, companies ranked between 1 and 100 had a 68% rate of engaging with startups, while companies ranking between 401 and 500 were half as likely to have startup engagement strategies in place, at 32%.

Companies have several ways that they can look for innovation externally through engaging with startups, these include: running a corporate incubator/accelerator program, engaging in corporate venture capital investments, full acquisition, acquihires, open innovation contests that aim to solve a particular problem, providing services targeted to startups, and even seeking informal ways to interact with them as well.

In all of the approaches, the interaction between the corporation and the startup is a value-adding process for both sides. Engaging with the startup brings various benefits and opportunities to the parent corporation and can open access to valuable resources for the startup which they may not otherwise have, such as expertise, networks, financing, customers, and equipment. This exchange not only brings the benefits of tapping into innovation that can help corporations with their competitive advantages, but also increases the chances of survival of an early-stage venture.

In an effort to be concise, the various mechanisms for startup engagement have been grouped into five categories. Each of the categories are described below in more detail, both in a practical sense as well as with some insights from various applicable literature. In addition to the descriptions in the sub-sections below, there is also a summary table at the end of this section which briefly outlines the categories, and also notes some comparative elements among them, such as the likely level of effort, cost, and commitment each category may require.

2.2.1 Corporate Incubators/Accelerators:

The concept of incubation is well-known in the field of medicine, where the incubation of premature or at-risk babies has at its core objective to help increase the child's rate of

survival by keeping that child in a controlled environment (Aernoudt, 2004). As can be expected, the main goal behind a business incubator is to increase the chance of survival of a startup. "Business incubators nurture young firms, helping them to survive and grow during the startup period when they are most vulnerable" (Aernoudt, 2004, p. 127), and they do so by providing a variety of services and access to potential customers, financing, mentorship, and know-how.

Business incubators have been around since the 1950's, however, up until the 1990's, these were mainly efforts linked to governments and higher education and research institutions, with the main goal of boosting regional or industry-specific economies. The 1990's brought along the trend of developing technology-focused incubators around specific clusters such as biotech and IT and eventually incubators became a business of their own, albeit continuing to receive public subsidies (Aernoudt, 2004). More recently, however, large established companies have brought the concept of the business incubator in-house and applied this mechanism within their innovation strategies.

Incubators generally have a specific criteria for selection and participation, and generally have a structured program with a defined amount of time of participation. In addition to this, the concept of an incubator is that they provide important knowledge and support that help the startups in their initial stages, and ultimately improves their chances of survival (Aernoudt, 2004; Miller & Bound, 2011). These services often include guidance in strategy and business model, minimum viable product (MVP) validation, access to high-cost machinery, and office space. The literature also highlights an important aspect of business incubators to be the networking element – whereby the parent company who owns the incubator is able to help the startups get access to potential clients, investment capital, and experienced mentors in a variety of fields of business such as legal, human resources, and various technology (Aernoudt, 2004).

Business incubators have long been a tool to help startups succeed, however they also have additional benefits for other entities such as investors, venture capital firms, and service providers. In addition to this, incubators do provide a benefit to other large firms, who often use the cohorts of incubated startups as a way to scout for new talent, new technology, and potential new customers for the services and products they offer (Miller & Bound, 2011). It seems then, that bringing this activity of startup incubation in-house could bring a bounty of benefits to large corporations, all while giving them a unique advantage of getting access to the talent, technology, and knowledge ahead of their competitors. Ultimately, "corporate

incubators are managed as professional service firms, acting in the larger interest of their parent corporation while leveraging their knowledge and networks" (Becker & Gassman, 2006a, p. 36).

Becker and Gassman's research takes on a knowledge-based theory, and moves toward a knowledge-based lens, often focusing on the process of learning and innovation, and in the context of the corporate incubators it stresses the importance of knowledge transfer in the incubation period. Their research gives a lot of importance to knowledge and considers it one of the most strategically valuable resources for a firm, and they highlight that corporate incubators seek to accelerate the development of startups through the transfer of not only tangible resources, but also important intangible resources - knowledge - (Becker & Gassman, 2006a, p. 36). Finally, although Becker and Gassman (2006a) do categorize the corporate incubators into four categories[3], they rightly point out that some corporate incubators can fall within more than one category as well as the fact that some companies may set up multiple incubators that each have different strategic goals and approaches.

2.2.2 Corporate Venture Capital

The corporate venture capital (CVC) strategy includes a transfer of financial assets from the parent corporation to the startup (Chesbrough, 2002). Unlike a full acquisition, CVC tends to be a lower risk strategy where the parent corporation invests a certain amount of capital into the startup, in exchange for a percentage of equity. Rather than heading towards the traditional M&A approach of purchasing a complete asset, companies are now looking to the venture capital approach, where they invest for equity in a variety of startups, thereby diversifying ad lowering risk.

CVC investments can be generally categorized into two types: strategic and financial. A strategic CVC investment can be considered to have as a main objective seeking to bring innovation into the company as a means of increasing sales and profits while a financial CVC investment is more geared towards bringing a financial return to the firm. This of course is not a black and white categorization, as there are investments that can seek a bit of both (Bonzom & Netessine, 2016; Chesbrough, 2002).

The CVC approach itself can be implemented in a few different formats. In addition to having a specific department within the firm to look for potential CVC opportunities, firms

[3] (1) fast-profit incubators, (2) market incubators, (3) leveraging incubators, and (4) in-sourcing incubators. See Becker & Gassman (2006a) "Gaining Leverage Effects from Knowledge Modes Within Corporate incubators"

may also choose to build out an entire business unit (BU) to handle the CVC activities, while others opt to partner in CVC.

Chesbrough (2002) creates a typology of four different kinds of CVC investments: (1) **driving investments** are strategic and are characterized by a tight link between the startup and the parent company. They are often a good way to sustain the current business, however are not ideal for coping with potential disruptions and dealing with changes in the business environment; (2) **enabling investments** are also strategic in nature, however do not have as strong of a link between the startup's and the parent company's operations as a driving investment does. These investments are often placed on startups that complement the parent company's business – or, in other words, helps the company strengthen an ecosystem in which demand for its product increases as other offerings in that ecosystem grows. It is important, however, that companies utilizing this type of investment are able to capture the majority of the market growth they help stimulate – otherwise their competitors are likely to reap the benefit of a stronger ecosystem instead; (3) **emergent investments,** on the financial objective side of things. While there is still a link between what the parent company and what the startups do, these emergent investments are mostly a way for the company to explore potential new business. They give companies an advantage in accessing potentially useful information they may not otherwise gain from conducting traditional market research. An important thing that companies utilizing emergent investments must keep in mind is that many of the startups they invest in through this strategy may ultimately not be important and not add to the parent corporation's long-term strategy. They must have the discipline and knowhow to define what to hold on to and what to exit in the best way possible; and (4) **passive investments** are also financial in nature, but have a much looser link between the operations of both sides. Passive investments are a tool for financial returns only, and opens the company up to risks – while the upside of being an investor in a startup that hits it big can be tremendous, if these types of investments go belly-up there is no strategic benefit left behind.

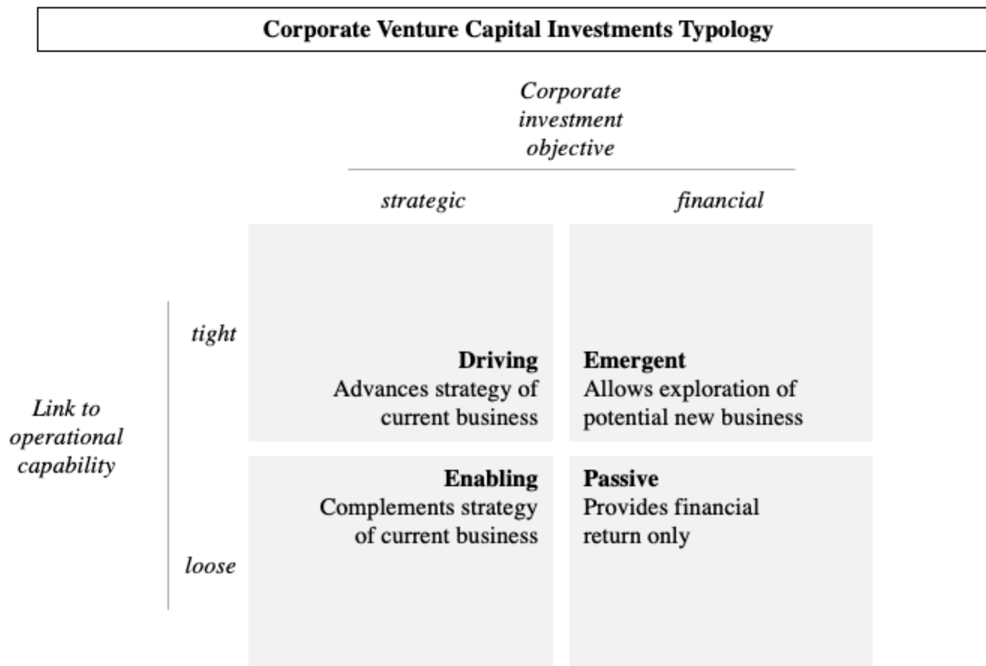

Figure 3 - Henry Chesbrough's Typology of Corporate Venture Capital Investments (Source: Chesbrough, H. , 2002)

Chesbrough points out that enabling and driving investments tend to have more "staying power" as compared to emergent and passive ones. When the economy is in a downturn, companies who have purely financial CVC investments are likely to exit without much gain – while on the other hand, the strategic investments can still bring them benefits. Strategic investments can help firms not only fuel growth within its current business, but also be a catalyst for new business. He emphasizes that CVC should not be judged solely on a financial basis and firms should "manage its investments to capture the latent strategic benefits in its portfolio rather than [chase] the evanescent promise of high financial returns" (Chesbrough, 2002, p. 11).

In contrast with the incubators and accelerators approach, the CVC mechanisms put the onus on the firm itself to seek out and initiate interaction with the startups.

2.2.3 Open Innovation Challenges

A less engagement-heavy strategy of innovation that has been often seen in the market this past decade are the open calls for innovation. This type of initiative can be seen in a few different formats, such as a contest put on by a corporation that calls for submissions from startups that can help them solve a certain issue. Other formats include hackathons, short-term

innovation catalyst events (such as an “ideation week”), and a platform that accepts ongoing submissions of ideas.

Open innovation challenges can be designed to best attend to the company’s needs. They can be focused on specific things the firm is seeking solutions and innovations for, or may opt to accept any innovation idea that participants think could be relevant to that firm. They may lead to an in-person event or gathering, or could be done fully online – which makes them a low-cost option for both participants and organizers (Leimeister, Huber, Bretschneider, & Krcmar, 2009). In addition to these basic characteristics of program design, open innovation challenges also differ in the way they approach prizes, benefits offered to participants, protection of intellectual property (IP), and actual use and implementation of innovations once the contest is over.

One of the companies that has famously embraced the open innovation challenges approach is Proctor & Gamble. They have created a global initiative called Connect + Develop[4], an online platform that lists several specific needs they wish to find innovations for. In addition to those, the platform also allows for submissions for any innovation the participant considers to be a fit according to their criteria: and unfussy, three item list of requirements. This type of program has allowed P&G to multiply their R&D team by blurring the lines of the firm. It is important to note that the Connect + Develop platform is not solely targeted at startups, it is instead open to anyone (whether it be a business or an individual) who can meet the criteria for submission. Nonetheless, it is an extremely powerful tool for P&G to access knowledge from outside its own four walls, including from startups (Huston & Sakkab, 2006).

An additional relevant approach to open innovation challenges is to activate it through a third party, or to leverage third party connections to realize a more expansive reach of the program. A good example of a third-party that works in this manner is InnoCentive, a company that has built an extensive community of potential problem solvers who can offer solutions to specific innovation needs that companies have. InnoCentive is hired by large firms (such as Booz Allen Hamilton, Astra Zeneca and the Cleveland Clinic) as an intermediary to run their open innovation challenges. Not only do they consult on the process, but they also run the program itself and connects their client firms (which they call the “seeker”) to their vast network of over 375,000 “solvers”[5]. (Questions About InnoCentive, n.d.; Terwiesch & Xu, 2008)

[4] http://www.pgconnectdevelop.com
[5] https://www.innocentive.com/our-solvers/faqs/

Leimeister and his colleagues identify several motives as to why participants seek to participate in these competitions. These include: learning, direct compensation (which can include both prizes and career opportunities), self-marketing, and social motives (i.e. positive social feedback from the organizers) (Leimeister, Huber, Bretschneider, & Krcmar, 2009). On the other hand, Terwiesch & Xu (2008) highlight some of the major advantages that companies have when utilizing these types of mechanisms. These advantages include: increasing the rate of idea generation and testing, building competition among the participants, access to an extensive group of potential solvers (and therefore having the problem solved by those with the most expertise), overall lower costs, and only having to pay for the best solution (which shifts the risk of failure onto the participants).

Open innovation contests allow companies to access a large pool of potential solutions for their challenges, as well as other potentially valuable ideas, at a much lower cost than a traditional R&D structure. However, it is important to highlight some potential issues that come with these types of mechanisms as well. A glaring issue is that the participants in the contest must do so out of their own volition, as well as do so un-paid – both of which are opposite characteristics of an in-house R&D department. This can lower the motivation and make the participants under-invest effort in their solution-seeking. Terwiesch & Xu (2008) do also highlight though that the larger volume of solutions does mitigate some of this issue of potential under-investment by the participants. Finally, Kastelle (2013) and Starr (2013) both emphasize critiques on the fact that vast amounts of ideas do not necessarily equal innovation – these ideas need to be managed and implemented in order to become actual innovations and companies that fail to do so are not reaping actual benefits from holding these contests.

2.2.4 Services

An alternate manner to enter the realm of engaging with startups has been to provide special services for startups. The offering itself can vary widely from firm to firm, but may include things like creating a co-working space that they are able to access, offering the firm's product to startups either as a modified version or at a discounted rate, offering startup support and mentorship services. Some examples of large corporations offering services includes the Google Cloud for Startups[6] initiative (offering mentorship, trainings, and credits that can be

[6] https://cloud.google.com/developers/startups/apply/

used toward their services) as well as Microsoft for Startups[7] (which similar benefits to Google as well as special technical assistance, and support on business development and sales sides).

Another interesting example of services are makerspaces – a shared space with various machinery available for producing hardware. At the moment it appears that corporations that are embracing this type of service is mainly utilizing it to encourage intrapreneurship – which is, nonetheless, another manner of engaging with startups. Stanley Black and Decker, a large American manufacturer of industrial tools, has launched Makerspace[8] - an initiative which is currently open to their employees who may have innovative ideas and want to develop them. Although they do plan on eventually opening another space which would be open to the public, their current space encourages innovation through intrapreneurship by having its mission to be "as an innovation tool to allow employees to bring their ideas to life and help drive innovative ideas into our businesses" (Makerspace Stanley Black and Decker, n.d.). Similarly, Microsoft has created The Garage - their own makerspace available to employees which encourages innovation - which they have set up in five countries[9].

Although a lot of these services may also be part of the package in a corporate incubator scenario, this category differs in the sense that the parent corporation has a much lower level of commitment to the startups (and vice versa). This tends to be a more surface-level engagement, where the commitment from the company as well as related costs can be minimal or at least kept to a fairly low rate in comparison to other more intense mechanisms of interaction. This type of activity is implemented in different formats and varies heavily from company to company. However, the common objective remains: seeking to engage with startups, have a better-understanding of what is going on in the ecosystem, identifying trends, and ultimately building up their pipeline for potentially deeper interaction (including converting them into long-term clients).

When providing services to startups, those startups become clients of the firm. This relationship can provide various opportunities in regard to knowledge transfer from the startup to the firm. Sivula *et al.* (1997) emphasize the positive aspects of client interaction in developing a firm's knowledge base. Their model highlights three elements that impact how well knowledge can flow from client to firm. Those include "(1) the transferability of knowledge, (2) a client's willingness to share its knowledge, and (3) a business service firm's willingness and capacity to absorb external knowledge" (Sivula, Van Den Bosch, & Elfring,

[7] https://startups.microsoft.com/en-us/
[8] http://www.sbdmakerspace.com
[9] https://www.microsoft.com/en-us/garage/about/

1997, p. 127). With this in mind, firms who are able to seek out these client relationships with startups and who actually are open to, willing, and capable of absorbing knowledge from them, can gain access to valuable insights through these engagements.

2.2.5 Informal engagements

Lastly, there is also an informal approach to the startup engagement that companies do. A lot of the time this may include activities such as sending executives and staff to various events and meetings where the target public is in line with their objectives. It can also be seen when parent company itself takes on space at an external co-working space and has staff working from there rather than from their corporate offices.

Yet another common iteration of these are events organized by the company itself, such as a conference where the company's product is discussed and executives, customers, developers, and startups that operate within that ecosystem can all interact. Some relevant examples of events organized by large companies include Salesforce's Dreamforce conference (which includes an entire section dubbed Startup Valley where entrepreneurs can get direct access to specialists, as well as various programming within the event targeted specifically to startups[10]) and Amazon Web Services' AWSome Days[11].

The innovation literature that is relevant to this category of mechanisms touches on external communications as being an important element in innovation. Freeman's (1991) study of the factors of innovation success points that one of these factors is "linkage with external sources of scientific and technical information and advice" and goes on to explain that "failures were characterized by the lack of communication with external technology networks" (Freeman, 1991, p. 500). He also has an insight that in innovation the difficulty comes in needing to transform information into knowledge from these various sources into actual knowledge about products, processes, etc., and emphasizes that "networks were shown to be essential both in the acquisition and in the processing of information inputs" (Freeman, 1991, p. 501) . Conway (1995) also emphasizes the relevance of informal communication. His study of 35 innovations showed that 24 of them had informal external inputs that played a major or important role in them role. Both of these articles emphasize that these informal exchanges are often of tacit knowledge, which is often much more difficult to replicate by competitors. Conway explains the value of this in the context of competitive advantage: "Informal

[10] https://www.salesforce.com/video/1579634/
[11] https://aws.amazon.com/events/awsome-day/

boundary-spanning relationships have been shown to be a valuable mechanism through which fresh ideas and information filter into the innovation process, and, as such, represent an important intangible organizational resource, which is difficult to replicate" (Conway, 1995, p. 338).

A summary of startup engagement mechanism categories

In an effort to transition from the literature insights toward to the practical overview of these five categories, a summary of these mechanisms, and some examples of how they may manifest, can be found below. One important point to highlight at this time is that, in practice, the startup engagement initiatives that companies implement can often have characteristics of more than one category, such as a firm that may offer a coworking space for startups (services) also utilizing that as platform for networking events between the firm and the tenants of the space (informal engagements).

In addition to this, companies may also choose to pursue several different strategies at once. It is not unlikely to see a company take a "portfolio approach" to startup engagement by implementing activities from several categories in order to diversify their risk and maximize the potential gains from this type of strategy. An example of a portfolio approach can be seen at Citibank, which has a startup incubator with a strong CVC element[12], as well as banking options specifically for startups in select markets[13].

Mechanism	Examples	Level of effort	Cost	Timeline	Level of Commit-ment
Corporate Incubators/ Accelerators	• Accelerator programs which can range in timespan (anything from a few weeks to a few months tends to be the norm) • Accelerators tend to focus on helping the startup get to a minimal viable product (MVP), validate their product, and validate their business model. • Incubator program where a deep engagement happens. Services made available, work space provided, access to technology/staff with expertise/potential clients.	High	High	Medium-term	High
Corporate Venture Capital	• Creating a dedicated department, or business unit, to focus on startup investments • Strategic investments – look for investments that can bring innovation, new technology, etc.	High	High	Medium- to long-term	High

[12] http://www.citi.com/ventures/
[13] Citi Leap Account in India

	• Financial investments – look for investments that can bring a purely financial return				
Innovation contests and other open calls for innovation	• Hackathons • Solution-seeking innovation challenges with prizes for the winning submission(s) • Open call for innovative ideas that fall within certain parameters	Medium	Low	Short- to medium-term	Medium
Services	• Special services and/or pricing made available to startups • Co-working spaces (paid and unpaid) available for startups and entrepreneurs • Maker spaces	Medium	Low	Short- to medium-term	Low
Informal engagements	• Sending staff and executives to relevant events and meetings • Taking on space at a co-working facility in order to station staff on-site to interact with startups and entrepreneurs	Low	Low	Short-term	Low

Table 1 - Summary of startup engagement mechanism categories

2.2.6 Gaps in the literature

As can be deduced from the previous section, one major gap in the literature is the more exact exploration of the mechanisms of startup engagement and how to potentially categorize these. What the literature does tend to have is categorizations within the types of mechanisms. Some examples of this can be seen in Becker & Gassman (2006a) and Chesbrough (2002), who have sub-categorized types of mechanisms such as incubators and corporate venture capital, respectively. This gap in the literature has been somewhat remedied in this paper through the identification of the five categories utilized in the research and analysis, however the literature as whole does have a gap in this sense.

In addition to this, another gap in the literature that was identified through the research is the lack of the concept of the "angel client". This concept rose from the analysis of the data in the research and is discussed in section 4.2.5. Once it became aware that this was an important concept within this field of corporate-startup engagement, we searched back for literature that touched on this concept. No literature with the concept was located in this additional search, and although other disciplines have studies about big or important clients none were identified that specifically touched on the a large corporation being a key client for a startup.

3. Method

3.1 Overview of the method

This is an exploratory research, which takes on a qualitative research approach, using in-depth interviews with executives to gain insights on the topic of corporate innovation in established companies, where innovation activities include some type of engagement with startups.

The research at hand can be characterized as a “subject approach”, whereas the focus is the firm as whole, not a specific innovation they have created (OECD, 2005). The main focus of the research is to assess innovation activities that involve some kind of engagement with startups, as well as to understand their motivations for doing so, barriers experienced, and perceived advantages of this type of strategy. There are various strategies that fall within this parameter, and although this research cannot be an exhaustive analysis of all of those strategies, it has the objective of shedding light on a variety of these approaches that are currently in use and exploring different facets of the firm’s initiatives.

The interview subjects are from various industries, and have pursued a variety of different strategies, however they fall within the following parameters:

- Established companies (not in startup phase);
- Firms that currently have, or are in the process of implementing, innovation initiatives (different from their everyday, usual activities);
- These innovation activities include external linkages, either through the acquisition of knowledge and technology, or through cooperation with other firms;
- These external linkages include an element of interacting with startups;
- The subjects can be focusing on any of four types of innovation: product, process, organizational, or marketing innovations;
- The subjects can be focusing on both radical and/or incremental innovation;
- The subjects’ innovation activities are in-house efforts (versus just adopting other’s innovations into their processes).

The participating firms were selected in accordance with the criteria above and were contacted directly by the researcher. It is important to make it clear that the interviewees were executives within these firms, and therefore answered the questions through their own lenses and viewpoints. While the interviewees were indeed representing their firms, their responses are inherently influenced by their own personal opinions, approach, history, and other factors that may naturally influence individuals. The participation was fully voluntary on the part of the

firm and the individual, and there were various firms who were contacted and opted not to participate.

In regard to the actual interview participants, there were two criteria they had to meet in order to participate as the interviewee: (1) they needed to have first-hand knowledge of the startup engagement activities of the company, and (2) they needed to be able to speak about them and participate in the study. All of the participants were made aware of the objectives of the research, as well as given an overview of the topics of the interview beforehand. During the interview they were advised that their names and company would be kept anonymous in the research, but that the information discussed in the interview would be analyzed and would utilized to identify valuable insights.

The interviews seek to dive into the firm's approach to innovation, their reasons and motivations for doing go, their view on why this is an advantageous strategy to undertake, as well as their goals for implementing such activities, and the difficulties they have faced. As with any strategic decision, there are many forces that influence the firm's approach. These forces can include a spectrum of things, such as the firm's own structure and culture, financial forces, cultural influences, competition, industry trends and positioning, and public policy. The interviews in this research not only aim to understand what the firms are doing, and why they have opted for this type of strategy concerning corporate innovation, but also what forces seem to have shaped their strategic decisions.

The interviews were guided by a pre-selected list of questions, which were divided into ten larger topics. The detailed list of questions can be found in Appendix A, while the main topics can be summarized as the following:

1. General overview of the company and interviewee;
2. Why the company values innovation and seeks to innovate;
3. How the company seeks to innovate;
4. Goals related to innovation;
5. Innovation strategies;
6. Innovation activities;
7. Corporate structure in which these activities take place;
8. Activities that include engagement with startups – may apply to external startups, as well as companies that facilitate intrapreneurship;
9. Results obtained from innovation activities that include engagement with startups.
10. Other opinions about corporate innovation.

Representatives from seven companies participated in the study. The primary data for each company was gathered through qualitative interviews with these individuals, which lasted between one and two hours each. Several companies preferred to have initial off-the-record conversations to better understand the study before making an executive available for a formal interview. These initial conversations were not used in the analysis but did add to the researcher's pre-interview preparation. Although the interviews tend to be quite an in-depth look at each case, some secondary data was gathered from the companies' websites, media clippings, and other publicly-available sources. These include information such as general company history, public-facing presentations of their startup engagement strategies, financial disclosures, press releases, interviews and other media mention, among others. In order to encourage candor in the interviews, as well as to facilitate the approval of participation by the company, the subjects of these interviews were kept anonymous.

All of the interviews took place between July and August of 2017. All seven interviews were recorded and transcribed, and the analysis of the collected qualitative data was conducted utilizing the software NVIVO. The majority of the category nodes were defined based on the interview guide, but more subtle insights emerged throughout the analysis period and were coded as well. There were 125 nodes defined throughout the analysis period, and these gave rise to the analysis categories listed below in section 4 ("Analysis & Discussion"). While not all of the nodes created were utilized in the analysis, a large majority were. A total of 119 of the category nodes created gave rise to the insights presented in the research analysis. Some of the other nodes that were created during the analysis of the data did not end up being as relevant to the project at hand and, although they were interesting discussions, were therefore not included here at the discretion of the author. These included topics such as the changing characteristics of the modern workplace, interviewees thoughts on the internet of things and artificial intelligence, and seeking partnerships with clients. It is also relevant to mention that the Analysis section does not necessarily go in the same order as the interview guide. The order of analysis was decided based on the best possible way to present and discuss the research findings. One of the overarching motivations in taking on the research is to provide useful information that can be applied outside of academia by executives and managers who have an interest in this type of strategy, therefore the analysis seeks to share the findings in an articulate and logical manner that may not reflect exactly the order of the interview guide.

The research also had a few limitations, which are important to note before presenting the findings and analysis. First and foremost, this research seeks to understand the nuances of

a type of strategy that companies are pursing. With this in mind we must accept that it is inherently a sensitive subject to discuss. This can bring along a natural barrier to certain insights which companies and their executives may want to keep private in order to protect their ongoing strategic approach. It is difficult to pinpoint if and when this may have occurred in the research, but it is beneficial to keep in mind that the information gathered through the interviews may never be the full and encompassing information and insights that could have potentially been accessed if this were a less sensitive subject. One example of this is that companies were not exceedingly open with numbers related to equity investments, costs, return on investment, and other key results that could have given a more objective insight into their startup engagement strategies and additional relevant results.

An additional limitation of the research has been mentioned above, which concerns the fact that the participants of these interviews were individuals within the firms. The data gathered through these interviews then, is inherently influenced by these individuals' personal views and beliefs, as well as their take on each of the subjects discussed. It may be assumed and accepted that in order to be working at the firm, and specifically working with these startup engagement strategies, that they are well-aligned with the firm on these subjects. However, it can impact the research in a certain way if any of the participants unwittingly inserted more of their personal beliefs rather than company-held beliefs into the conversation.

In addition to the limitations, it is also important to highlight a major peculiarity of the research, which is that all of the participants are from one country – Brazil. Although five of the seven firms in the pool of study participants did have international operations, the interviews were conducted with people operating startup engagement strategies in Brazil. As much as they may be aligned with global company objectives, they may not have given insights that are applicable to all of their startup engagement strategies approach globally. This fact, however should not be seen as a limitation of the research. Brazil represents a very large market globally and is often looked at as an important berth for adoption of new technologies, innovation, and new-fangled business strategies.

3.2 Overview of the subjects

The seven companies that participated in the study were of various industries, had a big variation in both number of employees and revenues, and approached corporate innovation in a few different ways. No one company was exactly the same as another, but trends did come to surface which makes for a rich analysis of results.

This research will not name any of the companies or executives that participated in the study, using instead generic descriptors and a code letter to represent each company. A brief overview of each subject is below, along with the code that will be used to represent that subject throughout the analysis section of this research, as well as a descriptor of the role of the interviewee who participated in the research.

3.2.1 Company A - **Service provider for the oil & gas offshore industry**

Interviewee: Manager-level executive, overseeing startup engagement strategy.

Company A has been a service provider to the highly regulated oil & gas offshore industry in Brazil for the past 20 years. They are looking for innovations that can help them bring efficiency to their processes as well as new products and new services for their clients. They are in the first year of implementing a strategy of startup engagement, and their current plan includes a bevy of activities within a 12-month timespan which has as an objective the generation of innovative solutions in inspection, maintenance, and repair. Their search for solutions is focused on three types of technology: robotics, sensors, and data intelligence.

Company A does not have any full-time dedicated staff for corporate innovation projects and is engaging with startups mainly through a third-party consultancy service which has been hired to organize and run a variety of corporate innovation activities for them. These activities include: (1) a week-long immersive event called an “ideation week”, followed by (2) a period of incubation for some of the best solutions that may come out of the ideation week, (3) a series of R&D workshops where they seek to engage with clients and partners within the scope of innovation, and (4) various roadshow events where selected startups present their projects that are aligned with the innovation objectives of the company, as way to generate potential partnerships and business opportunities.

Outside of these main activities being led by the third-party service, company A is also utilizing the informal engagement approach by taking up space at a downtown coworking space in order to allow their executives and employees to be closer to the startup community and thereby also be able to assess what is going on in the startup ecosystem and to more easily interact with startups that are developing technology that interests them.

3.2.2 Company B - **Energy producer & other services**

Interviewee: Director-level executive, overseeing startup engagement strategy. Major decision maker and influencer within the company.

Company B is a multinational corporation acting in the energy sector and has their hands in a few different corporate innovation strategies. The company has identified two challenges that they have currently when it comes to corporate innovation: the company culture, and the need to improve the management of innovation within the business unit. For this research, we spoke with the Brazilian business unit of the company, which has a level of autonomy to run their own projects, such as these corporate innovation initiatives which are in line with their global strategy as well. They have been experimenting over the past few years with activities such as one-day challenges, awards, and supporting a third-party incubator located in the same city as their headquarters. Besides seeking to work with startups more closely, the company is also aware that there is a need to develop innovative solutions in-house, and has therefore dedicated a department within the business unit to digital solutions.

Company B has utilized the support of third-party services in order to map their innovation management as well as to implement some of the improvements proposed by that consultancy. In addition to this, they sponsor a local co-working and startup incubation space, which gives them access to events and network within the startup ecosystem.

Although they are early on in their strategy they are open to pursuing the corporate venture capital approach at some point, which tends to match their approach to growth which has been significantly done by means of mergers and acquisitions throughout their history.

3.2.3 Company C – **Large-scale infrastructure construction**

Interviewee: Director-level executive, designing and overseeing startup engagement strategy.

Company C is a large Brazilian construction company operating on a global scale across 40 countries. This company launched the first corporate accelerator program in Brazil focused solely on "construtech".

Initially, company C began their startup engagement through a one-day challenge event for startups to pitch solutions for one of the company's issues. Following this initial foray, company C sought to plan and launch a startup accelerator that would bring on startups that had an innovation that could be applied in the company's projects. They took a careful approach in planning and designing their accelerator, and although they do have some full-time staff dedicated to the corporate innovation activities, they also brought on a third-party startup accelerator to assist them in running the day-to-day of their in-house accelerator.

Company C applies a very partnership-focused approach to their startup engagement, where they want to see the startups have a chance to succeed in this very bureaucratic

environment they operate in. The accelerator program allows the startups to prototype the solution they brought to the company, and the pitch this solution to all of the company's project managers. The project managers in turn select which prototype(s) they would like to test on a construction site and bring the startups on-site to run the trial of the prototype, validate the product, and make improvements and changes as needed.

The company makes no equity investments in the startups, however, they do take on the cost of prototyping the solution as well as paying the startup for their services if they are hired to run the prototype by one of their project managers. They are currently in their first year of the program.

3.2.4 Company D – **Tubular production & solutions**

Interviewee: Coordinator of startup engagement strategy. Hands-on and very close to the design and execution of the strategy.

Company D is a tubular solutions producer in Brazil with operations throughout different regions across the world, including various locations as well as the company's corporate headquarters in Europe, North America, and Asia. Their main products are tubes that do not have a welding seam. Besides the physical product, the company has also moved into providing services related to their products, mainly ancillary digital services with functions such as traceability and data management related to their tubular solutions, with the goal of providing additional value for their clients. Currently their main customer segment is the oil and gas industry but they also serve a diverse group of other industries such as automotive, construction, and agriculture.

At the time of research, company D had five different ways in which they were interacting with startups in order to bring innovation into the company. Their main initiative is an open call to startups who may be developing solutions that are applicable to five defined challenges that the company is seeking to improve. This open call creates a funnel that eventually brings startups in to participate in an incubation program with the company, with the goal of helping them develop the innovation and eventually bringing the new technology into the company's portfolio.

The company traditionally had a research and development department, and two years ago added a dedicated staff function of innovation management within the R&D department, with a focus on managing these open innovation initiatives that the company has sought to implement. Their main open challenge program has been 100% created and ran in-house, with

no support from third party services or consultancies. They do, however, have other smaller programs in partnerships with other companies, academic centers, and government initiatives.

The company had several motivations to innovate, including building knowledge of new technologies as well as having leaner and more agile teams that could focus on potential innovations that were outside of the day-to-day of the company. They keep a focus on digital innovations that align with their core product offerings and bring additional value to their clients. Although they have not experience disruption from competitors, they do have a vision that emerging technologies have the potential to change their industry dynamics and want to make sure to be a leader in bringing new technologies into their offerings.

3.2.5 Company E – **National Telecom**

Interviewee: Manager-level executive, leading startup engagement strategy and day-to-day operation of corporate incubator, as well as leading startup engagement pipeline for the firm.

Company E is a large player within the Brazilian telecom industry. The company has several startup engagement mechanisms in place at the moment and are committed to continuing this approach in the coming years. Company E utilizes mainly the mechanisms of corporate incubator and services, while also building in some element of corporate venture capital within their incubation funnel (through an inclusion within their contract to exercise the option of equity investment in the startup). An important element of their startup engagement strategy is the inclusion of a dedicated building to its main innovation and startup engagement activities, where they have their main program (a corporate incubator) as well as a paid coworking space dedicated to startups.

They are currently in their first year of the program, and had a total of six incubated companies, after narrowing down from 18 finalists. Within their contract, company E has an option of a blanket 10% stake in equity for R$150,000 investment in the startups currently participating in their incubator program, and within this first year they have decided to exercise this option with all six of the participating startups. For company E, one of the most important elements of their startup engagement is their network approach to it – leveraging their own ecosystem of vendors, contacts, clients, and knowledge to propel these startups help them in succeeding.

In looking towards the second year have already indicated that they may change some elements of the program design such as the built-in equity-for-percentage contract inclusion as well as the types of technology innovation they focus on.

3.2.6 Company F - **Chemicals & plastics productions**

Interviewee: Manager-level executive who designed and initially led the company's startup engagement strategy.

Company F is a chemicals and plastics producer that has been systematically engaging with startups since 2015. They have three strong pillars that guide the company's activities overall, which are sustainability, innovation, and competitiveness. These guiding values over the years have brought about a company DNA that does take innovation seriously, and eventually gave rise to adding an open innovation approach to their strategy. They currently have a three-part startup engagement strategy in place. Their activities seek to engage with startups working on innovative solutions related to plastics and other chemicals they work with. In addition to this, company F also has an emphasis on finding innovations that have a positive impact on society, in areas such as agriculture, recycling, health, transportation, and others.

Their main startup engagement activity is a two-pronged corporate accelerator strategy, one side tackling early-stage startups seeking to validate a minimum viable product (MVP) and the other providing a months-long relationship to help the startup scale and find success in the market. In addition to the accelerator approach, company F also uses the open innovation challenge mechanism, where they have eight different challenges they seek innovative solutions to. This challenge approach opens up a month-long enrollment period and pre-selection phase, followed by a pitch day, where a selection is made and startups move on to a week-long immersion with the teams responsible for those challenges. At the immersion phase, startups get a great amount of information and deeper understanding of the challenges they seek to remedy, and then do a more in-depth pitch to the company about how they would tackle this. There is then another narrowing of selected startups that get the chance to run a pilot with the company, in hopes of eventually becoming a regular service provider to company F.

There have been changes made to their approach between starting in 2015 and now. Notably, company F decided to make a smaller pool of selected startups for acceleration, as well as breaking up the acceleration into the two-pronged approach in order to better-serve the startups in differing stages. Company F considers that in the future they may also utilize mechanisms such as corporate venture capital and services (more specifically creating a coworking space).

3.2.7 Company G – **Global Telecom**

Interviewee: Manager-level executive, part of startup engagement strategy team, focused on pipeline of potential partners.

Company G is a global telecom that has a wide range of open innovation strategies, including several that are focused on startup engagement. Out of all seven subjects, company G has had the longest running startup engagement strategies in place, as well as the highest number of different activities within this strategy. They categorize their strategies within three groups: the first of which is focused on encouraging and motivating very early-stage ventures and individual entrepreneurs, the second which concentrates on startups that are ready for acceleration and potentially early investment, and finally a venture capital category where they look at investing in both advanced companies and startups.

The company's most robust strategy in place in the Brazilian market is their corporate accelerator. This initiative was originally born in Colombia as an innovation award, and in its second year evolved into a startup accelerator program. Today this mechanism is utilized across 10 countries where the company is present, encompassing Latin America and Europe. The accelerator maintains on average an investment of around 50 thousand BRL for a stake of under 7% in the startups it accelerates.

Throughout their years of operating open innovation strategies, Company F has shifted more and more toward the initiatives are geared toward more mature startups as well as put a lot of emphasis on the corporate venture capital side of their strategy.

3.2.8 General overview of firms participating in this research

In order to add a more general context of our seven subjects, the following is a compilation of additional descriptors of the group of firms participating in the study. In a further effort to not identify the subjects, the data below is not attributed to specific participants, while it does give a broader perspective of the profile of companies undertaking these types of innovation strategies.

General Overview of Participating Firms	
Attribute	**Relevant numbers**
Years in business	Range: Between 23 and 94 years Average: 49.5 years Median: 40 years
Company size (by number of employees globally)	Smallest: 540 employees Largest: over 220,000 employees Average: 77,500 employees

	Median: 19,000 employees
Global reach (by number of countries in which the company has operations present)	Only two of the firms operate solely in Brazil. The remaining five firms operate in between 4 and 70 countries.
Revenue[14]	Smallest: $51 million USD Largest: $52 billion USD Average: $11.4 billion USD Median: $3.3 billion USD
Years implementing startup engagement activities	Most of the firms in the study have had startup engagement strategies in place for between one and three years. The firm with startup engagement strategies in place the longest has been implementing it for eight years.
Staff dedicated to innovation activities	Six of the seven firms have at least one staff who is dedicated to their startup innovation strategy implementation. The only firm who did not have a dedicated employee also happens to be the smallest in terms of size.
Use of third-party services	Six of the seven firms have used third-party services in at least one facet of their strategy planning or implementation.

Table 2 - General demographic data of study participants, looked at from a full company perspective (not solely Brazilian business unit).

It is clear that the companies in the study vary widely among each other in all categories, and the author believes that this brings a richness to the results of the analysis as it demonstrates that firms on widely different sides of the spectrum in every way are seeking to implement similar strategies of corporate innovation.

4. Analysis & Discussion

The analysis of the interview data is divided into two main sections below. The first section is solely focused on the "what", and looks at which firms utilized each of the five category of startup engagement mechanisms identified in section 2.2 ("Corporate Innovation and Engagement with Startups"). The second section looks at wider variety of insights that emerged from the interviews. Namely, this section looks at (1) the reasons that companies identified as motivations for seeking corporate innovation and startup engagement, (2) difficulties they have encountered with this strategy, and (3) advantages of startup engagement. This second section also includes an analysis of various practical aspects of the strategy (such as the utilization of third-party services and the degree of formality of the contracts used

[14] Information on revenue compared for this overview came from publicly available data from the years 2016 or 2017. Revenues were all compared in USD, with the prevailing rates of BRL$3.69 to USD$1 and EUR €0.87 to USD$1 (current rate at the time of writing).

between the firm and the startups). The analysis is concluded with a discussion of a new concept – that of the “angel client” – which emerged from the research.

4.1 Analysis of mechanisms used

The following table identifies which companies currently have different types of startup engagement mechanisms in place. It is relevant to mention that no mechanism necessarily lives in a vacuum. Companies often choose to utilize a mechanism while including elements from others that they may find complement their strategies and needs in a coherent manner. A typical example of this is a corporate accelerator program whose selection criteria includes a specific challenge it seeks to address and also includes some type of equity investment within the program, without the company necessarily setting up a dedicated CVC unit to handle this type of transaction. In this type of scenario, “corporate incubator/accelerator”, “Open Innovation Challenges” and “Corporate Venture Capital” would all be marked on the table. The subsections below discuss each category of startup engagement and analyzes relevant insights that the field research brought to light.

Startup Engagement Mechanism Categories Utilized by Study Participants

Mechanisms	Corporate Incubator/ Accelerator	Corporate Venture Capital		Open Innovation Challenges			Services	Informal engagements
Company		Strategic	Financial	Hackathon, Other short-term event	Solution-seeking challenge	Open call for innovation		
A				✓	✓			✓

B				✓	✓	✓		✓
C	✓			✓	✓			✓
D	✓			✓	✓			✓
E	✓	✓	✓		✓		✓	✓
F	✓				✓			✓
G	✓	✓	✓					✓

Table 3 - Overview of mechanisms utilized by firms participating in the study

4.1.1 Corporate incubators/accelerators

Companies utilizing this strategy: C, E, F, and G.

Incubation and acceleration programs mechanism were frequently utilized by the subjects in our study as a startup engagement tool. This category was third to open innovation challenges in how many times it appeared among the subjects. However, it is important to note that a lot of the solution-seeking challenges that we saw among the subjects were actually tied to an incubator or accelerator program, and many times acted as the initial step of the funnel for these programs.

These types of initiatives tend to be commitment-heavy, require that companies be hands-on, and do require a certain level of financial investment that while not small, is also not likely to be a huge risk for these firms. In addition to these resources that must be allocated to these types of programs, running an accelerator also requires specific knowledge that the firm may not have at the outset. A lot of the planning process for these initiatives required that the firms study and benchmark other similar programs, in order to plan and implement a program that made sense for them. In taking on this type of strategy, these firms had to often partner with outside service providers who could help them budget the gap in knowledge that they may not have (also discussed in more detail in section 4.2.4 “Practical aspects”).

In planning the programs first were faced with decisions around many critical aspects of their strategies. Would they be hosting the accelerator in-house? How would the selection process work? Would they be engaging other executives to participate in the program? Would the hire startups as vendors in the end? What emerged as clear insight in relation to this category was that each of the programs were different and met the needs of each company according to their objectives. A firm that was more motivated by potential financial gains was likely to add an element of equity investment into their program, while firms who were motivated to

implement this strategy to help them change their traditional entrenched corporate cultures may have prioritized the participations of executives as mentors for the accelerated startups.

> "Equity, valuation, etc. … I didn't want to do that because I knew it was a model that for us didn't make sense. But when I would look around for accelerators in the 'construtech' space there weren't any. We were the first construtech accelerator in Brazil. I said 'we're not going to have anyone to copy, we're going to need to do the first version and test it out. We're going to make mistakes, we're going to get some things right, and we'll see what happens."

- Interviewee Company C

> "we try hard to connect the startups with the company through mentorship. And these mentorships are not just from the corporate executive to the startup, but we also learn a lot with them. So it is an exchange, we help them develop their business and they help us to be more flexible, to understand how the world is today, learn about technology, etc."

- Interviewee Company C

> "In [our accelerator program] we hire two of the startups at the end. What is also different about our program is that we built the entire program ourselves, we didn't hire a third-party accelerator to organize it, we did it ourselves."

- Interviewee Company D

Selection criteria for these programs vary from company to company, but the common denominator is that they narrow down certain themes or areas of technology they are looking to innovate around. The narrowing of these categories may come from different processes within the company, such as one or various departments listing priorities, the company's overarching corporate objectives, client-side demand, and even trends in the industry.

Besides having the initial criteria that the startups must bring solutions related to certain themes of types of technology, the remaining selection criteria for assessing the startups can be quite different among the study participants. Some companies took into consideration elements like sustainability and fit with the core business of the firm, while others included HR and other departments in the analysis of the startups for selection.

> "[The categories] can come from various places. Last year it as very aligned with the global strategy of the company. This year was more or less the opposite – … we saw that there were a lot of startups that could bring us solutions related to computational vision, image generation, etc. So we looked for areas within our company that would have a demand related to these types of technology."

- Interviewee Company D

> "We look at other things [besides the categories] as well. … such as making sure the startup's CNPJ is OK, that they don't have any pending legal issues, what team they are allocating to this project, what they level of these team members are, what are some success cases they have, what business model do they have, what clients may they already have … but some other things we leave out, for example their revenue. … We look at various things and then our HR department also helps us to assess them because sometimes they are very good technically but maybe won't be able to actually deliver what they promise due to other attributes. The procurement department also helps us [in this analysis]."
>
> *- Interviewee Company D*

> "The selection criteria was the profile of the entrepreneur … as well as the relevance to our main products, [and] how innovative their solutions were. It could be a simple solution, it didn't necessarily need to be something major but if it was a solution that wasn't currently in the market then it was an innovation. Sometimes the innovation wasn't even the product, it was a business model, so we would also consider that as innovation … we also looked at sustainability, how much impact that innovation would create."
>
> *- Interviewee Company F*

> "the areas of interest we had were a guideline but were never a restrictive factor, we were open [if something amazing came along that was outside of those areas]. There were five criteria we mainly used which were stage of maturity of the startup, level of innovation of the solution, qualifications of the team, market potential … and the fit that this solution had with our points of leverage that the company could offer them."
>
> *- Interviewee Company E*

> "first we did an ethnographic analysis of the startup to see how much our teams could utilize the technology as well as how well it would do in the short-term since our timeline would be about five months (so we know we wouldn't be changing the startup's team members in that time). We also looked at systemic challenges that technology could be developed to solve."
>
> *- Interviewee Company C*

Lastly, one other relevant element related to this category of startup engagement mechanism is that these initiatives require that the startup take the initial step of interacting with the firm. This means that if they don't market the program through the right channels, they may not necessarily reach the best possible participants for their intended objectives. This element only came up in one of the interviews, and I believe the lack of this topic in the other discussions makes it relevant because it points to the notion that a lot of other firms who are utilizing these mechanisms may not be necessarily thinking about this important component that can help them have a successful strategy in place. It becomes clear that these initiatives are not necessarily a case of "if you build it, they will come", if you do not build awareness of

your work within the right channels, you may limit the potential of the strategy of being a success.

> “our third-party partner would do the active search of the startups, we would ask for suggestions from the mentors, we would share the program with the whole company, letting everyone know that we had opened the selection process and that they could send suggestions of potential participants, and we also announced it through the media. We had a media plan with radio spots, we did partnerships with relevant blogs that had an entrepreneurial public…”
>
> *- Interviewee Company F*

4.1.2 Corporate Venture Capital

Companies utilizing this strategy: E, G

Corporate venture capital was not widely utilized by our study participants. Out of the seven firms interviewed, only two were currently engaging with startups through equity investments. Company G was doing so very directly – they have a big focus on CVC in their strategy and over the years have moved away from the more hands-on mechanisms such as accelerators and have focused more of their efforts in CVC. Company E, on the other hand, utilizes the CVC mechanism in conjunction with their main strategy of having an accelerator. Part of the deal that comes along with participation in their program is that startups get access to R$150,000 BRL in exchange for a 10% stake. This specific element is discussed in section 4.3.4 (“Practical Aspects”), where there is a more detailed analysis of how it may have impacted their program.

The two companies utilizing this mechanism are both from the telecom industry and while they both do utilize CVC it was interesting to see how they each differed in their insights on this topic. One wanted to maximize their potential gains from these startup engagements while the other was looking for true long-term exponential returns like a normal VC might. This difference in expectation can be a mark of a more mature program, from a company that has been doing this much longer and may have already gone through the learning curve and adjusted their expectations accordingly. The company that has been doing this longer (Company G), for context, has had 68 investments in startups in Brazil, and today still holds a portfolio of 35 investments.

> “we had been working with startups for a while through some investment funds we had directed toward innovation and from the point when we started to have some success with these startups we began to defend the idea of actually [engaging with them] in a more structured manner. There were a few cases where we helped startups

> grow a lot and at the time I had tried to persuade us to participate in the equity of these companies but back then it didn't make sense for the company. What was curious was that after, some of these startups evolved really well and the question came up as to why we didn't have part of the equity. But we can … so I think that we can try and do this in a structured way. We can help startups grow while at the same time owning part of their equity so we can get even more out of these investments and solutions [that we are seeking]."

- Interviewee Company E

> "We have had a return on investment. Of course, like any innovation initiative the ROI is long-term. Many companies often fail to realize this, and think that they will invest in startups and soon have results, and it doesn't necessarily work that way. … We want the startups to [grow a lot] or it doesn't make sense for us to stay on as investors. It doesn't make sense for me to ask for dividends from a company that has R$300,000 BRL a month in revenue. So what will do I do? Participate with equity? It doesn't make sense in that case. We want to be able to sell the companies further down the line… [so they need to have the possibility of major growth] because we are investors and in the future we want to sell our part and be able to pay off all of those other investments that didn't materialize in the same way, and still have a solid amount of money left over."

- Interviewee Company G

A very interesting insight related to CVC that emerged from the research came from the participants who were not currently utilizing this mechanism. It became clear that many of the participants who were not using CVC at the moment had at least thought about it as a future startup engagement activity. During various conversations this was explained in the context of it being a mechanism that they would consider using once their strategy was more mature. Out of all of the mechanisms, CVC is probably the most "specialized" tool – it requires companies to have very specific capabilities in-house that they may not have at the time, including the prospecting of startups with a vision of growth-seeking and financial return rather than a vision of solution-seeking and stronger focus on innovation. In addition to this, the financial investment is much larger in comparison to other categories of mechanisms listed here, so it is not something that companies tend to lean towards in the early years of their startup engagement strategy.

> "we are starting to discuss now how to possibly create a venture capital fund in Brazil. I think that would be a major boost in building partnerships with startups that are in later, more mature stages."

- Interviewee Company B

> "for us to invest I don't see any barriers [money-wise] … but I see that we are not ready, so I think that with time when we are very good at accelerating startups, we will probably also be very good at evaluating startups, so we'll be able to understand

> which ones are worth more or less and think about corporate venture. … we are going one step at a time, we have always been like this and one step at a time we will get there."
>
> *- Interviewee Company C*

> "in corporate venture you are very focused on having results through the startups, and today we are very focused on developing solutions, so we would likely need to create a separate structure or department for that."
>
> *- Interviewee Company C*

> "we haven't done it (CVC) yet, but we have raised this as a possibility for one of the startups. … In my opinion we don't have the maturity yet to do this, but we are walking towards it."
>
> *- Interviewee Company D*

4.1.3 Open Innovation Challenges

Companies utilizing this strategy: A, B, C, D, E, F

A few of the study participants who are utilizing this category of mechanism are doing so in conjunction with an incubator/accelerator strategy. Their open call for innovations tends to be the initial step of the funnel to bring startups into their incubator/accelerator programs. For example, Company E defines a few different challenges the company is seeking innovations for, and in order to participate in their accelerator, startups must have a solution for one of these challenges. The model that they use to funnel startups into their accelerator is an open innovation challenge. They set these themes, or priorities, of what they would like to seek solutions for, and once startups send in their applications to participate, they initiate their way through an elimination process. Eventually the startups spend about a month in more hands-on engagement with Company E, and eventually a handful of them are selected to enter into the actual accelerator program.

> "we had mapped a few areas which we understood may have unexplored opportunities, and that our business development team was already searching for some solutions in these areas which could be incorporated into our business. So what we did was transpose this into our criteria and we are open to receiving solutions in these areas."
>
> *- Interviewee Company E*

> "with our first big initiative our objective really was to select startups that would help us in developing digital products and would help us … [in providing] solutions related to our core product"
>
> *- Interviewee Company D*

On the other hand, you have study participants who have set up and online platform where people can continuously submit potential solutions at any time. This approach can also have a variant of launching themed challenges, where the company presents themes, challenges, and specific requests and participants can present solutions geared to those. One of the big advantages of these online platforms is that startups from any location can submit potential solutions, so companies who have this automatically broaden their reach. Consequently, this can also help a company increase the quality of potential solutions as an online platform removes geographical barriers to participation and may yield solutions from startups with more expertise versus those closest to the company.

> "We seek to utilize the open innovation platform that the company has as a way to call for projects. We have done calls for three different projects. [Through this platform] I can access a variety of entities all over the world. Startups from all over the world that can present potential solutions for the open calls we put on the platform."
>
> *- Interviewee Company B*

Besides these open calls for innovations that are in the form of a contest or competition, some of our study participants also use other open challenge mechanisms such as one-day events and call for submissions for innovation awards. Company B, for example, has a yearly initiative called 'Innovation Day' where they look at startups who are working on solutions within a certain theme and eventually choose three finalists to honor at a ceremony. This type of startup engagement mechanism allows them to take a look into the startup ecosystem and see what types of solutions and new technologies may be coming up in relation to themes that are important to their business. This type of insight is valuable to firms and is often difficult to access through traditional means like market research.

> "We began to approximate ourselves with a variety of startups. Actually, our first initiative was an 'Innovation Day', which now do every year. We pick a theme, launch an open call for projects [within this theme], and startups participate."
>
> *- Interviewee Company B*

> "The other initiative we have is the 'Startup Day'. This year we have done three of them and we will probably do a fourth one. The objective is to bring startups that can do a pitch or a presentation for the various areas of the firm. So we may do one that is focused on logistics, another one focused on HR …. It is basically a matchmaking event because it is difficult to get the people in-house to go out and meet the startups. Usually it was [a couple people] that would go out and meet them, but it doesn't have the same effect as having them here pitching directly to the different departments that

> could be their potential clients, so we started to organize these events to foster a deeper interaction and it has worked out well."

- Interviewee Company D

Another interesting insight that emerged from the firms utilizing this type of mechanism is that since they can be more short-term commitments versus some of the other options, these can be used as an initial step for startup engagement. Firms that want to pursue startup engagement strategies but are not sure how to initially get involved with this ecosystem, or aren't sure if it is worth it to undertake a more commitment-heavy approach, can utilize things like an innovation award or a one-day demo day event as a pilot. Once they see that indeed this type of strategy can bring value to them, then they can start to evolve their strategies and utilize other types of startup engagement that require deeper commitment (i.e. CVC and accelerators). In addition to acting as a pilot or initial step, this approach can also help in gaining the buy-in from the organization and other employees – once you can show them that indeed there is value to be gained through startup engagement you may be able to get the support needed to implement a more robust strategy.

> "so we needed to start somewhere … we said, 'what can we do that will show that startups can bring value to the organization?' … so we decided to do a challenge … we said 'we have challenges in engineering and executive methodology having to do with equipment and materials, so if you're a startup that deals with one of these themes, and you want to scale your business, you want to sell, come and talk to us…

- Interviewee Company C

> "To move into the realm of startups engagement we started with [an open innovation] challenge … we didn't have the maturity as a company to create an accelerator right away, so we went one step at a time. So we did it and it was a success. The most closed-minded people here ended up saying 'that solution was super useful', they felt very revolutionary and modern. But we said 'OK, but this isn't a competitive advantage [in this format]. How do we start to develop technology that we can use a competitive e advantage?"

- Interviewee Company C

> "once we had our 'Digital Day' we felt more secure to move towards the accelerator, to do something that went deeper and was more focused on innovation."

- Interviewee Company C

4.1.4 Service

Companies utilizing this strategy: E

Only one of the companies in the study are utilizing services mechanisms as a means to engage with startups. Company E has invested heavily in creating a co-working space whose occupants are all startups. They have an entire building dedicated to their startup engagement strategy, which is a substantial investment in both real estate and staffing costs. The building itself is being used to house their accelerator program as well as offering co-working space for startups who are not part of the program. Although there is a high cost associated to this service offering, the startups who are residents of the co-working space (but not part of the accelerator) do pay rent and therefore this becomes a revenue stream that can help to offset the costs of the startup engagement strategy overall. Of course it won't cover the complete cost but is still a positive attribute of this strategy.

Offering the co-working space also brings a few other advantages to Company E. It strengthens their connection with the startup ecosystem overall and allows them to have a wider reach than just the number of startups that they can have participating in the accelerator. It also gives them a front-row seat to observe and interact with other startups, see what they may be developing, and potentially build relationships with them in other ways such as the startup becoming a client of theirs, or vise-versa. In regard to their accelerator program, having these co-working residents not only adds to their pipeline of potential participants for future batches, but may also help them in bench-marking these potential applicants in a more in-depth manner for their selection process, as opposed to startups they had zero connection to before.

This also has a positive benefit to the startups in their accelerator program, who have more founders and technical know-how within this space they also co-habit. Startups can start to interact amongst each other, develop new solutions with knowledge they may not have had on their own, gain customers, and grow their business while they are there. This of course helps the company indirectly as the startups grow stronger and more qualified.

> "one of the things we have thought about implementing is a type of monthly or bimonthly meeting with the resident startups so they can tell us about their business and we can keep up with their development. This way we could keep up with our resident startups and maybe once they hit certain levels of development maybe it makes sense for us to start doing business with them. We get to know them – the good and the bad. Just the fact that we are here day-to-day we get to know them … you keep up with these businesses and you may start to see that they have positive points and it may even make it easier to justify doing business with them at some point."
>
> - *Interviewee Company E*

In offering services, what companies are essentially doing is sharing resources. This is quite interesting in the scope of the resource-based view discussed in the literature, as we can

see this approach as a bigger player offering valuable resources to a smaller newcomer in order to meet certain goals and objectives of theirs. These large companies that offer this sharing of resources through offering services to startups are looking to stimulate their own markets by fueling innovation and fostering the survival of potentially valuable and strategic partners and even future customers.

Although the services mechanisms category was the lest used by the participants in our study, I see a lot of positives in companies pursuing this type of strategy to engage with startups. It would be beneficial for companies to look at the likes of Microsoft, Google, and Salesforce, all of whom have either created dedicated products, sales channels, or special discounts for startups. This approach can help companies build a strong pipeline of potential customers – they must recognize that today's startups could be tomorrow's whale, and it is worth investing in these offerings in the long-term.

4.1.5 Informal engagements

Companies utilizing this strategy: A, B, C, D, E, F, G

The informal engagement category is quite broad, and it is no surprise that all of our subjects utilize this approach in one way or another. The majority of the subjects employ informal engagement mechanisms such as having executives and staff attend events and conferences related to the startup and innovation ecosystem.

Two of the seven subjects however, utilize the mechanism of co-location as tenants in coworking spaces – these are companies A and B. Company A rents an office within a WeWork location in the downtown area of the city. This is not close to their headquarters (which is in an adjacent city altogether), and it gives employees the flexibility to work from an alternate location when they deem it useful. Company A sees this as a way to get closer to the startup ecosystem – seeing what may be happening in real time and taking the opportunity to interact as co-tenants rather than with the pressure of a more formal corporate-startup relationship. With this approach they are able to interact as equals, for example an executive may have a beer with an entrepreneur which is a much easier setting to get to know a potential startup than inviting an entrepreneur over to their HQ for a presentation meeting. In addition to these opportunities for informal engagements with startups, this co-location strategy also helped Company A to build a relationship with the third-party service provider which they ended up hiring to run their open innovation challenge program.

Company B, on the other hand, uses a different approach to their co-location with startups at a coworking space. Instead of being a traditional tenant of the coworking space (i.e.

renting a certain area of the location and allowing employees to work from there), Company B has instead chosen to be a corporate sponsor of a coworking space in the city where they are headquartered. Their sponsorship of the space gives access for their employees to work from the coworking location if they please, as well as access to wide array of events that take place in the coworking space.

As has been mentioned above in the services section, Company E also utilizes this mechanism. Since they are actually a coworking space provider, their startup engagement team is collocating with all of the coworking tenants (all of which are startups). As the managers of the space, they fall within the services category above, however, since they are also working from the location on a day-to-day basis the informal engagement category also applies as not all of their interactions are structured.

In a similar tone to Company E, company C also has a co-location strategy in place, as their accelerator program is located in the same building as their HQ. They remodeled an entire floor to better suit this type of activity and to promote this push of innovation culture to the rest of the company through elements such as open office space, a less formal environment, and colorful décor that is conducive to creativity. The space is open for use by the employees of the firm, and it is not unlikely to see people utilizing the space for meetings – something that helps in exposing the employees to a more innovative culture, while at the same time inviting them to also engage with the resident startups in an informal manner.

This co-location mechanism of startup engagement provides a few different benefits to the firms who choose to do so. By co-locating in these spaces that tend to house mostly startups and entrepreneurs, the company exposes itself to new technologies, new ideas, and even potential new hires. This is especially relevant as they may be gaining these insights much earlier than their competitors simply by physically being there and sharing space with these entrepreneurs and startups. In addition to this, employees are able to transition toward a more contemporary work culture by having the flexibility to choose to work out of the WeWork space rather than the traditional company HQ. This is a good catalyst for change in the culture of the company, where employees are exposed to a less traditional format of day-to-day work culture (versus the more rigid traditional culture they are used to at HQ), that exposes them to different people, different ideas, and ultimately may help inspire a more innovative spirit within the company.

However, the co-location mechanism also has a few limitations. Just being present in one location may not be an efficient way to get closer to the startup ecosystem as whole.

Coworking spaces today are commonplace in large cities, and building strong relationships in one of them leaves out the majority of startups that are inhabiting them. Therefore, it can be a time intensive activity for key executives involved in corporate innovation, that may yield a low amount of significant connections and insights. Furthermore, since this is a less-structured approach, it is difficult to measure the actual impact it has. Certain employees utilizing this opportunity for co-location can result in many connections made for the company, but the fact that it is not done in a more methodical manner may hinder the firm from gaining the most out of it and utilizing this as a step to bringing actual innovation into the company.

It may be useful to utilize the co-location mechanism, as well as other forms of informal engagement, as an additional strategy for startup engagement, rather than as the primary strategy. It can however, be a good first step for firms who are looking for ways to build startup engagement into their innovation strategies. Since executives are already in the habit of attending events and conferences for business development and networking, having them focus some of that time and attention to the startup ecosystem can help them get closer to startups. Co-locating can also be a useful initial step, as long as the expectations that come with it are realistic for the likely outcomes.

> "this [interaction] happens in an ad-hoc manner here. Since we have resident startups at the co-working space, and we are also in this space, we end up building relationships with them and gaining an awareness of their business, and then we can maybe come up with ways in which we can do business with them"
>
> *- Interviewee Company E*

> "our accelerator is to accelerate the culture, because we want a more flexible, innovative culture, and this co-existence helps us to accelerate the change in culture. This is why we decided to create an accelerator in-house rather than to outsource it"
>
> *- Interviewee Company C*

4.2 Analysis of the interview themes and main findings

The field research resulted in interviews that were quite broad in the topics they addressed, and as a consequence the data captured through interviews was quite extensive and diverse. This section strives to organize the most relevant and valuable data that emerged from the interviews. As with many research efforts, this is not likely to be an exhaustive list of every relevant topic when it comes to startup engagement, however it does cover the subject extensively and gives insights from the participating firms on the majority of the subjects discussed. Each of the six subsections below includes a brief overview of the topic, analyzes

important insights that emerged, and also highlights some direct quotes from the field research interviews in order to give a well-rounded view of each topic.

4.2.1 Motivations to innovate

The seven study participants had a wide array of reasons that motivated them to implement corporate innovation strategies. The most likely scenario that emerged from the study is that companies did not have one single reason to seek innovation strategies and startup engagement. Instead, each company gave weight to a few different reasons when assessing whether this was a valuable strategy for their business objectives.

A very important set of motivations that emerged from the research were centered around overall **company survival**. Corporate leaders see many different things that could impact a firm's long-term success, and our study participants appreciate that open innovation is a valuable strategy in seeking sustainability for the firm. Within the theme of survival emerged two different facets – they are not necessarily similar to each other, but both ultimately lead to the premise that companies may seek open innovation and startup engagement as a way to increase their long-term viability and success.

Some of our study participants saw that there were **major changes going on in their industry** and understood that it was imperative to be ahead of potentially business-destroying trends that could unsettle them in their position as incumbents. This brings us to the concern with differentiating themselves from the competition – or in other words, **seeking competitive advantage over their current and potential competition.** It is clear to companies that things are changing, technology is moving at a faster pace, and that long-standing corporations being disrupted is a realistic scenario that they face. Looking to increase their competitive advantage among their competitors is a key component of their corporate strategy.

These firms are looking to open innovation as a window into potential new offerings as well as new and better ways of doing what they already do. They want to continue to increase the value they bring to their customers and stakeholders, and they are hyper-aware that in order to remain competitive they likely have to continue to evolve – and to innovate. The old business paradigm of long-term survival is no longer the accepted norm among these firms, and they are seeking to stay ahead – or at least, to not risk being left behind.

> "we are a service provider, so we saw a need to do something different in the face of our competition, we need to differentiate ourselves. So how do we do that? By doing something new … we know that if we don't seek differentiation we will eventually be left behind. So you have a bit of this need to attempt to keep up with the transformation

> of the industry … Of course we need to differentiate ourselves from our competitors, we want to position ourselves in front of our clients as an innovative company and that can bring valuable benefits to [us]."

- Interviewee Company A

> "I see to be innovative … as survival. Our sector is facing a process of deep transformation, which is already happening, and the tendency is that it will be stronger and stronger. … So we need to transform. I think that innovation is part of this process of transformation. So we need to be more involved in this environment of innovation, and that people seek to innovate to be more efficient and take the lead among our competitors, in our industry. In order to increase, above all, meeting the expectations of our clients and stakeholders … So this is the motivation to seek innovation. We are not stopped in time thinking that our industry will not change."

- Interviewee Company B

It seems that firms are aware of their environment, as the industrial organization theories suggest. Companies do not operate in a vacuum and our research clearly shows that they seek to look outside of their own boundaries to have a better understanding of who they compete with, the forces that are impacting their business, and what they can do in order to best position themselves among their peers.

The other side of the long-term firm survival conversation that emerged in the interviews was very relevant to the local Brazilian context. Some of the firms in our study had been directly or indirectly affected in the previous years by both "Operation Carwash"[15] and by a severe economic downturn[16] in the country. In the face of **crisis,** it is clear to firms that their comfortable place within their industry could easily be altered. Our study participants were clear that they saw crisis as a time that firms need to reinvent themselves, make sure they are better, more equipped, and to be prepared to face new scenarios that may very well be deeply unlike the status quo they become accustomed to.

> "when Operation Carwash exploded it was a signal for us that those initiatives that some people had of improving the management and performance of the company, would become our strategy. I think that the fact of not having another option … I think when you are successful it is very hard to make a turnaround, [but] … when you are at the bottom of the well you don't have much of an option … We saw that it was very clear that for the infrastructure industry there was no option other than innovation. … The infrastructure sector in Brazil needed (and still needs) to reinvent itself. I think

[15] Operation Carwash, or Lava Jato in Portuguese, was launched in 2014 when unusual transactions were detected between partially-state-owned oil giant Petrobras and service providers that secured large contracts from them. This operation has reverberated throughout Brazilian business and political spheres and has had a major impact on many firms across the country (Brazil's Corruption Fallout, 2018)

[16] The period of 2014 to early 2017 was the worst recession Brazil has faced, with a contracting economy and increasing number of unemployed, this period had a deep impact on the entire country (Brazil's Recession Worst on Record, 2017).

> this necessity is what led us to focus deeply, our main motivation was having no other option. In our case … it was this or bankruptcy."

- Interviewee Company C

> "from my point of view this wave of not only open innovation, but also of digital transformation, has come with the economic crisis, when the companies need to reinvent themselves, think of new things to differentiate themselves and to keep themselves in the market.

- Interviewee Company D

> "the moment [of crisis] that the company was experiencing ended up benefiting the project because [the strategy] created a positive agenda for the company, which we really needed at that time. [As a result], the communications area of the company helped us a lot in selling this strategy internally and externally"

- Interviewee Company E

Besides these survival-related motivations, companies are also adopting startup engagement strategies as a way to help them meet their overall business goals. This came up more specifically in the conversation with Company A, who had been acquired a couple of years prior by a private equity firm, and had specific objectives to grow the business over the coming years. They saw innovation as one of the tools they could utilize to do so, and therefore were motivated to implement startup engagement activities in order to **meet other strategic objectives.**

This motivation can also apply to other types of strategic objectives, such as having an impact on the culture of the company – something that was brought up several times. It seemed that one of the things that many corporate leaders were seeking through these strategies was to bring some positive changes to their engrained company cultures. Using startup engagement as a catalyst for this type of change makes sense as it gives them an opportunity to not only expose their teams to a new way of doing things, but has them also engaged with this alternative side – actually putting into practice the things they want them to learn and change in the current culture.

> "for us to differentiate ourselves, and even as a strategy of the company, we need to grow. We can grow in various ways … but we understood that innovation was aligned with the strategic objectives of growth… That through the means of innovation we could reach our objectives."

- Interviewee Company A

> "it was very clear to us what we would be getting from this: change in culture, flexibility, knowledge. I'm not talking return on investment. Maybe it will pay for

> itself, we hope it will, but that wasn't the goal. It was very clear to us what value we could gain from this."

- Interviewee Company C

As mentioned by Company C above, yet another motivation to engage with startups was to **gain access knowledge**. This is a key motivator for open innovation strategies, as accessing outside knowledge is at the core of the open innovation paradigm. It complements the basic assumption of open innovation that not all of the smartest people war within the boundaries of the firm, and that companies should look both internally and externally for ideas and knowledge. Companies who are seeking any open innovation strategies at all will generally have this as one of the strongest motivators encouraging the implementation of the strategy.

Knowledge is an essential element of this type of strategy, and in seeking to engage with startups firms are essentially seeking new knowledge (both explicit and tacit). It is clear that the firms in the study value knowledge as an important resource – especially those who have paid close attention to the transfer of knowledge from the startup to the firm through the various ways in which they interact. In addition to this, many of our subjects were also aware of the importance of the transfer of knowledge from the parent corporation to the startups as well – often highlighting things like mentorship programs built into their programs in which their executives and specialists could transfer valuable intangible resources (knowledge) to the participating startups.

Firms that do not take into account the learning processes and knowledge management that comes with these startup engagements risk keeping the benefits they gain from this type of strategy to more superficial level, such as a tool for marketing or appeasing shareholders, rather than a true agent of change and growth.

This outside knowledge that our study participants are tapping into is wide-ranging. It can vary from very technical know-how, to creative ideas, to new business models, and all the way to general market information. These are all valuable in their own ways, and the various mechanisms allow for companies to tap into them through different methods. A company that is engaging with startups in any way tends to get access to market information. By reaching out, offering a program, inviting startups to events, having startup as clients, and looking for opportunities to invest in, companies are consequentially gaining many insights into the market and the startup ecosystem. They may be seeing trends in new technologies, seeing what types of firms may be scaling up and why, how these firms gain market share, what products they offer, what sells and to whom, and many other extremely valuable insights.

> "the other thing about investing in startups is that you always have eyes and ears there. You see everything that is happening … You see which direction things are moving. … You see the movement of the market according to the [startups you are engaging with] … So you see a movement that may be good for you … You may not necessarily be bringing this all inside the company, but you have a sensor of what is coming along, what is the next thing that can shake up the market."
>
> *- Interviewee Company G*

> "The first reason for you to do startup engagement is for you to gain knowledge about the technology … so you can make strategic decision in relation to what you learned with the technology, if this is something you will incorporate or not, if this is something that is useful for your business, if it can be a new business, a new product. But it is much more proactive than reactive."
>
> *- Interviewee Company C*

In getting back to the literature, we see a clear link here to the resource-based view, wherein firms need to have resources and the capability to use and deploy those as well as the flexibility to adapt them to an ever-changing world. Knowledge is a key resource for firms, and these open innovation strategies are often motivated by the seeking of this resource. Of course seeking other capabilities through this type of activity is also extremely relevant. As we will see below, companies are extremely motivated to implement startup engagement strategies is being able to tap into **more flexible and lean teams**.

Beyond accepting that there may be useful knowledge outside of the boundaries of the company, firms are also recognizing that traditional models of R&D are costly and time-consuming. In this fast-moving business environment within which they operate today it is unrealistic to expect that they would remain competitive if every idea they may want to test out would be done in house. It is not that firms who seek open innovation are discarding their internal R&D efforts. Not at all. It is clear that they see a value in both. Of course they have more complex things that need to be developed in-house, but all the while they are recognizing that open innovation can bring a lot of flexibility and speed to this process and can attend to some key needs in R&D that don't necessarily need to take place in the traditional structure.

> "Our big motivation is [gaining] agility and knowledge. Many of the technologies that are utilized we have no knowledge of, some we have some awareness, [and even if] we have a team, this team is already overworked and so the speed to develop these things would be much slower."
>
> *- Interviewee Company D*

> "these teams are leaner and so they can deliver things quickly, and for cheaper. [Cost] is not the principal objective but it does end up being cheaper than we would be able to do in-house."

- Interviewee Company D

> "I have a problem here, we aren't able to do something, it's going to be expensive, so let's look externally. There's that company out there who is doing something similar – should we try it? Let's do a pilot? Let's bring it in-house and test it out? … Open innovation is cheaper because everything you do inside a large company [goes through a long process] … the startup throws the idea into the market, gets feedback, changes as needed. … It's not that we don't need to have internal R&D as well – we do, we need to have both sides. This is why I think the companies that look to both sides tend to be more successful."

- Interviewee Company G

Finally, in the context of innovation, the firms in the study are motivated to innovate for various reasons. However, whatever their overarching motivation may be it is clear that they accept that the sources for innovation and new knowledge may not always be within their own boundaries and that it is important that they also look to external sources of knowledge and ideas that can bring value to their operation. The acceptance that the best solution to their challenges may not necessarily sprout from the traditional R&D structures they have is in line with the basis of the open innovation paradigm. The firms in the study embrace this paradigm and do so enthusiastically with the understanding that it is an effective strategy that can deeply benefit them, and help them to continuously renew, survive, and thrive in the face of competition.

The topic of **financial gain** as a motivator came up in both of the conversations with telecoms – who are also the two companies in the study who utilize the CVC mechanism of startup engagement. Although it is not possible to generalize from this limited study, it may be a characteristic linked to this industry, as opposed to others in the study, due to the fact that they work with more mass-market technologies that have a shorter shelf life than the products that our other participants work with. While the use of CVC and focus on financial gain of both of these companies is discussed in more detail in section 4.2.2 ("Corporate Venture Capital"), it is worth highlighting here that among the participants in this study, there is a correlation between the financial gain being a motivator and the use CVC mechanisms of startup engagement.

Interestingly, **legislation that benefits** companies that implement innovation activities were not seen as a primary motivator for any of the study participants. Research findings show that this is not a major motivator for the implementation of these strategies, however it is seen

as a “bonus” befit from pursuing these activities. This is interesting, as although some firms may have a motivation that is linked to financial gain, the returns from seeking out these potential benefits endowed by legislation is likely too low to make it an attractive motivator for companies in their decision-making. These benefits likely would not cover the costs of the programs entirely, and therefore are seen as bonus if they do indeed come to fruition at some point. A noteworthy insight that was in line with this came from Company C, that saw it as a potential way to help pay for the costs of their corporate accelerator. However, since they did not have these benefits as a motivation for implementing the strategy, it is not something they have sought to materialize yet.

> “the matter of us getting fiscal incentives for R&D partnerships … was a bonus.”
>
> *- Interviewee Company A*

> “We haven’t had time yet. We have a plan that in the future we will look at what can have incentives from the government to help us with the [accelerator], … we’re trying to understand the criteria to see if there is any type of benefit that we can get. But since we’re so focused on the strategy [right now], we really haven’t done this to have the fiscal benefits. So we’ll see – whatever comes will be a reward.”
>
> *- Interviewee Company C*

4.2.2 Difficulties and barriers in startup engagement

Like any implementation of major changes within a company, the activation of new corporate innovation strategies can be expected to encounter several obstacles. Our research subjects had quite varied feedback on what difficulties and barriers they have encountered. A lot of the discussion centered around the **ingrained traditional culture** within the company and having to bring people to appreciate something new and unknown to them. In that same vein, getting other employees to embrace innovation rather than to resist it was a theme discussed by many of the study participants as a major difficulty in implementing these types of strategies. In some of the interviews, this trailed into a zone of employees potentially feeling insecure due to having something new and unknown implemented, as it gave them a certain level of uncertainty in regard to their traditional roles and some employees maybe saw their value diminish in the face of these changes.

> “you have that natural resistance from people that were already there. So there was a lot of resistance. I would approach people [and say] ‘we’re thinking of doing this…’, [and would get replies such as] ‘no, that doesn’t work, I’ve tried’. It was very difficult in the beginning”

- Interviewee Company A

> “of course we had to work on awareness within the company for the executives to understand [what we were doing]. In order to get the project approved we did more than fifty presentations internally. We had a lot of one-on-one conversations, to explain what it was… I think some people maybe [were closed off], but I think that it was more a matter of a lack of awareness and of uncertainty of now knowing what this was, what is would mean for the firm”

- Interviewee Company F

> “I think the uncertainty for some people was a barrier to overcome … I think this problem is linked to culture, when you don’t have a culture of innovation inside the company I think that everything is more difficult. So I think that the resistance is linked to these two things – resistance for lack of information and lack of innovative culture inside the company.”

- Interviewee Company F

> “Resistance to change … it being something very new, the lack of understanding of the subjects … inside the company there was a lot of resistance. I remember that in the original project for our accelerator we had included a pool table and it became a major issue because people didn’t want to accept having a pool table inside the office – we were in the middle of a crisis. I took out the pool table, I wasn’t going to fight because of that.”

- Interviewee Company C

> “I think [people feel] insecure, like ‘will I be relevant in this new context?’… they may be afraid of no longer having a role, that what they did before, the knowledge creation they did, was no longer relevant as the company was now looking elsewhere for that. …. [people feel] insecure because the company is going through a very difficult moment and fear that they may lose their job due to the firm investing in this new thing.”

- Interviewee Company C

Along the same line as getting employees to move towards a more innovative mindset and to not fear this new approach, moving the firm itself towards an **innovative company culture** was also cited as a difficulty. Part of this can be linked to the fact that large companies move at a different pace of startups and do things in an inherently different manner. When you are faced with integrating a new way of doing things into your traditional structure it can be a challenge. Adding things like flexibility to a deep-rooted traditional corporate culture is a major challenge. In addition to this, large companies also tend to have a very short-term vision in terms of results – we’re not here to discuss if this is necessarily bad overall, it is just the reality they operate in as a mature business. Innovation processes and especially startups, on the other hand, have a longer timeline for results to materialize, and this can be a major point of incongruence between the two sides.

Yet another issue linked to this theme is that large corporations are often structured in silos, and different areas of the company may not necessarily be in the habit of working across those departmental boundaries. With the need to change at least some elements of the culture of the company – especially in having to be more flexible than usual with things like requirements for vendors and contracts – the firms who engage with startups often have some barriers in getting several departments to agree on working together in finding a more flexible way to do things. A good example of this was highlighted by Company D, which operates in a very regulated environment. Since the startups that Company D engages with may need to access a restricted factory area, they have had to align several departments to allow that to happen in a more flexible manner as opposed to a traditional vendor. This may include, working across the procurement, legal, and compliance departments to ensure that a startup with less insurance and less proven experience in the market can access those restricted areas with less requirements than usual.

> "Today we have [a few] big challenges which are the culture, creating a culture of innovation, and improving the management of innovation inside of this new organization … Here in Brazil we for sure don't have yet a culture of innovation, and we are starting to create this. So it's not from day to night that things will happen. … People forget that that we have to do this initial work of creating a culture and to adjust our structure so that we may really promote innovation."
>
> \- *Interviewee* Company B

> "What do I see as major difficulties? Breaking the internal barriers, because we spend a lot of energy trying to overcome these internal barriers, bureaucracy, and resistance. … What has been a barrier for us is the matter of the organization of [the startups] inside the company. When the startup needs to run a test on the field … its complicated because at the same time that you need to be flexible for them because they don't have a robust structure [like our other vendors], there are big occupational risks there. … So how do we cover ourselves …. while at the same time providing flexibility to [the startups] so they don't have to present the same amount of paperwork that we would require from a traditional vendor? So that is a barrier that we are still dealing with very cautiously."
>
> *- Interviewee Company D*

> "I think there are natural barriers of a large corporation. I see the main point being that today's corporations are guided very much by short-term results. … [and the] results expected by our team versus the results expected by the firm are not the same, so I think a major challenge is us being able to bring results that are relevant to the firm, knowing that those results may take a while, but they could happen. … And since the company may not want to wait the necessary amount of time, that can be a big challenge."
>
> *- Interviewee Company E*

> "there is the startup ecosystem itself which we saw as exciting and with lots of new things emerging, and we realized that we weren't equipped to deal with that because the process of contracting new vendors at our company is very rigid … so we had this dilemma of how to take advantage of these new technologies, and new teams that were emerging. Which are very agile, and bring a lot of new technology, things that could actually add value to us as a company, [but we had] a very rigid contracting process."
>
> *- Interviewee Company E*

> "We've had to bring together a team which included human resources, the legal department, communications, R&D… client services, automation, IT, all so we could be able to define and run our program."
>
> *- Interviewee Company D*

> "we created a specific process for [the startups]. We brought together the legal department, compliance, procurement, and created a big team and said: 'this is the current process of purchase for [the company], we are creating a new program and this current process is unviable and we need to create a specific process [for this]."
>
> *- Interviewee Company F*

> "As much as we were able to simplify [the processes], we still needed to do a lot to make it easier. … [What is required] is that all of the different areas [of the company] need to understand. You get everyone together [and say], 'Ok, let's do it like this, let's get the legal department, procurement, digital strategy, and let's try to create a model that will make it better for everyone, a better approval process'. So everyone understood."
>
> *- Interviewee Company G*

Another relevant theme that emerged from the conversations around difficulty and barriers when implementing these startup engagement strategies is the fact that having **employees break out of day-to-day activities is difficult**. People are entrenched in their regular roles and adding new activities where they may need to expand that role, yet still be held to the same expectations of fulfilling their normal activities, can be unrealistic and can be a barrier to the success of the strategy. The firms who are pursuing startup engagement strategies want this to be a cohesive strategy – not something that happens in a silo completely outside of everything else. They want to be able to tap into the capabilities they already have and leverage that in making the partnerships with the startups as beneficial as possible. Many times this means having executives become mentors, or having various departments give ad-hoc support as needed. The most likely scenario, however, is that the company's employees and executives will always be motivated to prioritize their primary roles before shifting time and attention to these new activities.

> "We want to work in partnership [with the startups], we want to support them, but when it comes down to it, you need to move away [from your tasks] for a bit to be able to give that support. Sometimes the day-to-day operational matters end up getting in the way of that, so this is still a difficulty in my eyes"
>
> *- Interviewee Company B*

> "The company as whole sees [the accelerator] positively. … Everyone sees it as a positive, thinks it's a good initiative, thinks that it is indeed something we should be doing, that this is important for the firm. But sometimes when you need help from a certain area or department, they are so busy with their day-to-day that they aren't able to give adequate attention to a certain project, which would really help in strengthening the fit between the startups and the firm. So there's some difficulty there in maintaining the engagement from the side of the firm."
>
> *- Interviewee Company E*

An additional difficulty that arose from some of the study participants was the struggle in **being attractive to the startups as a potential partner**. Although this did not come up in the majority of interviews, it does have merit and deserves some discussion. The firms that discussed this theme were aware that if they can't attract great startups to work with them, they are not extracting the full potential benefits that this strategy could bring. Company E makes an interesting observation that one way they seek to become more attractive to startups is by brining on other strong corporate partners, rather than just operating within this program by themselves. They describe a virtuous cycle, where an offering that includes multiple large firms as partners is likely to attract more startups, likely increasing the level of quality overall, and therefore bringing them better results as well.

> "the big challenge really is how to attract these startups. We need to be attractive for these startups that are already in a bit more mature stage of acceleration. I think this is a partnership. It needs to be. … [so we must] be attractive for them as well."
>
> *- Interviewee Company B*

> "We want to be able to bring other companies to participate in [our program] in a relevant way, because we see how this … is helpful. It will become not only a magnet [for more startups], but we will also be able to offer a better program overall. We would like to offer these other resources from other firms as beneficial leverage to the startups just like we offer our own resources. This is a virtuous cycle because the more startups that are here, the more results they may bring because they will be able to use many more resources. And, as that occurs on one side, more companies are likely to join us and add to this virtuous cycle."
>
> *- Interviewee Company E*

Company C brings an interesting insight on how they sought to overcome this issue. They wanted to approach the startups they would be dealing with as a client – they understood

that it was important to be a valuable asset to them, just as they would be to the firm, as the startups are ultimately helping them bring value to their end-clients. With this in mind it was essential that they understand what those startups value in a relationship with a corporation. What frustrations they may have had in a similar situation, what they look for in these types of partnerships, what can make them not want to work with a large company, etc. When Company C was designing their accelerator program, they specifically reached out to entrepreneurs who had a startups within the industry they operate in (construction) for these types of insights and took them seriously into consideration when planning out their startup engagement activities. They found that this brought good results for them – when monitoring the satisfaction of the participants throughout their time in the program the results were very positive.

> "We need to understand that with startup engagement the corporation is like a platform that connects the startups to the final client … So the better-quality solutions we are able to offer, the more clients I will have, and the more clients I have the more I can add value to the startups by helping them scale up. … [So in reality], I have clients on both sides, just like any platform, I don't have to just make my traditional clients happy, I have to also make my startup client happy as well since he is helping me bring value to my customers."
>
> *- Interviewee Company C*

> "[In regard to] the startups, I asked: 'what can he gain from us?'. … We went and asked the startup founders in the construction industry why they would come work with us. To my surprise, first: they feel that corporations never ask them anything, only dictate rules and regulations, and squeeze them, and bring them into a company that zero innovative culture. They feel oppressed in there. [The companies tend to] squeeze them as is they were a vendor and try to get things out of them … [Also, companies] would have 9, 10, 15 meetings and then never open any doors for these guys. So they were unmotivated. … Another thing they said was that in the heavy construction sector, they may have access to investment, but only once they have an MVP, a validated product or model, etc.…"
>
> *- Interviewee Company C*

> "you have to understand the challenges [the startups] have, what they are doing, and you have to translate that to your own challenges. …. We tried to create something different. We tried to give them what they were saying was valuable to them
>
> *- Interviewee Company C*

Lastly, some of the study participants discussed the fact that there are of course some risks that come along with working with startups. They have uncertainties at every corner and may not be able to necessarily deliver on what they promise. One of the common characteristics of startups is that they may pivot their business or their focus quickly. This can be a major

advantage as they don't lose time with an approach that is not working, but it also means that a large company that interacts with them takes on some risk that the original pitched idea when put into practice may not be viable after all. On a similar note, Company C shared a valuable insight about the risk of putting the initiative into practice and not being able to actually capture the value from these initiatives. They identified this risk of finding great ideas and innovations, but not actually having the discipline and capabilities in place to actually extract value from it.

Companies also accept that they have a risk associated to the financial investment they dedicate to startup engagement activities. If this strategy does not ultimately bring positive results to the firm, they may have dedicated funds to something that was not worth it. Interestingly, this is directly linked to the objectives of each firm when deciding to pursue startup engagement strategies – maybe a certain accelerator program may not result in a new breakthrough product or the improvement of a process, but if one of the objectives was to impact an entrenched company culture and that did indeed happen then the investment was worthy. On the other hand, company E, for example, makes a good point that for firms of a certain size, this type of investment is quite small when compared to the firm's operation as whole, and therefore may not be so significant if it doesn't bring expected results.

> "There is an inherent risk in innovating with startups. The startup may not deliver what was promised and this is a risk we have accepted."
>
> *- Interviewee Company D*

> "There's the risk that this is the first time we're doing this… we also have the financial risk. There's also the risk of getting [to the end] and … it not being the way we envisioned. We are aware of that, we know that innovation is part of a 'culture of failure' … We are aware of that and all of this was taken into consideration when we decided to do this strategy."
>
> *- Interviewee Company A*

> "I think the risk is that its brings no results. You're not sure if it will deliver results, you never will because this is something new, so this is a risk that you need to be willing to take."
>
> *- Interviewee Company C*

> "There is also a big risk in the implementation itself because there are ideas that are brilliant but to implement are a lot of work. It's in the actual capture of these innovations that is the biggest challenge (not in the idea itself). So being sure that the good ideas that come along are able to become actual value is a risk. You need a lot of discipline, need to steer it, it's not just finding the idea, its taking it all the way to the end [to capture value]."
>
> *- Interviewee Company C*

> "there is the risk of the company not being engaged [in the strategy]. The principal benefit we want out of this is a change in culture, and if it may not happen…"
>
> *- Interviewee Company C*

> "Risks – sincerely, given the size of our company there isn't much risk, there really isn't. The risk would be to lose the investment that we are putting in here, but in comparison to the size of the company what we are investing is very little."
>
> *- Interviewee Company E*

4.2.3 Advantages of engaging with startups

The **flexibility, agility, and speed of startups** was a major draw for firms utilizing startup engagement. Startups have a leaner and more informal organizational structure in comparison to the companies that are engaging with them. This means that they can make decisions quicker, test out ideas faster, and change was is needed in order to improve a solution much quicker than a large corporation can. Ultimately, this ends up bringing a big **advantage on the cost side** – all of a sudden, these large companies can test out innovative ideas at a much lower cost than they could before through their traditional R&D structure. The insights from Company C, below, gives two interesting analogies about this advantage.

They explain that they see the large corporation like a big freighter ship – when this ship needs to move it takes a lot of work to shift direction, and there is a lot of risk in making critical changes. What if the ship changes direction and all of a sudden sinks? In their eyes, having startups that can test out solutions for them is like having a fleet of small, agile boats in front of the large ships. These smaller boats can quickly change directions, test out new ways of doing things, and potential new directions for the business and inform the large ship in which ways it may be good for them to consider moving. Going on to explain that, this is a great way to test things out without having to put your name on a project that could potentially be unviable, and also avoiding potential confusion from clients who may wonder if you are changing your business due to testing out various new things. All in all, this is a way for the company to lower its own risk as well.

Secondly, Company C also gives us insight on utilizing traditional R&D versus startup engagement to seek an innovation that can bring a lot of value to their operation. They do so by using an analogy of an autonomous truck. In their view, this is something that can add tremendous value to their business. If they seek to develop an autonomous truck through a traditional R&D they would spend millions of dollars, making it a very expensive and risky endeavor. On the other side of this spectrum, they could way for someone to bring an autonomous truck to market, which they could then purchase and utilize – but this wouldn't

bring them any competitive advantage over their competitors as everyone could be doing exactly the same at the same cost. What do they see as advantageous then? Working with startups to land somewhere in the middle of this spectrum. They can seek innovations through a less costly approach, while making sure that they can gain some competitive advantage over their industry competitors from doing so.

> "I think it makes a lot of sense … because they are companies that have a leaner structure, there is a level of informality that permits for quicker decision-making. Since they are lean companies, even the cost of you doing partnerships with them is lower."
>
> *- Interviewee Company A*

> "What's the advantage of having startups working with us? There is an analogy that my CEO always uses. He says that turning around a large container ship is very difficult, if you turn it the wrong way it could sink. So these startups are like a bunch of little small boats that you can put in the water and they can go testing out the various directions with a lot more flexibility and less risk … It's a way for you to experiment the market without you needing to attach your brand to it … without running the risk of your clients thinking you have changed your business. So if you want to study a new, different business but you don't want to put your company name on that, you can still experiment. If it turns out to be a 'golden ticket' business then you move forward with it. So it's also a way for the company to dilute its risk."
>
> *- Interviewee Company C*

> "I like to use the autonomous truck example, which is something that could impact the operations in our industry … it could give us a significant gain in productivity. So if we take a spectrum of what a company can do with regard to this innovation, there is an extreme where I have a robust R&D which I can use to develop autonomous trucks. So I would spend billions of dollars and I would make a lower quality truck than Elon Musk would. I can also get to the other extreme end of the spectrum and wait for Elon Musk to launch [his autonomous truck on the market] and I can purchase it. On one side it's too expensive and risky, on the other hand I gain zero competitive advantage because I am buying at the same price as any of my competitors. So how can I get in on the middle of the spectrum and not have the risk of having to invest billions while also not just finding out about [the innovation] when it is available in the market? That's where startup engagement comes in. … I have to find the guy that is going to develop a very relevant innovation and find a way to work with him before he gets to that point [of being in the market available to all]."
>
> *- Interviewee Company C*

Very much in line with this is the insight from Company E, who explains that engaging with startups brings a big advantage of allowing the company the ability to **explore opportunities that they wouldn't be able to normally** within the regular structure of the company, as well as access to more specialized knowledge that the company may not otherwise have internally.

> "The big advantage is that we can explore opportunities that we otherwise wouldn't have a chance to do internally [for various reasons]. Lack of knowledge of the market, lack of knowledge of the opportunity itself, not having the speed of development necessary, and not having the priority necessary to develop it. So in practice, all of this has to do with speed and having the knowledge of opportunities in a specific market, which is the case of many of the startups here. The founders are people that came from that market and they know very well the needs that need to be met, the pains to be attended to, they have the necessary relationships to make some of these connections, to get to interesting solutions … if we did it on our own we may not necessarily be able to develop these things with the same speed and ease, so I think this is the main advantage."

- Interviewee Company E

Another advantage that were mentioned was linked to the difficulty of dedicating people to innovation and therefore having to pull them away from their day-to-day tasks. It is clear that some of our study participants valued the fact that **a startup who is developing a potential solution for them is fully focused on that**, unlike their employees who most likely still have to prioritize their primary functions within the company.

> "They are people who are 100% dedicated to this, they aren't doing other things, looking at HR, looking at procurement. They are focused in finding solutions. I believe this is [a major advantage] of working with startups."

- Interviewee Company A

> "I think that having access to ideas that are from outside of the operational environment of the company, you're not worried with the day-to-day, you have a person that is dedicated to developing the thing you want, that isn't involved in the day-to-day. If you needed to develop it internally you would need to have a team focused on it, which we don't have. So for me this is the main advantage. You have this external vision, outsiders, people that are not in the day-to-day operational activities and that can generate results for the company. This lets you think more out of the box…"

- Interviewee Company B

Yet another advantage that lined up with one of the difficulties was the element of **culture**. Study participants saw that engaging with startups was a way to "oxygenate" their own entrenched corporate cultures. This engagement helped their employees adapt some innovative culture by osmosis, taking on certain elements into their day-to-day such as innovative thinking, flexibility, and agility. Interestingly, Company F even pointed out that this even helps in overall employee and executive engagement in their regular roles. Seeing and understanding the value of innovation, their executives are more engaged in getting their primary functions fulfilled in order to guarantee enough time and bandwidth to be involved in

the startup engagement side of things as well. On a similar vein, Company A had an anecdote of an important executive at the company whose change in culture and approach even surprised him – one of those traditional corporate guys was all of a sudden coming to him with flexible and innovative ideas on how to approach things.

> "There are cultural advantages where you end up impacting a bit the people internally, you can bring more flexibility, you can transform your internal processes into more agile ones, you can make people think differently. People start to think about how a startup may be able to help them in their day-to-day, this happens a lot."
>
> *- Interviewee Company D*

> "the change of culture that we've had inside [the company], the oxygenation [of the culture], the form with which the company today thinks about innovation is different because we have been in contact with these startups. [The executives] provide mentoring to the startups in the morning and then go back to their regular roles… it's impossible for that to not have an impact on him. He looks at his team and says: 'we need to change the way we do things, we have to be more agile. Look at how those guys are doing it over there…' … I think this change of culture, this oxygenation, makes the executives be more engaged in their own work."
>
> *- Interviewee Company F*

> "there isn't a consultancy or vendor that we could hire that could cause the impact of the change in culture that this created inside [the company] like [this strategy] did in one year. It was really important for the company to experience this."
>
> *- Interviewee Company F*

> "[this strategy] brings a variety of benefits to the company that are linked to an oxygenation of the culture itself"
>
> *- Interviewee Company E*

The advantages of creating a cultural change within the company are very relevant to the dynamic capabilities school of thought. In our rapidly changing world, where customers are more empowered than ever, technology lifecycles are ever shortening, and competition can come from any direction, firms need to become more flexible and adaptable. They need to understand not only what their resources are, but also ensure that their managerial and organizational resources are prepared to adapt, change, and reconfigure in accordance with the changes they need to make to remain competitive.

In utilizing startup engagement strategies, these firms are seeking to absorb some of the more attractive elements of startups such as their flexibility and agility in changing and adapting in order to find the best solutions to their challenges. This newfound flexibility and agile approach better prepares their managers and leaders to be able to identify important shifts

in the market or new opportunities for the business to develop, and to be able to reconfigure their resources and capabilities accordingly.

Brand-building was yet another advantage that came up in the study. Some of the study participants discussed understanding that this type of strategy does have a positive impact on their brand overall. Although this may not always be the biggest advantage seen by the companies, it is definitely recognized as potential benefit from implementing startup engagement strategies.

> "There is the advantage for the brand, that ends up being strengthened as well … there is a side of brand building by having the image of being an innovative company"
>
> *- Interviewee Company D*

> "In the worst scenario we would lose 1 million BRL, and it's not the worst scenario because I spoke to our head of marketing … who let us know that in the past we would pay to be in publications, we would easily spend what we have spent on our accelerator to be in 50 articles. … this year alone we haven't spent anything and have been mentioned in over 80 articles"
>
> *- Interviewee Company C*

> "it also turned into a brand builder for the company … it has helped a lot because [we] have been living through a very rough period. … Especially when the accelerator was launched, we were going through a rough period, and so the accelerator itself helped generate a positive agenda for the company as well."
>
> *- Interviewee Company E*

A valuable insight from analyzing the advantages that firms perceive, is that it becomes clear that they are in a lot of ways linked directly to many of the difficulties they mentioned as well. A company who maybe lacks innovation because it does not have the necessary resources (financial, personnel, knowledge, etc.), finds a big advantage in implementing strategies of startup engagement as it can allow them to tap into resources that will add value to their business at a much lower cost, in a more flexible manner, and resources that they may not otherwise have had at their disposal.

Links Between Difficulties Encountered and Perceived Advantages of Startup Engagement

Difficulty	→	Advantage
Inability to pull employees from day-to-day activities	→	Startups can be fully focused on developing the solution needed

Rigid company culture keeps people from exploring potential new solutions	→	Oxygenation of the company culture by exposing employees to a culture of innovation
Inherently slow and bureaucratic processes at large firms make internal innovation an expensive and lengthy process	→	Startups are flexible, agile, and speedy.
Company may be seen as too traditional, "old school", or lacking in innovation	→	Engaging with startups can aid in brand-building, helping the optics of the company among its competitors and clients
It may be difficult for large firms to explore many opportunities, new businesses, and new technology due to cost, time, strategic planning, capabilities, etc.	→	Doing so through partnerships with startups can allow them to more easily explore these interests while keeping costs and time to a minimum

Table 4 - Links between difficulties and advantages of startup engagement

4.2.4 Practical aspects

Use of third-party service providers in structuring startup engagement activities

It became clear fairly early in the research process that a lot of the companies pursuing startup engagement activities were relying heavily on third-party services. In fact, six of the seven participants actively used third-party services in at least one step of planning or implementing their strategies. The sole holdout of the seven did also tap into partnerships when expanding their startup engagement activities after the first few years. Although they did not hire consultations or outsource in this case, they did utilize partnerships such as signing on as a partner with a governmental organization offering a program for startups.

Third-party services have an important place in the strategy, as startup engagement often requires know-how that incumbents may not already have in-house. This very much mirrors one of the reasons why they seek out startup engagement – access to knowledge – so it makes a lot of sense for a firm who is looking to implement open innovation strategies to look outside of their own walls for the best solutions and the knowledge they need. Hiring third-party services, as with hiring any sort of outside consultancy, is often a way to tap into needed know-how while keeping overhead low in comparison to building out a full team in-house, which also correlates well to some of the reasons why they seek out startup engagement in general.

> "We noticed that if it was from inside out, meaning using the resources [that we have] we could get to where we wanted to go, but it would take us a lot longer. So from there we decided to seek out a consultancy."
>
> *- Interviewee Company A*

> "So [the third-party service provider] comes in to curate. They are developing the solutions we need. They are acting as the bridge between us, who are looking for solutions, and startups that may have a relevant solution. They make this connection."
>
> *- Interviewee Company A*

> "We have two external partners: one to help manage and one to help with capability development and training. … We've never done this so we don't need to be so daring [on our own]."
>
> *- Interviewee Company C*

What is clear is that there are advantages and disadvantages that come along with hiring third-party services, and, just like everything else that companies must consider, this element also must align with the company's objectives as related to their strategy. Some advantages of utilizing third-party services are that it is a lower-cost and more efficient way to access specialized knowledge relating to startup engagement (versus than building these capabilities in-house). Third-party services utilized by our study participants also often acted as some type of middle-man, filter, or liaison between the company and the startups. This brings along the advantage of having a much broader reach than the company would have if they sought out the startups strictly on their own. This broader reach can often mean that more qualified startups become aware of the opportunities for engagement, therefore increasing the likelihood of success.

On the other hand, outsourcing to third-party service providers can also have some disadvantages. By contracting out various parts of the startup engagement strategy, firms give up control of these activities and by doing so can also miss out on valuable opportunities for knowledge-transfer, increasing the capabilities and engagement of their in-house teams, and having the desired deep cultural transformation they may have been seeking.

> "We have seen that when we organize things ourselves, we have much more flexibility. The internal engagement is also much better, and we are able to resolve issues a lot quicker. When it is organized by an external third-party normally they have a methodology that is ready to go that they apply to a reality that [it maybe isn't exactly a good fit for], there is some culture shock there, and it can get a bit in the way of developing the project."
>
> *- Interviewee Company D*

High-level Sponsor

It seems to be very important to have a top-level champion who supports the innovation initiatives. These activities are often longer-term in bringing returns than what companies traditionally expect and are used to and can create major tension when different departments within the same company have differing expectations and metrics of success. Having a high-level executive, or group of executives, championing the importance of this type of activity can be a game changer in increasing the chances of maintaining this type of strategy long-term is key to it being successful within the overall corporate strategy. These key high-level sponsors that buy into the strategy and defend it in the face of resistance within the company, also tend to be the ones who push for an overall change to the traditional and engrained company culture in order for the firm to fully realize potential benefits from these strategies.

The topic of having a high-level sponsor of the startup engagement initiatives came up often in the interviews. Interviewees at companies that had a strong sponsor tended to highlight the influence and importance of these individuals throughout their interviews. The findings suggest that having a high-level sponsor is very important when it comes to having the firm commit to this strategy, as well as for it to be seen as a positive and important activity within the firm. It is also critical in order for necessary resources to be allocated to the initiatives. In addition to this commitment on the side of the firm, it was also an influence on the organization's employees, by incentivizing buy-in and helping to lessen deterrent behavior.

> "the main sponsor here is our CEO. This is quite important and needs to be from top down. … I believe that if there isn't a sponsor at the level of the [CEO] … he is not going to mobilize the firm. It needs to be the top of the company in order to make the engines turn."
>
> *- Interviewee Company A*

> "[The CEO] … understood that we were people who wanted to study, to change things, and he encouraged us. He participated, he studied the subjects, he went to Silicon Valley, and all of this helped us have the support in here. If it was just us it wouldn't have ended up happening. So, if there isn't a very strong sponsor that takes on responsibility and decision-making in the difficult moments, the project won't happen."
>
> *- Interviewee Company C*

> "The first major win we had on this project was the OK from the CEO. … his agreeing to this initiative allowed us to move ahead and implement it. … the support of the CEO way back in the beginning helped us secure minimum resources from corporate in order to do the project"
>
> *- Interviewee Company D*

> "we had a few key points of contact in the company, some people who when we told them what we were doing said: 'That is great what you are doing, I will support you, I will talk to my team …' and these were vice-presidents and directors. There were two in particular that gave us a lot of support in the beginning and this gave us a boost."

- Interviewee Company F

> "having sponsors is essential because if you don't you will have a lot of difficulty in traversing through the company. It really is a top-down [approach]. … we had a few different VPs that looked at this initiative and said that it was essential and so we were able to have positive engagement."

- Interviewee Company G

An interesting insight that is the opposite of this did also come up. One of our participants pointed out that although having the CEO on board was a big help, it did also have another side with an unexpected consequence: it created some jealousy among certain employees. In addition to this, they also highlight their view that having the support of middle management is also key.

> "on one hand it is good, on the other it is bad. While having the support of the CEO helps us a lot in making things happen, it can also generate a lot of jealousy. … people get jealous of him giving these topics so much attention, of him liking this so much, of him giving us so much leeway to do things … this can hurt … some people may end up purposefully getting in the way. [In addition to this], it is no use having the CEO on our side if he can't convince his directors, because in practice middle management is what really makes the company run … so he needs to be able to win over the others as well"

- Interviewee Company C

Degrees of formality (contracts)

Four out of our five categories of startup engagement mechanisms had some element of formality to it. In a lot of instances, it was likely that there was an actual contract signed between the startup and the company. In discussing this side of things, one thing that was glaringly clear was that all of the firms thought carefully about this element of their startup engagement activities – and that they each approached this in a way that aligned best with their needs and objectives.

While some of the study participants wanted to have a very low level of contractual formality between them and the startups they were engaging with, others used it as an opportunity to reinforce the link between the two sides in a more conventional manner.

> "We try to make it as simple as possible for them. What we do before the immersion is to sign a term of confidentiality that covers privacy for us to talk about our process,

our challenges. After the immersion, when the startups are selected, we sign a contract with them. We have fought a lot to have good sense in the contract. I don't want to include things in there that the company doesn't necessarily need. … It has been pretty simple up to this point. We try to be as flexible as possible more and more."

- Interviewee Company D

"[IP] was another thing that we were able to leave off [of the contract] … What we do require is that if the startup arrived here with a solution that was already developed, and then they adapted any part of it within our program – that piece that they developed in here I will have the right to use. If they develop a new software while in the program, then I will have the right to use that software, but what they already had before is fully theirs."

- Interviewee Company D

"No equity. We have a contract that is the simplest contract we could make. What did it say? It explained the program, let the participant know that if they were infringing in anyone's patents it is their responsibility, that any information that they passed along to us would not be shared publicly, and that everything that they developed while in our program was theirs – we would not own anything that was developed by the startup and their team. … The form we had them fill out was very simple, they didn't need to include any additional documents."

- Interviewee Company F

"We are still a program where the startups don't need to have exclusivity. So if a startup is here they are not forced to do business [only with our company]. They can do business with any company in the market, including our competitors. … Of course we will always try to get them to do business with us. [But it is not forced], we try and of course we work for this because we are measured by the levels of innovation we are able to bring into the company as a whole."

- Interviewee Company G

One of this issues that came up specifically for one of the companies is that they chose to include a clause stating that they had the option to exercise an equity investment of R$150,000 BRL for a 10% stake in each of the startups. This was a blanket statement on all of their contracts. It seems to be the type of clause that is put in place to protect first and foremost the interest of the company. I believe the rationale behind this is that if they are making the investment and helping these startups, they want to have at least one potential upside guaranteed by choosing to exercise this option if they decide it is a worthy investment.

There are several issues that come with this, particularly stemming from the fact that this stipulation means they are setting a blanket valuation for any startup that participates in their program. This brings along two disadvantages. On the side of the company, it means that they may potentially be paying too much for a stake in a company that may be actually worth less than that. On the side of the startups it might severely deter highly-qualified startups from

applying to their program as they can view this as being under-valued by the company and that it may not be worth it to be compelled to sell a 10% stake at that rate.

> "I think being more or less formal wasn't the issue. The biggest issue we saw [on this version] was the valuation of the companies. When you say R$150,000 BRL for 10%, many of the startups that we found interesting that are worth more than that wouldn't come [to our program]. So this is something we are deciding how to handle for the next batch."
>
> *- Interviewee Company E*

It is worth adding here that in our interview Company E also made it clear that their vision was that the full investment they were making into the startups wasn't the R$150,000 BRL, it was much more because they would be giving them a lot of other things like access to potential clients, know-how, workspace, etc. Although they did feel that they made this very clear to the startups that considered joining the program, they did accept in the end that what had a bigger impact was the number on paper – which may have led them to lose out on some potentially highly-qualified program participants.

This is an important point for companies to take into consideration when planning out their programs. It is not out of the norm to have contracts between the company and the startups. However, when those contracts include very strong clauses this can trigger a red flag for the startup and can make them analyze the relationship with a different approach than may be advantageous to the company. It could have been advantageous for Company E to make this clause less favorable to them on paper, but at the same time have brought better quality participants to their program overall. Of course these types of things depend on the objectives of each company in implementing startup engagement strategies. There is no right answer or better way to structure a contract. What Company E has done, however – and is key to continuing the success of their program – is recognizing that this may have hindered them in some ways and being open to changing this in the future.

A strong parallel to this question of how to structure these contracts is that often the teams who are leading these startup engagement initiatives face a real **struggle with the legal department**. It is often difficult to get them to allow for flexibilities when their job is so focused on minimizing liabilities and increasing gains through legal assurances. This is something that came up in almost all of the interviews, and it became glaringly clear that this push-pull between the two sides is something that companies need to be aware of, and ready to tackle.

> "That wasn't what the legal department wanted. …[they] wanted to ask for [the startup's full documentation], understand who the partners were, ask them for their personal information like RG, CPF, etc. We said we wouldn't do that because we would not have a very formal link to that company. I am supporting them with know-how, I am not putting money into their business, there is no reason for me to ask for all that. So eventually we were able to win that battle as incredible as it sounds."
>
> *- Interviewee Company F*

> "What do I see as major difficulties? Breaking the internal barriers, because we spend a lot of energy trying to overcome these internal barriers, bureaucracy, and resistance. … What has been a barrier for us is the matter of the organization of [the startups] inside the company. When the startup needs to run a test on the field … its complicated because at the same time that you need to be flexible for them because they don't have a robust structure [like our other vendors], there are big occupational risks there. … So how do we cover ourselves …. while at the same time providing flexibility to [the startups] so they don't have to present the same amount of paperwork that we would require from a traditional vendor? So that is a barrier that we are still dealing with very cautiously."
>
> *- Interviewee Company D*

Long-term strategy with short-term metrics

The interviewees did highlight the importance that this is a long-term strategy and often takes many years to yield the types of return that other parts of the firm bring to the bottom line. However, the way that these activities are set up within the company often has deeply ingrained requirements of providing short-term results in order to keep it going. Some of our study participants expressed having to seek a balance between the short-term and long-term. Established firms often expect all of their strategy to yield returns in a similar time-frame. They are used to growing, to investing in things that bring value, and to more often than not being risk averse. Generally speaking, seeking innovation through startup engagement is often incongruent with these types of expectations.

> "One of the things we are looking to change is that we started with a very open criteria and now we are thinking of maybe making this more focused so that the projects that we bring in might be more linked to our operations. This is a way we are looking at to bring more results in the short-term because otherwise [the company] might start questioning [what we are doing]."
>
> *- Interviewee Company E*

> "I think we have two sides. Today we have more of the short-term, but we are moving towards having the long-term as well. Currently, we end up partnering with startups that have solutions for challenges that we have right now and not to develop something for us that can be a differentiating factor in the future. But we are seeking to eventually have both."

- Interviewee Company D

> "people don't necessarily see, they are all focused on innovation being disruptive. This creates anxiety that things aren't happening. It is something we are working on … showing innovation inside the company to show that there are things happening, a lot of incremental things, like improving processes and whatnot. So I see there is this anxiety, and I see that it is a long-term approach to create a culture here that will allow us to innovate in more permanent ways"

- Interviewee Company B

Needing to find this balance between short-term and long-term has led some of our study participants to approach their innovation activities in portfolio format. Just like investments, this can help them produce smaller short-term gains that can hold them over while realizing potentially bigger gains in the long run.

> "we want to work with a portfolio of projects that bring results both in the short-term and long-term. We may have some projects that may not have a big upside in the long-term, but that we know that can bring upside on the short-term, so we add those to the portfolio so that we may generate some quicker deliverables knowing that other projects may need much more time to bring a much bigger upside – but that are also uncertain. So we try to use this portfolio approach."

- Interviewee Company E

> "We use the portfolio approach. We have a lot of initiatives that are short-term. Everything we do in terms of [improving operations] are all initiatives that have very short-term timelines – things that in one months can be delivering results. These are the things we have already implemented for a longer period of time in the company, and since these pay for themselves it is easy to show results. The issue are the long-term initiatives, so you have to create money from these short-term projects to support the long-term ones"

- Interviewee Company C

4.2.5 Angel Client concept

An important concept that emerged from this research has been that of what I am titling here the "angel client". This was not a topic that I specifically sought to discuss with the participating companies, but it was something that emerged as it was talked about in a one form or another with a few of the participants. This concept did not appear in the prior literature and was not evident in an additional literature search after the field research in order to confirm whether or not it had been discussed in academia. I am defining angel client as follows:

> An **angel client** is a client that helps validate and give momentum to a startup who may otherwise be struggling to gain traction within their market.

As may be expected, this type of relationship brings a lot of benefits to the startup, including the validation of their product, business model, and organization. Having this major account within their client portfolio can act as a stamp of approval for that startup within the market and lets other potential clients know that they are a viable vendor within a sea of potentially unstable startups.

> “we’re helping them create their company, their product, helping the price the product to the outside world … so it’s an exchange, we help them develop their business, they help us be more flexible, understand how the world is today, learn about technology, etc.”
>
> *- Interviewee Company C*

> “[this startup] for example, was one of the ones we hired from our open innovation challenged last year, we were their first client and this gave them a gigantic momentum to get other opportunities.”
>
> *- Interviewee Company C*

In addition to this, angel clients may be very relevant for startups looking to enter industries that are traditionally bureaucratic and heavily regulated, and industries that have high barriers of entry in general. As mentioned in the previous section, it can be very bureaucratic for new technology to be tested in places such as major infrastructure construction sites or large factories, so the willingness of these large companies of finding more flexible ways for startups to do so is a huge boost to these businesses.

> “in heavy construction, [these startups] might even have access to funding but it requires them to have validated products, some clients, having an MVP, etc. And an MVP in construction, it’s a robot, it’s not a chip. I’m talking about something that is very big, the guy doesn’t have millions to invest in a robot. So they tell us: ‘they biggest value you can bring to us is to be our laboratory, open up your construction sites to us, which is a very regulated area, so that I can test out my solutions. If you do that, I can do the rest’.”
>
> *- Interviewee Company C*

You may be wondering, if this is so beneficial to the startup, why it would be relevant enough to be included in the analysis of this research, which focuses primarily on the side of the large corporations? On the company side, there are indeed several advantages in being the angel client to a startup.

On the most basic level of vendor relationship-building, having the relationship with the vendor be built from early on in their business allows for a deeper relationship and therefor more trust and understanding between the firm and the vendor. In addition to this, being a

major client of a small company means you get a lot of attention, as opposed to being a small client of a big vendor. This strong relationship with the startup also likely means that your feedback is very valuable and can impact future version of their products, new offerings, and improvements to the services you already contract – something that can add to your flexibility and speed when looking for solutions to future problems.

Another big advantage that firms should be aware of is that by having this as a part of previous startup engagement programs the firm runs will help them be more attractive to other startups in future iterations of the programs. As corporate-startup engagement becomes more and more popular among firms, they will be competing with others to attract the same startups. By being known as an angel client who is a good partner to startups and wants to see them success, these firms will likely attract more qualified startups in future iterations of their programs, thereby helping increase the chances of success.

> "there is no equity, there is no IP, etc. it is really free and open. We want to help them develop so we can have the knowledge of these things and to have priority in the future in being able to hire them [as vendors]. For the startup this is great because they have nothing to lose, they say: 'I'm going to test out my business without risk, and if it works out then I even get a great client out of it'. We become the R&D of the startup"
>
> *- Interviewee Company C*

> "There have been startups here that construction managers have wanted to implement their solutions in all of our construction sites. This is a major thing not just for us for the startup as well. … I want them to do well, I want them to fly … We have to think of this as building long-term relationships and partnerships."
>
> *- Interviewee Company C*

5. Conclusions

It was clear with all of the subjects in this research that engaging with startups was an activity that they see value in. Although the motivation from company to company may vary, it is a strategy that is being implemented with enthusiasm and a vision that by pursuing these activities the company will reap benefits. Ultimately we circle back to the question of whether or not utilizing startup engagement mechanisms is a manner with which firms seek sustained competitive advantage (SCA). With the context acquired in this research, it is of my opinion that yes indeed it is a strategy that seeks to develop SCA for the firms.

In circling back to the concept of competitive advantage, and specifically looking at Barney's (Barney, 1991) definition of sustained competitive advantage within the resource-based view, it is clear that the implementation of the strategy of engaging with startups is very

much in line with seeking SCA. The varied motives and perceived advantages detailed in the Analysis and Discussion section above makes it clear that this strategy is a vehicle for various elements that lead to SCA.

Primarily, implementing strategies of startup engagement allows these firms to look for resources that their current and potential competitors (a) are not utilizing and (b) that may have that extra edge of being valuable, rare, imperfectly inimitable, and has no substitutes.

In engaging with startups what these firms are really seeking is their next edge – whether it be a new technology, a crucial improvement to their processes, a valuable relationship with a new vendor or client, or even just the insider knowledge of how their market and potential competition may be shifting in the near future in order to be able to prepare and adapt better and quicker than their competitors.

Particularly when looking at the companies that are, or consider being, an angel client to the startups they engage with, it is important to link this to Barney's view of sustained competitive advantage, and in particular to the characteristic that a resource should be imperfectly imitable in order to have the potential to generate SCA. The relationship of the angel client is very complex and will be quite difficult for competitors to imitate, giving the firms who are establishing these types of relationships a definite edge over their competition.

In addition to this notion of sustained competitive advantage, there were also some other pertinent conclusions emerging from this research. First, it is clear that startup engagement is a very proactive strategy. While some companies have implemented passive mechanisms like an online platform for submission of innovative ideas, for the most part this approach tends to be very proactive and hands-on. This element alone requires that firms who choose to utilize this strategy be committed and willing to direct the necessary resources to it in order to meet their objectives and actually benefit from these activities in the best possible manner.

The research also points to the ability of firms to create a path to a great open innovation strategy. The interviews made it clear that there is no singular best approach to open innovation and startup engagement. However, the results do suggest that firms who want to employ this type of approach may do so by implementing the mechanisms at different moments in order to develop their strategy to most beneficial version it can be. It may be useful to think of this as a "path" in which companies might benefit from testing out the waters of open innovation at first with small pilot programs, short-term events, and informal mechanisms of engagement, and then work their way toward a more commitment-heavy strategy such as CVC or corporate

accelerators. Eventually on this path companies will find a balance between the mechanisms that bring them the best results according to their objectives, while also helping them sustain their competitiveness over their peers.

For example, a firm who is looking to implement this type of strategy for the first time, may find it useful to start off by renting space in a coworking unit and allowing strategic staff members to work from the alternate location rather than the main offices. This would start to give those employees more of an insight on how startups might work, what the ecosystem looks like, what other large firms (and competitors) may be doing, and how to interact in efficient ways with the startups and entrepreneurs they start to engage with through co-location. A next step may be to eventually build and run an accelerator program with a third-party partner and eventually bring it all in-house once the necessary capabilities exist. It could also be that eventually companies that don't find it efficient to have such an involved strategy, may be shifting heavily toward corporate venture capital – while they can still see what is going on in the market, new technologies, shifts in the industry, and new consumer demands, they can do so at arm's length.

This insight of a "path" also gives way to the very important understanding that this is a long-term strategy and besides the behemoths of the world (the large tech companies, major banking institutions, and other very large firms) that started to implement this strategy many years ago, what we see currently is the large domestic players, large firms from traditional industries, and significant international mid-size players starting to implement this type of strategy. While the pioneers of this type of strategy may already have results, the companies who have undertaken this in the past couple of years are still getting to a place where they can show concrete results from these activities. Companies must have awareness of this and be prepared to change their traditional mindset in relation to how quickly implemented strategies must turnaround results.

Ultimately, what this research shows us is that firms that are implementing strategies of startup engagement all do so for different reasons, they approach the strategy is different ways, and they perceive different advantages in doing so. There is overlap in these elements among the firms in the study, but what does come to light very clearly is that there is no one-size-fits-all formula for pursing and executing this strategy. In contrast to this, on the side if difficulties and barriers the majority of the firms had all of them in common. This shows us that while there is no exact or best blueprint for how to carry out a startup engagement strategy, firms need to be aware of barriers they are likely to face when doing so. They must be aware of elements such as their engrained traditional corporate culture and how to be attractive as a

potential partner to startups, and be willing to overcome these barriers in order to reap the potential benefits of employing a startup engagement strategy.

6. Best Practices

One of the goals in undertaking this study was to come away from it with actionable best practices that companies can put into action when looking to innovate through strategies of engagement with startups. This section is therefore dedicated to synthesizing the learnings from the research into a practical list for managers to reference when planning and executing these types of strategies. This is by no means an exhaustive list, however, I do feel that it covers a majority of important elements that managers must consider when seeking to implement a successful strategy of open innovation through startup engagement.

- Seek to have full company **alignment**
    - It is important that the company's objectives, culture, organizational architecture and incentives structure are all well-aligned with this strategy.

- Approach this as a **partnership**
    - Everyone must be getting something out of this – the company, the startup, and ultimately the clients should all gain from this type of strategy.

- Understand what makes you **attractive** in order to appeal as a potential partner to the best possible startups
    - It is not enough to be a strong brand or to guarantee a certain level of investment into the startup. Take into consideration what the startups need and what they value in a relationship with a large corporation.

- **Management** is extremely important
    - A strong sponsor is key (ideally a C-level executive) – having this strategy reverberate from the very top of the company is crucial in getting buy-in from the rest of the company. It is also crucial to have capable management who are able to be flexible, deploy resources, dedicate staff, and be able to manage current business while looking forward to new, innovative horizons.

- Actively look for **incremental** innovations, and be ready for the moment when **radical** innovations appear
    - Not everything that comes out of startup engagement activities will be radical and change the course of the company. Startup engagement will most likely bring incremental innovations that can have great benefits to your firm – whether it be in process, product, or even marketing and organizational scopes. Not ignoring these small but potentially important opportunities to innovate is key. Tackle actual problems now while you look to the future and potentially disruptive innovations that may emerge.

- Be aware of potential **barriers and difficulties**, and find ways to overcome them
    - Come up with potential ways to avoid internal resistance, slow change in company culture, and incentives that don't motivate your team to get on board with this strategy.

- There is no **one-size-fits-all** solution
    - What your competitors may be doing may not be the best approach for you, therefore it is important to create a strategy that works best with the reach, resources, and objectives of your company. Consider starting off with a pilot program and testing out a few different approaches to determine what can work best in the long-term. Do not feel the need to limit your strategy to one mechanism, however, avoid the pressure to implement too many.

- Be ready for the **long-term**, and understand how to measure the **short-term** successes
    - Companies are not likely to have a return in the short-term with this strategy, so only those with a long-term vision and commitment will be able to truly reap the benefits of implementing a startup engagement strategy. In order to remain committed to this approach, it is important to measure short-term metrics such as change in company culture, gaining new knowledge, and increasing access to potential new suppliers and customers. Although these are many times intangible gains early on, including them in your assessment will support the long-term commitment to the strategy.

- **Continually assess and improve** your startup engagement activities
    - Understand what is working and what could be improved. Don't be afraid to change things around and allow the strategy to evolve over time.

This brief guide of best practices may be used as an aid in planning startup engagement strategies within any firm. As the research here demonstrates, this type of strategy is being utilized by a wide variety of firms, ranging in industry and size. In addition to this, the types of mechanisms utilized and how they are implemented vary widely. There is no formula for what works in every case, however, taking into consideration the points above may help managers assess important elements that can facilitate success with this type of strategy. It may also be useful to the reader to explore some of the items listed in the bibliography, in particular the literature from Henry Chesbrough, Clayton M. Christensen, and Peter F. Drucker on innovation.

7. Future Studies

The research on corporate innovation is broad, and with such varied actors and activities to analyze, the topics of study can be nearly endless. From public programs to corporate innovation, the broad spectrum of innovation catalyst activities allows for studies to go in any direction and still find open space for analysis.

In terms of corporate innovation through engagement with startups, there are several interesting topics that may be further investigated.

- Digging deeper into the individual mechanisms of engagement and better understanding the knowledge transfer from one side to the other
- Quantitative research on actual investment amounts and long-term financial returns from innovation activities that engage with startups
- Looking at innovations that have stemmed from these activities and that have actually gone to market, and understanding the side of the client/consumer who has used or benefited from that innovation
- Focusing on crowd-sourced/customer-sourced innovation strategies
- Analyzing the innovation activities that include startup engagement through the lens of the startups, better understanding their side of the strategy
- Digging deeper into the concept of the "angel client", in industries that have a high barrier to entry

Although this research can go in so many directions, if future studies are being undertaken by a company in a further effort to understand this type of corporate innovation strategy, I would recommend that these future studies focus on (a) the specific mechanisms of transfer of knowledge from the startups to the company and (b) case studies of other companies that were able to get an innovation that stemmed from startup engagement and successfully bring it to market.

Appendix

Appendix A – Detailed list of interview topics and questions

I. **General overview of the company and interviewee**
   a. Can you tell me a bit about yourself?
   b. Can you share with me a bit of the history of the company?
   c. What is your role here?
   d. Are you involved with any innovation initiatives?

II. **Why the company values innovation and seeks to innovate**
   a. Does your company value innovation?
   b. Why?
   c. Why do you seek to innovate?
      i. Market forces? Competition/positioning?
      ii. Cultural influences?
      iii. Technology?
      iv. Financial forces?
      v. Public policy influence?
   d. Has the organization experienced some unexpected competition or disruption? (explore if this was caused by a smaller/new entrant)

III. **How the company seeks to innovate**
   a. Types of innovation – product, process, organizational, marketing
   b. Intensity of innovation – incremental, radical

IV. **Goals of innovation**
   a. What are the main goals that drive your innovation strategies?
   b. What types of innovation are you focused on? (product, process, organizational, marketing)
   c. What intensity of innovation are you focused on? (incremental and/or radical)

V. **Innovation strategies**
   a. What types of strategies have you used to stimulate innovation with the company?
   b. How long have you been implementing innovation strategies?
   c. How do you decide on the best strategies for you?
   d. Do you look internally or externally for innovation? Both?

VI. **Innovation activities**
   a. What types of innovation activities is the company undertaking?
   b. Are you looking internally as well? Allowing employees to "startup"?
   c. How long-term or short-term is are these strategies for you?

VII. **Corporate structure in which these activities take place**
   a. What is the structure of your innovation initiative?
   b. Separate business unit?
   c. Separate budget?
   d. Who is accountable? Who is in charge? Who makes the funding decisions?
   e. How is this side of the business evaluated?

VIII. Activities that include engagement with startups – may apply to external startups, as well as companies that facilitate intrapreneurship

a. What do you see as the advantages of the innovation strategies of engagement with startups?
b. What are the difficulties, risks, or issues with this type of strategy?
c. What are your main goals in pursuing innovation strategies of engagement with startups?
d. What elements do you think are most important when planning/undertaking this type of strategy?
e. How do you choose which types of startups you want to engage with?
    i. Does this have to do with your core business?
    ii. Is there a focus on expanding into new markets?
    iii. Is the goal to add to your portfolio of offerings? To verticalize your business? To substitute a current product/technology you are using/offering?
f. How do you select which startups to engage with?
    i. Is there a formal application process?
    ii. Is it based on your team's market research or determination of a capability gap?
    iii. What does the startup need to have as a base-level for being considered?
    iv. How objective/subjective is this process?
    v. Who makes the decisions to engage or not with a startup?
g. How do you structure your level of involvement with them as well as how you will see a return from engagement?
    i. Is there a formal contract?
    ii. What do you include in that contract? NDA? Structured amount of knowledge transfer? What types of resources do you guarantee?
    iii. What are the limitations?
    iv. Are you investing into the startups you engage with? What is the average equity stake and/or amount invested?
h. Do you have monitoring processes and structured review mechanisms to track progress?
    i. How often?
    ii. What do these look like? What methodology are they based on?
    iii. What do you measure?
    iv. What happens if not enough progress is happening? Do you cut off startups or divest depending on this monitoring of progress?

IX. Results obtained from innovation activities that include engagement with startups

a. What have been the results of your initiatives?
b. What went wrong?
c. What changes did you make along the way?
d. What would you do differently in the future?
e. What is the ROI of your investments of engaging with startups?
f. What types of startup engagement have yielded better/worst results?

X. Other opinions about corporate innovation

a. How does taking a corporate entrepreneurship approach affect other parts of your business? Or is this something that essentially "lives in a vacuum" and doesn't influence the other parts of the business?
b. How do you think this type of approach contributes to competitive advantage?
c. Is this something that could work at every company? What types of companies or industries are more suited for this type of strategy?
d. Do you think there is an element of this being a trend? Is there longevity here?
e. How does corporate governance play into innovation in organizations?
f. How have you trained/informed the people who work here about innovation, the initiatives you are undertaking, how they fit into it, etc.?
    i. Formal trainings? Informal communications?
    ii. Clear roles?
g. How does government policy help or hinder your strategies?

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