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Learning from startups

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SUMMARY

More and more corporations engage with startups to become more innovative. However, the dissimilarities between both organizations decreases the corporation's ability to learn from startups. In order to build sufficient absorptive capacity corporations need an interface function, for which they can use accelerator programs.

The goal of this research is to find out how accelerator programs in the role of interface function can enhance corporations' absorptive capacity by overcoming the dissimilarities between their organizations and startups. Therefore the following research question is formulated: *"How do accelerator programs contribute to relative absorptive capacity in outside-in open innovation processes?"*

In order to answer this question an inductive multiple-case study research was conducted. Three cases, two cases with presence of an external accelerator program and one case with presence of a corporate accelerator program, are examined. Several data sources are used of which the 19 semi-structured interviews are the most import. The data is analysed by conducting a qualitative cross-case analysis.

This research makes fundamental contributions in the areas of intermediary roles and absorptive capacity. The primary research result is that in order for corporations to learn from startups they are in need of a centralized interface function to overcome both organizations' dissimilarities. Due to its structural position, an external accelerator program's ability to fulfil this role is limited to supporting a corporation's existing interface function to the external environment. On contrary, the structural position of the corporate accelerator program enables this type of program to fulfil the roles of cross-function interface as well as the interface to the external environment. As a result, this type of program has the potential to increase organizational absorptive capacity. The research results implicate that the structural position of an intermediary is an important determinant for the contribution it can make to organizational absorptive capacity in the role of interface function.

1 INTRODUCTION

Over the last decades several established industries have been disrupted (Freeman & Engel, 2007). Market incumbents like large corporations need to become more innovative as innovation is crucial for survival in an increasingly changing environment (Blank, 2013; Crossan & Apaydin, 2010; Weiblen & Chesbrough, 2015; Wessel & Christensen, 2012). Due to developments as shorter technological life cycles and faster growth of external knowledge, the traditional model of 'closed innovation' has been challenged (Chesbrough, Vanhaverbeke, & West, 2006; Vanhaverbeke, Van de Vrande, & Cloodt, 2008). Nowadays, corporations increasingly interact with their environment leading to a significant amount of external knowledge exploration and exploitation. This use of external sources postulates that the assets necessary for creating innovation will not necessarily be collocated with those for commercializing them and that organizations' critical resources may extend beyond organizational boundaries (Chesbrough, 2003; Dyer & Singh, 1998; Enkel, Gassmann, & Chesbrough, 2009; West & Bogers, 2014). This more open way of innovating is called 'open innovation' (Chesbrough, 2003) of which the most important types are outside-in and inside-out, also referred to as inbound and outbound (Chesbrough, 2012; West & Bogers, 2014). In outside-in open innovation, which has received the most attention in both academic research and in industry practice, the innovation process is opened up to external sources of knowledge and thereby increases organizations' innovativeness (Chesbrough, 2012; Enkel, Gassmann, & Chesbrough, 2009). A focus on outside-in processes as a mean to enhance corporate innovativeness, automatically involves coupled processes, which is the third type of open innovation (Enkel, Gassmann, & Chesbrough, 2009; Gassmann & Enkel, 2004).

As the locus of innovation is no longer within an individual corporation, external partners have become the most import source of innovation (Enkel, Gassmann, & Chesbrough, 2009; Dushnitsky & Lenox, 2005; Dyer & Singh, 1998; Powell, 1998). More recently, especially startups have become a popular source due to their entrepreneurial culture and the different innovation model they use, which enables them to innovate more radically than corporations. Also they have higher speed and agility in innovation processes than corporations do (Dushnitsky & Lenox, 2005; Freeman & Engel, 2007; Kohler, 2016; Nesta, 2015; Weiblen & Chesbrough, 2015). In turn, startups can use corporations to get access to their knowledge, markets and the distribution

channels to launch new products and services on a large scale. Therefore, several scholars argue that collaboration between corporations and startups in innovation can bring prosperity for both types of organizations (Freeman & Engel, 2007; Ireland, Hitt, & Sirmon, 2003; Kohler, 2016; Weiblen & Chesbrough, 2015).

In order to profit from startups as an external source of knowledge, corporations need to possess the ability to learn and manage knowledge. This is an important managerial lever to increase innovativeness and can provide organizations with a competitive advantage (Barringer & Harrison, 2000; Crossan & Apaydin, 2010; Dyer & Singh, 1998; Easterby-Smith, Lyles, & Tsang, 2008; Enkel, Gassmann, & Chesbrough, 2009; Levinthal & March, 1993; March, 1991; Powell, 1998). Interorganizational learning, also referred to as interorganizational knowledge transfer, is very complex because of the multifaced nature of the boundaries and processes involved that have implications for knowledge transfer (Argote, McEvily, & Reagans, 2003; Holmqvist, 2003; Easterby-Smith, Lyles, & Tsang, 2008). A central factor in literature on interorganizational learning and an important variable that helps determine how much organizations can learn through these relationships is absorptive capacity (Barringer & Harrison, 2000; Easterby-Smith, Lyles, & Tsang, 2008; Lane & Lubatkin, 1998; Van Wijk, Jansen, & Lyles, 2008). Outside-in open innovation and absorptive capacity are necessarily linked to each other as absorptive capacity is a crucial capability and a precondition for successful participation in outside-in open innovation (Gassmann & Enkel, 2004; Spithoven, Clarysse, & Knockaert, 2011; Vanhaverbeke, Van de Vrande, & Cloodt, 2008; West & Bogers, 2014). Over time, the construct of absorptive capacity has been modified by several scholars, from whom Lane and Lubatkin (1998) introduced relative absorptive capacity, which suggests that an organization's ability to learn can differ by collaboration partner because it depends on the characteristics of both organizations. Because the ability to learn decreases when organizations are more dissimilar (Lane & Lubatkin, 1998) this is of great importance for corporations that want to use startups as an external source of innovation. As corporations and startups vary in culture, clock speed, risk appetite, structure, knowledge base, and so forth, they are indeed very different types of organizations (Blank, 2013; Kohler, 2016; KPMG, 2014; Nesta, 2015; Weiblen & Chesbrough, 2015).

A corporation's absorptive capacity depends on the individuals that stand at the interface between their organizations and startups. This interface function may be diffused across individuals, or can be more centralized like in an organizational unit (Cohen & Levinthal, 1990). Besides internal intermediaries, corporations can also use external intermediaries to function as the interface that is needed to bridge the gap between the corporate and the startup world (KPMG, 2014; Spithoven, Clarysse, & Knockaert, 2011; Weiblen & Chesbrough, 2015). From the several methods of engaging with startups that corporations have developed over time (Dushnitsky & Lenox, 2005; Kohler, 2016; Weiblen & Chesbrough, 2015) the rapidly growing phenomenon of accelerator programs is a method that might have the potential to fill in this interface function, making interorganizational collaborations between corporations and startups more efficient and effective (Cohen & Hochberg, 2014; Hoffman & Radojevich-Kelley, 2012; Kim & Wagman, 2014; Kohler, 2016). There are privately owned accelerator programs and corporate accelerator programs that are owned or sponsored by corporations (Heinemann, 2015; Kohler, 2016; Weiblen & Chesbrough, 2015). However, given the newness of the phenomenon, research on both types of accelerator programs is limited and little is known about the effects these programs have (Cohen S. , 2013; Cohen & Hochberg, 2014). A clearer understanding of what contributions accelerator programs make to the differences between two types of organizations in outside-in open innovation processes will contribute to the emerging field of research on accelerator programs. This understanding will also contribute to the field of research on absorptive capacity, in which the moderating effects of organizational units like, for instance, a corporate accelerator program, is one of the fields of future research that would further enhance our understanding of how organizational units influence absorptive capacity (Jansen, Van den Bosch, & Volberda, 2005). Other scholars have emphasize the need to explore how open innovation forces organizations to develop new routines to enhance absorptive capacity. Research in which open innovation and absorptive capacity are combined will help to strengthen our understanding of absorptive capacity (Vanhaverbeke, Van de Vrande, & Cloodt, 2008). To achieve these understandings and to make these contributions to the literature, the following research question is formulated:

"How do accelerator programs contribute to relative absorptive capacity in outside-in open innovation processes?"

2 THEORETICAL BACKGROUND

Corporations are existing organizations that are older and usually larger organizations that are market incumbents (Freeman & Engel, 2007). Startups are temporary organizations that are recently started by entrepreneurs. Startups are typically build around technology for high growth potential and search for a repeatable and scalable business model (Blank, 2013; Freeman & Engel, 2007; U.S. Small Business Administration, 2016). This design for rapid scale-up separates them from other small business and the temporary aspect refers to a startup's goal to stop being a startup and 'to graduate' to become a large business or to fail and move on to another opportunity. When a corporation engages with a startup in outside-in open innovation, the corporation goes through a three-phase process of obtaining, integrating and commercializing, which is combined with interactions between the corporation and the startup (West & Bogers, 2014). In the first phase two steps are required to obtain an innovation: a corporation must first find the startup and then bring the innovation from the startup into the corporation (West & Bogers, 2014). The corporation may search for product/service, process or technical innovations or knowledge and other useful information to enhance innovation (Bogers & West, 2012; Crossan & Apaydin, 2010). How to effectively identify the most valuable innovations is a major challenge for most organizations. It contains activities like sourcing and scouting by deploying different types of internal and external intermediaries. After finding an innovation it needs to be acquired which usually involves contracts or licensing agreements. An innovation can be acquired through the acquisition of knowledge or technology, or through the acquisition of the startup. The latter is out of the scope of this research. Secondly, after obtaining the innovation from the startup, it needs to be integrated in the corporation (West & Bogers, 2014). In the third phase the corporation needs to profit from the innovation, which requires that both the choice of an innovation and its commercialization strategy are aligned to the corporation's business model in order to create and capture value (Chesbrough, 2003; West & Bogers, 2014). Innovation based value creation is at the centre of open innovation which makes the business model a central idea in open innovation (Vanhaverbeke, Van de Vrande, & Cloodt, 2008). Research on this commercialization phase and the process as a whole are scarce (West & Bogers, 2014). Whereas Chesbrough (2006) describes a sequential, linear model of innovation, most innovation models include feedback loops, which may occur at any phase of the process (West & Bogers, 2014). Interaction mechanisms can be found in collaborative

innovation processes, corresponding to the coupled innovation processes (Enkel, Gassmann, & Chesbrough, 2009) that involve collaboration between the corporation and the startup in dyadic co-creation (West & Bogers, 2014), as when two organizations jointly create value through a number of non-arm-length transactions (Vanhaverbeke, Van de Vrande, & Cloodt, 2008). In this dyadic co-creation there are two actors, an innovation creator and an organization seeking innovations from external sources (Lane & Lubatkin, 1998; West & Bogers, 2014).

Although practice and theory seem to indicate that open innovation is beneficial for organizations, there are also risks and barriers organizations face that hinder them from profiting their initiatives (Enkel, Gassmann, & Chesbrough, 2009; West & Bogers, 2014). In order to help organizations in finding a balance between open and closed innovation, a measurement system will be helpful. However, innovation measurement is still looking for an appropriate metrics system, which makes it hard to evaluate open versus closed innovation approaches (Enkel, Gassmann, & Chesbrough, 2009; Gassmann, Enkel, & Chesbroug, 2010). Vanhaverbeke (2006) specifically mentioned that measuring inter-organizational knowledge flows is an important challenge in realizing new metrics to measure open innovation. Chesbrough (2004) introduced metrics to evaluate early-stage technology projects. Although these guidelines could be helpful, they only evaluate a small part of the process, and hold a portfolio management perspective. Enkel et al. (2011), following her own suggestion for future research, developed an open innovation maturity framework to measure and benchmark excellence in open innovation. This framework combines metrics in several areas of open innovation to illustrate the expertise of an organization and thereby reveals organizational excellence as well as areas of improvement. This framework could help decision-makers asses the status of open innovation processes within their organization and make direct improvements, but does not provide insights for comparisons between two or more organizations. Finally, West and Bogers (2014) mention measures for the two elements of the business models, value creation and value capture, but also mention that the business model seems to be a central concern for researchers and practitioners only when considering inside-out or coupled open innovation. None of the publications found in the literature provide a framework to evaluate the whole process, nor seems there to be a commonly accepted standard to determine the efficacy of open innovation processes.

2.1 Relative absorptive capacity

Absorptive capacity is at the heart of outside-in open innovation (Vanhaverbeke, Van de Vrande, & Cloodt, 2008). As mentioned in the introduction, it is an important variable that helps determine how much an organization can learn through interorganizational collaboration and is therefore a crucial capability and precondition for successful participation in outside-in open innovation. Cohen and Levinthal (1990) define absorptive capacity as an organization's ability "to recognize the value of new, external information, assimilate it, and apply it to commercial ends" (p. 128). Absorptive capacity is path dependent, based on prior knowledge and can be developed cumulatively. Therefore some organizations have better capabilities in learning from interorganizational collaborations than other firms do (Cohen & Levinthal, 1990). The three dimensions of absorptive capacity are highly interconnected with outside-in open innovation as illustrated in table 1. The first dimension of absorptive relates to the know-what of external sources of innovation and is especially important in the obtaining phase of the outside-in open innovation process. The second dimension includes the know-how and is relevant in the integrating phase of the process. The last dimension is related to the know-why aspect and is important in the commercialization phase (Cohen & Levinthal, 1990; Vanhaverbeke, Van de Vrande, & Cloodt, 2008; West & Bogers, 2014).

TABLE 1
Connecting the outside-in open innovation process with (relative) absorptive capacity*

Outside-in open innovation process phases	Dimensions of absorptive capacity	Dimensions of relative absorptive capacity
Obtaining innovations from external sources	Know-what: an organization's ability to recognize the value of new, external information	Know-what (knowledge): similarity of both organizations' knowledge bases
Integrating innovations in the focal organization	Know-how: an organization's ability to assimilate it	Know-how (knowledge-processing systems)
Commercializing innovations to customers	Know-why: an organization's ability to apply it to commercial ends	Know-why (dominant logics)

**Derived from Cohen & Levinthal* (1990), *Lane and Lubatkin* (1998), *Vanhaverbeke, Van de Vrande & Cloodt* (2008), *and West and Bogers* (2014).

Cohen and Levinthal (1989; 1990; 1994) present absorptive capacity explicitly as a learning process and implicitly as a capability. Investments in R&D activities are presented as an antecedent of absorptive capacity, which is problematic since it treats absorptive capacity as a static resource and not as a process or capability (Lane, Koka, & Pathak, 2006). Moving absorptive capacity away from an exclusively R&D focus to broader perspectives other researchers (Dyer & Singh, 1998; Lane & Lubatkin, 1998; Lane, Koka, & Pathak, 2006; Van den Bosch, Volberda, & De Boer, 1999; Zahra & George, 2002) later suggested that several other areas are relevant and over time many other antecedents of absorptive capacity have been identified, which can be categorized in knowledge, organizational, and network characteristics (Van Wijk, Van den Bosch, & Volberda, 2011). The last category also involves actors beyond the organizational boundaries and is therefore relevant when focusing on the collaboration between a corporation and a startup, the dyad level. Whereas Cohen and Levinthal (1990) argue that an organization has an equal capacity to learn from all other organizations (Cohen & Levinthal, 1990), suggesting that absorptive capacity is absolute, research at the dyad level suggests that the ability to learn may vary by learning partner, arguing that absorptive capacity is relative or even partner-specific (Dyer & Singh, 1998; Lane & Lubatkin, 1998). Several antecedents like trust, social ties and cultural compatibility influence an organization's ability to learn from another organization (Easterby-Smith, Lyles, & Tsang, 2008; Van Wijk, Van den Bosch, & Volberda, 2011). One of the first and most important theories in this category is relative absorptive capacity by Lane and Lubatkin (1998). In this learning dyad-level construct there is a student organization and a teacher organization. The student's ability to learn from the teacher depends on the similarity of both organizations' knowledge bases, organizational structures and compensation polices, and dominant logics (Lane & Lubatkin, 1998). Or as Lane and Lubatkin (1998) describe it themselves: "we argue that the ability of a firm to learn from another firm is jointly determined by the relative characteristics of the student firm and the teacher firm"(P. 462). As the dimensions of relative absorptive capacity influences the absorptive capacity of corporations when engaging with startups, this will influence the outside-in open innovation processes in with they engage, as shown in table 1. The dimensions of relative absorptive capacity will be discussed next.

2.1.1 Similarity of both organizations' knowledge bases

In order to be relevant enough to facilitate the recognition and valuing of new external knowledge from startups, a corporation's prior scientific, academic or technological knowledge should contain some amount of basic knowledge of the new knowledge (Cohen & Levinthal, 1990; Lane & Lubatkin, 1998). This means that there is a general understanding of the traditions and techniques upon which the new knowledge is based, which, as part of the common knowledge (Grant, 1996), makes it possible for the corporation to evaluate the importance of the new knowledge for its own organization (Cohen & Levinthal, 1990; Dyer & Singh, 1998; Lane & Lubatkin, 1998; Powell, 1998; Szulanski, 1996). The main difference between the knowledge bases of corporations and startups is the level of diversity, which represents the breadth and the number of domains in which an organization has knowledge (Van Wijk, Van den Bosch, & Volberda, 2011). Organizations create conditions under which multiple individuals can integrate their specialist knowledge and as organizations grow they differentiate (Grant, 1996; Tushman, 1977). As corporations are older and have more employees than startups do, their knowledge base has higher diversity. They have developed several domains in which they have a fairly deep level of generic knowledge (Chesbrough, Vanhaverbeke, & West, 2006; Grant, 1996; Nonaka, 1994; Powell, 1998). As a result, corporations have developed 'background competencies' that enable them to recognize and value the innovations of startups in many different domains (Chesbrough, Vanhaverbeke, & West, 2006). Startups on the other hand are often single-business organizations. As they are limited in their capacity to acquire, store and process knowledge due to fewer employees and less experience, they are required to specialize in a certain knowledge domain (Chesbrough, Vanhaverbeke, & West, 2006; Grant, 1996). Corporations will only be able to obtain innovations from startups when the domain of expertise of the startup has overlap with the diverse knowledge base of the corporation. When the organizations have entirely separate knowledge bases, the corporation will experience difficulty learning from the startup and the integration of knowledge cannot occur (Dushnitsky & Lenox, 2005; Van Wijk, Van den Bosch, & Volberda, 2011; Grant, 1996; Lane & Lubatkin, 1998).

In order to permit effective, creative utilization of the new knowledge by the corporation and to pursue more exploratory innovations, a part of the startup's knowledge must be diverse (Cohen & Levinthal, 1990; Dushnitsky & Lenox, 2005; Van Wijk, Jansen, & Lyles, 2008). In contrast to this statement, research by Lane and Lubatkin (1998) does not support the relevance for diversity which they defined as specialized knowledge

or knowledge in more specialized areas. Despite this indistinctness, the role of specialized knowledge will be part of this research that will thereby contribute to this discussion. As said, startups are more specialized because they develop a domain of expertise which leads to higher richness of knowledge, representing the depth and the extent of knowledge in domains (Van Wijk, Van den Bosch, & Volberda, 2011). The acquisition of this new specialized knowledge is one of the main drivers for interorganizational collaboration (Hamel, 1991) and the reason that startups often develop new agendas for business opportunities for corporations (Chesbrough, Vanhaverbeke, & West, 2006; Christensen, Olesen, & Kjær, 2005). The following example will illustrate these findings in the literature. Large pharmaceutical corporations often collaborate with small biotechnology startups in order to access new knowledge (Chesbrough, Vanhaverbeke, & West, 2006; Powell, 1998). Biochemistry is the basic knowledge which is needed in both pharmaceutical and biotechnology organizations to do research. However, biochemistry is a broad discipline and both types of organizations can differ in which area of biochemistry they are knowledgeable (Lane & Lubatkin, 1998) like genetics, microbiology or forensics. As the corporation has the basic knowledge of biochemistry and might also be knowledgeable in microbiology or forensics, it will be able to recognize and value the specialism that a startup has in genetics. This would be harder when the corporation wants to learn from a startups that is active in an area outside biochemistry.

2.1.2 Similarity of both organizations' structures and compensation policies

When a corporation recognizes valuable external knowledge from a startup, the next step is to internalize it. This is the assimilation process, which is influenced by a corporation's tacit, organization-specific knowledge regarding its established systems for processing knowledge (Cohen & Levinthal, 1990). A corporation's ability to learn from a startup depends on how similar their knowledge-processing systems and norms are, because the ability to internalize the valuable knowledge is greater when their organizations run on the same 'operating system' for knowledge processing (Lane & Lubatkin, 1998). As this process it itself is unobservable, Lane and Lubatkin (1998) derived two other categories of more readily observable organizational practices from the literature that are influenced by knowledge processing.

The first element that is illustrative for an organization's knowledge processing system is the organizational structure which represents the degree of formalization and centralization used by an organization when

allocating tasks, responsibilities, authority and decisions (Lane & Lubatkin, 1998). In corporations there is a higher degree of formalization than is the case with startups. A corporation's design is optimized for the exploitation of a certain business model as it focuses on developing and sustaining a competitive advantage (Blank, 2013; Freeman & Engel, 2007; Ireland, Hitt, & Sirmon, 2003). As corporations have learned about exploiting this business model, they accumulated knowledge which is stored in procedures, norms, rules, and forms (March, 1991) and specialized units have evolved to deal with particular tasks or environments (Tushman, 1977). Whereas corporations are highly standardized and have more formalized upper management systems, processes in startups are incomplete or even non-existent. Work roles are more fluid and flexible as jobs consist of tasks that need to be performed (Blank, 2013; Freeman & Engel, 2007; KPMG, 2014). Although a higher formalization is not related to the level and quality of innovation (Galbraith & Merrill, 1991), it causes corporations to move at a slower organization clock speed than startups that are less rigid and more agile. This makes it hard for corporations to 'keep up' with startups, which might take their toll as the collaboration proceeds (Blank, 2013; Freeman & Engel, 2007; KPMG, 2014; Weiblen & Chesbrough, 2015). Startups do not always have the time or resources to wait for a corporation and might move on to other alternatives.

Also the degree of centralization is different between corporations and startups. Hierarchy is the basic structure for organizing complex social activity (Grant, 1996) and therefore corporations as bigger organizations have more levels in the hierarchy of authority than startups do. There are more parties that have interests in the innovation process and those interests often diverge. Agency problems and internal frictions hinder knowledge transfer and slow down the allocation of resources. It becomes harder to deal with the organizational problem common to all forms of social organization, which is that of cooperation: reconciling the conflicting goals of organizational members (Freeman & Engel, 2007; Grant, 1996). As authority and knowledge are distributed over more employees this negatively influences a corporation's ability to integrate knowledge (Easterby-Smith, Lyles, & Tsang, 2008; Grant, 1996; Tushman, 1977). Unlike in corporations, lines of authority in startups are more messy and shared among members of the startup team (Blank, 2013; Freeman & Engel, 2007). There is often a strong focus on the development of the innovation itself and as the owners are the managers, agency problems appear only later when the organization develops (Freeman & Engel, 2007). As a result, startups are able to deal with greater amounts of uncertainty than corporations do,

because corporations have a more mechanistic structure (Tushman & Nadler, 1978).When engaging with startups this will lead to problems when innovations are more radical, unless the delegation of innovation related decisions are at a lower level as this increases exploration (Galbraith & Merrill, 1991).

The second element that is representative for an organization's knowledge processing system are compensation policies (Lane & Lubatkin, 1998). An organization's compensation policy directs individuals towards organizations' strategic objectives by emphasizing direction (Balkin & Gomez-Mejia, 1990; Galbraith & Merrill, 1991; Gomez-Mejia & Welbourne, 1988; Grant, 1996; Lane & Lubatkin, 1998). An important difference between corporations and startups is that in corporations these individuals are managers and in startups they often are the owners. Managers are compensated to execute what is specified in their contracts, whereas startup owners pursue their own interests (Freeman & Engel, 2007; Kirschbaum, 2005). In corporations managers are stimulated to effectively enhance and execute the existing business by a mechanistic compensation pattern, which is associated with internal growth, related products, and the dominant business. The focus is on maintaining and defending this business and managers are driven by the goal of meeting and exceeding predetermined plans, which tend to focus on financial performance and are mainly formulated in Key Performance Indicators (Balkin & Gomez-Mejia, 1990; Blank, 2013; Gomez-Mejia & Welbourne, 1988). Startups on the other hand prepare for rapid expansion along a narrow product line and use an organic compensation policy which is related with strategies of growth. They take greater risks and attract employees that are challenged by a riskier environment. As they focus on exploration, it is difficult to set realistic operational goals and measure performance against goal achievement, so they evaluate the behaviour used to attain goals and use metrics like customer acquisition costs and lifetime customer value. They pay for the individual, not the job (Balkin & Gomez-Mejia, 1990; Blank, 2013; Gomez-Mejia & Welbourne, 1988). Due to the compensation policy managers in corporations are encouraged to reduce risks and focus on short-term profitability when making decisions (Galbraith & Merrill, 1991). When engaging with startups in outside-in open innovation processes this might clash with the more entrepreneurial behaviour of the startups that focus on more explorative innovations which are not always profitable on the short-term. The more radical the innovation is, the higher the risk of failure and the longer it takes to profit from it (Freeman & Engel, 2007). As a result the more radical the startup innovation is, the larger the risk of rejection by corporate management.

2.1.3 Similarity of both organizations' dominant logics

Besides the ability to value and assimilate new external knowledge, absorptive capacity also implies the ability to commercially apply this knowledge to achieve organizational objectives. The degree to which the external knowledge is targeted to the corporation's needs and concerns will influence the ease of learning and utilization (Cohen & Levinthal, 1990; Lane & Lubatkin, 1998). Commercial objectives of organizations can vary over time and can be influenced by many things, but over the long run there seems to be some consistency in them. Organizations develop preferences for certain projects and strategy, which permits them to develop certain expertise in using information in specific ways to cope with a set of organizational problems, which may also lead to rigidity and limit an organization's ability in solving other types of problems (Lane & Lubatkin, 1998). This is an organization's 'dominant logic' which can be defined as the way how organizations "conceptualize and make critical resource allocation decisions - be it in technologies, product development, distribution, advertising, or in human resource management" (Prahalad & Bettis, 1986, p. 490) and is shaped by organizations' aspects of organizational learning: strategy, systems , values, expectations, and reinforced behaviour (Bettis & Prahalad, 1995).

At the level of strategy corporations focus on executing business models by implementing pre-defined business plans, whereas startups are searching for a business model through testing hypotheses of potential business models. Instead of releasing market ready 'finished' innovations, startups develop 'minimum viable products' which they use for gathering early and frequent customer feedback (Blank, 2013; Ries, 2011). The corporation's dominant logic is influenced by its extant business model which, if proven profitably, constrains its ability to evaluate other business models that differ substantially from the current model (Chesbrough & Rosenbloom, 2002). Also, in their assessment of the risk of an innovation corporations evaluate the potential conflicts with existing business models or strategic initiatives, like cannibalizing the corporation's current market (Freeman & Engel, 2007). In contrast, startups are likely to be less constrained in the evaluation of alternative business models as they start with a 'clean sheet'. Unlike corporations, they do not need to unlearn the 'old' dominant logic before starting strategic learning (Bettis & Prahalad, 1995; Chesbrough &Rosenbloom, 2002). For example, the huge success that Xerox had with the business model for the 914 copier in the early 1960's – which generated more revenues when more copies were made – caused a certain cognitive bias toward business development (Chesbrough & Rosenbloom, 2002). The success motivated

Xerox to develop faster copiers with maximum machine uptime. Later, Xerox used the same business model to exploit new innovations that came from its innovation unit PARC like the electronic printing business, which was also successful (Chesbrough & Rosenbloom, 2002). The successful replication of the business model led to reinforced behaviour (Bettis & Prahalad, 1995). But when Xerox replicated the business model to exploit its new innovation in computing this led to failure. PARC scientists that left Xerox and started new companies, creating independent entrepreneurial spin-offs, started exploiting the computing innovations through other business models leading to several successful companies like Adobe and 3Com (Chesbrough & Rosenbloom, 2002). This example highlights that the dominant logic of the corporation determines how knowledge is commercially applied (Lane & Lubatkin, 1998), which has implications for the utilization of new knowledge from startups. It is easier for a corporations to find commercial applications for the new knowledge when it fits their existing business model or when it uses the same strategy for searching for a business model. More corporations are embracing the startup strategy (Anthony, 2012), but the identification and execution of a different business model is an entrepreneurial act, which requires insight into both the technology and the market and therefore a startup is better suited for this job as startups are better in adaptation (Chesbrough & Rosenbloom, 2002). With a 'clean sheet' startups are more explorative and innovate more radical than corporations (Freeman & Engel, 2007). Also they expect failure during the innovation process failure which is fixed by iterating on ideas and leave behind those that do not work. A high failure rate is not excepted within corporations where failures are an exception (Blank, 2013). The differences in expectations and measures of performance are fundamental aspects that influence organizational learning and thereby the dominant logics of startups and corporations (Bettis & Prahalad, 1995). No two organizations have identical dominant logics (Lane & Lubatkin, 1998), but the more familiar the corporation is with the innovation provided by a startup, the easier it will be to commercially apply this innovation from the startup.

2.2 Accelerator programs

Over time, corporations have developed various methods for engaging with startups in outside-in open innovation processes. There are more traditional models, such as corporate venturing in which corporations use a controlling amount of equity to gain influence, and newer methods, like startup programs or one-off

events that make existing startups' technology accessible and useful for the sponsoring corporation. In these new methods corporate ownership is not typically involved or limited to a non-controlling amount (Dushnitsky & Lenox, 2005; Kohler, 2016; Weiblen & Chesbrough, 2015).

2.2.1 Accelerator program characteristics

Amongst the new engagement methods a rapidly growing phenomenon are accelerator programs, also referred to as seed accelerators or startup accelerators (Cohen & Hochberg, 2014). Accelerators are seed funding organizations for startups led by experienced, successful entrepreneurs who mentor and guide startups with the intention of reducing high failure rates (Hoffman & Radojevich-Kelley, 2012). Given the newness of the phenomenon, the first accelerator (Y Combinator) was founded in 2005, research on accelerator programs is limited and the definition of accelerator programs remains discordant. This hinders research and results by confusing accelerator programs with other support organizations that are part of the startup ecosystem like incubators (Cohen S. , 2013; Cohen & Hochberg, 2014). Based on their early explorative research Cohen and Hochberg (2014) define an accelerator program as "a fixed-term, cohort-based program, including mentorship and educational components, that culminates in a public pitch event or demo-day" (Cohen & Hochberg, 2014, p. 4). A specific type of accelerator program are corporate accelerator programs that copy the model of the independent accelerator programs (Weiblen & Chesbrough, 2015). The main differences are that corporate accelerators are either owned or sponsored by the corporation involved, and the programs are developed to meet both corporate objectives and fulfil startups' expectations (Heinemann, 2015; Kohler, 2016). Also, most corporate accelerators focus on specific verticals, whereas more traditional accelerators programs accept applications across a variety of industries (Kohler, 2016). There is inconsistency in the literature about the latter because Cohen and Hochberg (2014) mention that nowadays these programs are also diversified into industry-vertical focused programs. Table 2 provides an overview of the characteristics of the two types of accelerator programs. To avoid any misunderstanding the privately owned accelerator programs will be referred to as 'external accelerator programs'.

TABLE 2
Characteristics of accelerator programs*

Characteristics	External accelerator program	Corporate accelerator program
Ownership	Privately owned	Owned/ sponsored by the corporation involved
Venture Stage	Early stage	Early stage
Duration	3 months	3 to 6 months
Cohorts	Yes	Yes
Selection	Competitive, cyclical	Competitive, cyclical
Focus	Horizontal, or specific vertical	Specific vertical
Education and mentorship	Relevant training, seminars, and intense guidance, by self and others	Relevant training, seminars, and intense guidance, by self and others
Working space	Usually on-site	Usually on-site
Business Model	Investment, non-controlling amount of equity stake ranged from 2-10%.	Limited or no equity stake, sometimes funding

**Derived from Cohen* (2013), *Cohen and Hochberg* (2014), *Hoffman and Radojevich-Kelley* (2012), *Kohler* (2016), *and Weiblen & Chesbrough* (2015).

The main characteristic of accelerator programs is the duration, which is limited to a time period of about three to six months. After this period startups graduate, often by pitching their business to large audiences of potential investors like venture capitalists and angel investors on a demo day (Cohen S. , 2013; Hoffman & Radojevich-Kelley, 2012). Due to the limited duration of the programs the startups enter and exit the programs in groups, known as cohorts or batches and also referred to as portfolio companies. In this period the startup founders may develop strong relationships and help and motivate each other during the program (Cohen S. , 2013). The cohorts are selected around key dates. Often there is an open application process that attracts startups from a global pool, of which top programs eventually select a very low percentage, sometimes less than one percent (Cohen S. , 2013). For example, Startupbootcamp has over 15.000 applications each year, from which 10 get selected within each of the 15 verticals (De Zeeuw, 2016). The cornerstones of accelerator programs are the intense mentorship and education, which are often a primary reason for startups to participate. Through mentorship sessions the startups also have a unique opportunity to build their social network and to learn about alternate strategies. Most accelerator owners have extensive prior experience as entrepreneurs or angel investors, which make them mentors in several entrepreneurial interest areas (Cohen S. , 2013; Hoffman & Radojevich-Kelley, 2012; Kohler, 2016). Network development is another import aspect

of accelerator participation. Throughout the program the accelerator manager helps startups to absorb and apply the knowledge they assemble through meetings, seminars, and access to a network of entrepreneurs. During the programs the accelerator programs often provide office space including facilities like internet access, and startups frequently relocate to participate in the programs (Cohen S. , 2013; Hoffman & Radojevich-Kelley, 2012). Most accelerators are privately owned by for profit organizations that take an equity stake of 5-6% in the startups participating in the programs in exchange for funding, with no interest in controlling the startup (Cohen S. , 2013; Hoffman & Radojevich-Kelley, 2012). European accelerator programs go up to an equity stake of 8-10% as there is a different investments culture (De Zeeuw, 2016).

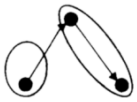
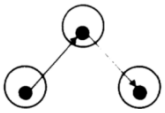
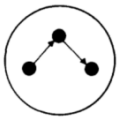
2.2.2 Accelerator programs in the role of corporate interface function

When corporations want to learn from startups they need sufficient absorptive capacity. A corporation's absorptive capacity depends on the individuals that stand at the interface between their organizations and startups. This interface function may be diffused across individuals, or can be more centralized (Cohen & Levinthal, 1990) like in, for instance, a corporation's innovation unit. When the expertise of most individuals within an organization differs considerable from that of an external actor like a startup, there is the need for certain intermediary roles to translate information (Cohen & Levinthal, 1990). Taking this broader to the dimensions of relative absorptive capacity, research and the previous paragraphs make clear that in order to build sufficient absorptive to learn from startups, corporations' interface functions needs to be able to overcome the dissimilarities between their organizations and startups (KPMG, 2014; Weiblen & Chesbrough, 2015). A corporation's absorptive capacity does not only depend on the interface that crosses the extra-organizational boundary to the external environment, but also depends on the transfer of knowledge across the larger organization boundary and within subunits, that may not be part of the entry point for knowledge (Cohen & Levinthal, 1990; Tushman, 1977). Despite that a centralized interface function between a corporation and a startup as well across units in corporations has the potential to balance the incentives of internal and external stakeholders (KPMG, 2014; Tushman, 1977; Van Wijk, Van den Bosch, & Volberda, 2011; Weiblen & Chesbrough, 2015; West & Bogers, 2014), this is no guarantee for an increase of absorptive capacity at an organizational level. Boundary spanning by an interface function alone is not enough, because a

corporation's absorptive capacity also depends on the absorptive capacity of those individuals to whom the innovation is transmitted to (Cohen & Levinthal, 1990).

Organizational units are the main entry point for knowledge (Van Wijk, Van den Bosch, & Volberda, 2011; Tushman, 1977) and differ in their absorptive capacity (Jansen, Van den Bosch, & Volberda, 2005), making one unit more suitable than another to fill in the interface function role. Besides an internal intermediary, also external intermediaries can be used as an interface function (Spithoven, Clarysse, & Knockaert, 2011). According to previous research, accelerator programs have the potential to act as intermediaries, making interorganizational collaborations between corporations and startups more efficient and effective (Hoffman & Radojevich-Kelley, 2012; Kim & Wagman, 2014; Kohler, 2016). This research primarily focuses on the role of accelerator programs in balancing and aligning the interests of both parties, but does not address how this affect corporations' ability to learn from startups.

TABLE 3
Intermediary roles at the network level*

Term	Features	Graphical representation
Gatekeeper	Crosses the extra-organizational boundary: employee that acts as a gatekeeper for this or her corporation and can decide whether or not to grant access to a startup.	
Matchmaker	Crosses the extra-organizational boundary: the matchmaker is an outsider with respect to both the initiator of the relation and the receiver of the relation and can make communication between corporations and startups possible.	
Organizational liaison	Crosses the larger organization boundary: the organizational liaison can communicate between the corporate accelerator program and other corporate business units, making coordination between business units and the startups in the program possible.	

**Derived from Cohen and Levinthal (1990), Gould & Fernandez (1989), Kohler (2016), Long, Cunningham & Braithwaite* (2013), *Tushman* (1977), *and West and Bogers (2014).*

However, due to their position between corporations and startups both corporate accelerator programs, as internal intermediaries, and external accelerator programs, as external intermediaries, can fulfil several intermediary roles that can make a contribution to this learning ability. Brokers, bridges, and boundary

spanners facilitate transactions and the flow of information between people or groups separated or hindered by some gap or barrier (Long, Cunningham, & Braithwaite, 2013). These intermediary roles represent specific structural positions or social roles that actors can occupy in the network of corporation, startup, and accelerator program. Individuals can also perform a combination of roles (Gould & Fernandez, 1989). An overview of the roles is given in table 3.

2.3 Conceptual model

Based on this theoretical framework the research question is transformed into a schematic representation. The conceptual model in figure 1 shows the relationships between the constructs that are part of this research.

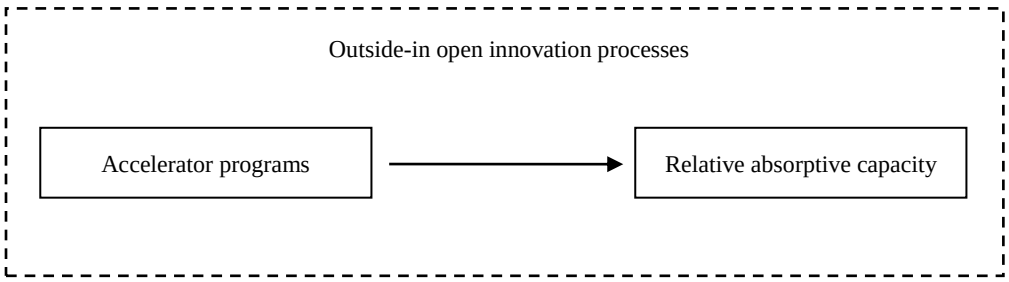


FIGURE 1. The conceptual model.

3 METHODOLOGY

Given limited theory about the contributions of accelerator programs to relative absorptive capacity, an inductive multiple-case study research was conducted. This method is well suited to get a profound and integral understanding of this complex contemporary social phenomenon that is not addressed well by extant theory (Eisenhardt, 1991; Verschuren & Doorewaard, 2010; Yin, 2014). Because the open innovation context has great influence on how the phenomenon presents itself (Christensen, Olesen, & Kjær, 2005), making it hard to isolate it from its environment (Hutjes & van Buuren, 1996; Verschuren & Doorewaard, 2010), this method is likely to yield more accurate data, and by examining multiple cases the results will be more generalizable than in the event of a single case (Eisenhardt, 1991; Yin, 2014). Also, this research method is more flexible in its approach (Bryman & Bell, 2015; Yin, 2014), which was helpful as some adjustments were made while conducting the research as a result of unforeseen outcomes. For example, the role of intrapreneur in residence, also referred to as entrepreneur in residence, was not identified in the literature review in advance.

The setting for this study is the Netherlands, which is appropriate because there is an active and emerging startup ecosystem with presence of multiple accelerator programs, and the collaboration between corporations and startups to enhance innovation is a topic that is up to date.

3.1 Case study design

This research holds an one-way learning perspective from a corporate point of view which is consistent with Chesbrough's (2003) research, who approaches open innovation from the point of large, incumbent organizations. The organizational level is emphasized as open innovation is expected to have an impact on the performance of an organization as a whole and is based on a business model, which is by definition centred on a single organization (Amit & Zott, 2001). The unit of analysis is the network level in which the collaboration between a corporation and a startup with presence of accelerator program in the context of an outside-in open innovation process is the 'case'. The cases are bounded by a time boundary (Yin, 2014) in which the cases begin at the pre-acceleration phase during which startups are selected, and ends in the post-acceleration phase when the active role of the accelerator program stops. This implies that the time period covered by the case

study has clear boundaries but is not fixed. By using a multiple-case replication design the research is more robust and analytic conclusions are more powerful, than would be the case with a single-case design, thereby strengthening external validity (Verschuren & Doorewaard, 2010; Yin, 2014).

3.2 Case selection

This research focuses on a causal relationship so the aim was to select cases with maximum variation (Bryman & Bell, 2015; Verschuren & Doorewaard, 2010). Two categories of cases were selected, two cases with presence of an external accelerator program, predicting similar results, and one case with presence of a corporate accelerator program, predicting contrasting results because the theoretical background shows that corporate accelerator program, in contrast to external accelerator programs, also meet corporate objectives (Heinemann, 2015; Kohler, 2016), which might result in corporations to select startups as collaboration partners that are better connected to the corporation's activities. By pursuing two different patterns of literal replications and theoretical replications, the contributions that different types of accelerator programs make will be exposed (Yin, 2014).

In order to identify potential cases a three-phase selection approach was used in which the criteria were derived from the research question (Bryman & Bell, 2015; Yin, 2014). This resulted in the three cases that are part of the research, as mentioned in table 4.

TABLE 4
Selected cases

Accelerator program	Type of accelerator	Corporate partners*	Corporate activity	Startups
ING Innovation Studio 2.0	Corporate accelerator	ING (3)	Bank	Whydonate CheckMetrix
Startupbootcamp, Smart City & Living	External accelerator	Eneco (48) Achmea (8) ING (3) TomTom (166)	Utility Insurances Bank Technology	twingz
Rockstart, Smart Energy	External accelerator	Eneco (48) Alliander Groep (103)	Utility Network operator	Bleeve Capacity Energy

**Including The Elsevier Top 500 ranking (Elsevier, 2015)*

In the first phase the accelerator programs were selected using the program characteristics as mentioned in table 2. For the external accelerator program category Startupbootcamp and Rockstart were selected as these are the largest and most well-known external accelerator programs active in the Netherlands (Seed-DB, 2016; StartupInc, 2014). Also, these programs are internationally active with a generic approach, thereby strengthening external validity across Dutch borders. Moreover, these programs are more mature than several alternatives like The Port XL accelerator program that has recently started and has no graduates yet, which increased the opportunity to locate 'finished cases'. By using the same criteria for the case selection in the corporate accelerator program category, the number of potential cases in this category was narrowed down to one as the ING Innovation Studio is the only program to fit the criteria in the Netherlands (Corporate Accelerator DB, 2016). In attempt to add a second case in this category the researcher has tried to gain access to corporate accelerator programs in nearby countries, like E.on agile (Düsseldorf, Germany) and The Unilever Foundry (London, United Kingdom), which failed despite several attempts. In order to compensate this shortcoming, the unique ING Innovation Studio 2.0 case was analysed more thorough.

In the second phase also the corporations where selected a priori, which is advised when there is a large number of eligible candidates (Bryman & Bell, 2015; Yin, 2014). The Elsevier Top 500 (Elsevier, 2015), which gives an overview of the 500 biggest companies in the Netherlands arranged by annual turnover based on data collected by the Dutch Chamber of Commerce, was used to clearly define a pool of corporations. The list contains corporations that are under supervision in the Netherlands, which may also relate to subsidiaries of foreign concerns, that have at least one hundred employees (Elsevier, 2015). In the third phase this list was compared with partners of Startupbootcamp and Rockstart, which were identified with help of Internet searches and visiting the accelerator programs' websites, bringing it down to a shortlist of corporations. As mentioned, the context is relevant in open innovation (Christensen, Olesen, & Kjær, 2005), so a variation of the corporations being part of the research was desirable in order to enhance external validation. This was done by selecting corporations that have different activities, which was challenging as the last programs from the external accelerator programs, Smart City & Living by Startupbootcamp and Smart Energy by Rockstart, have great overlap in their targeting segments, resulting in similar types of corporations as partners of the programs. A key advantage of this research is that all three accelerator programs ran during the recent time period in 2015 or 2016 and are all finished, limiting any memory bias and creating the opportunity to analyse

the programs as a whole. Another advantage is that there is some overlap as corporations like ING and Eneco have experience with multiple accelerator programs, which made it possible to compare.
The startups were not selected in advance, as it was expected that they would be identified during data collection at the accelerator programs and the corporations, which proved to be correct.

At the start of the data collection the researcher evaluated each potential case with the use of LinkedIn in order to identify those cases that could be approached by an introduction of the researcher's personal professional network. The primer reason for this convenience in the approach of potential cases is that getting access to complete cases was expected to be hard as the unit of analysis consist of three parties, so an introduction was helpful. After getting access to the first corporate or accelerator program employees within a case, these persons were activated to gain access to other data sources, like a snowball approach (Bryman & Bell, 2015).

3.3 Data collection

Several data sources were used: documentation, including corporate materials, media, including newspapers, business publications, and Internet sources, observations by the researcher through attendance at multiple events like a pitch event and a demo day, interviews with startup (co-)founders and employees of accelerator programs and corporations, and informal follow-ups with e-mails and phone calls. The most important source were the 45-75 minute semi-structured interviews that followed a case study protocol (appendix A) which was drafted before the interviews commenced. The use of a protocol increases the reliability of the case study research through consistency and guided the researcher in carrying out the data collection from the cases (Bryman & Bell, 2015; Yin, 2014).

In each case there was at least one person interviewed from all three parties in het unit of analysis. Within the corporations there are two main perspectives, the innovation unit and the business unit perspective, adding up to four types of informants. These types of informants needed were identified at forehand, the category "other" was added afterwards to add roles that were not identified at forehand like the intrapreneur in residence. Table 5 gives an overview of the interviews conducted and also indicates the titles of the informants and what type of informants they are.

TABLE 5
Overview of interviews

Accelerator program	Title of informants	Type of informant*
ING Innovation Studio 2.0	Co-founder | Innovation Driver @ ING Innovation Studio	Accelerator
	Sustainability Advisor @ ING	Business
	Sustainability Consultant @ ING	Business
	Tribe Lead Experience Zakelijk @ ING	Business
	Head of the ING Customer Experience Center @ ING **	Innovation
	Customer Journey Expert @ ING | Intrapreneur in Residence @ Startupbootcamp **	Other
	FinTech Transaction Manager @ ING	Other
	Co-founder | Product owner @ Whydonate	Startup
	Co-founder @ CheckMetrix	Startup
Rockstart, Smart Energy	Program Director Smart Energy @ Rockstart	Accelerator
	Strategy Consultant @ Alliander	Business
	Senior Innovation Officer @ Eneco | Mentor Smart Energy Accelerator program @ Rockstart **	Innovation
	Founder @ Bleeve	Startup
	Founder @ Capacity Energy | Investor / Mentor Smart Energy Accelerator program @ Rockstart	Startup
Startupboot-camp, Smart City & Living	Director of Partnership Corporate Startup Engagement & Innovation @ Startupbootcamp	Accelerator
	Co-founder @ TomTom	Business
	Strategist & Innovation manager @ Achmea / Interpolis | Mentor @ Startupbootcamp	Innovation
	Product Developer @ Eneco | Intrapreneur in Residence @ Startupbootcamp	Other
	CEO / Founder @ twingz	Startup

**This is the primary role of the informant, many informants have multiple roles*

***These informants were also interviewed concerning their involvement in the partnerships with Startupbootcamp*

In order to get high quality data primarily senior level informants were interviewed like accelerator program managers, startup (co-)founders, and managers of the corporate innovation and business units. One of the weaknesses of interviews are different types of bias. By having multiple interviewees from different perspectives, data triangulation is applied so the consistency of the findings can be determined, thereby strengthening the construct validity of the case studies (Verschuren & Doorewaard, 2010; Yin, 2014). In total 19 interviews were conducted, which is enough to answer the research question and is qualified sufficient because data saturation is reached, the last few interviews did not provide new data, and it exceeds the 15 interviews boundary, what is the minimum size for case study research (Bryman & Bell, 2015). Also this was an achievable number of interview during the time period the research was conducted.

The semi-structured face-to-face interviews were conducted in the natural environment of the informant. With the exception of the interviews with the CEO / Founder @ twingz and the Sustainability Consultant @ ING, all interviews where in Dutch and the quotes used are translated to English. Interviews were recorded using two recording devices (one for back-up), to provide a more accurate rendition (Yin, 2014). The researcher, who was also the interviewer, made notes. At the request of a few informants the interviews were done by telephone, for which also two recording devices were used. All interviewees except one gave permission for recording and none of them appeared uncomfortable. Most interviews were transcribed within 24 hours of their occurrence to assure high quality. All informants were given the opportunity to participate anonymous at an individual or case level, of which none of the interviewees made use. Participants were also requested to review the draft case study report in order to increase construct validity (Yin, 2014). This led to a few minor adjustments.

To further enhance data triangulation also documentation, media, and observations were used. These sources were helpful to corroborate and augment evidence from the interviews (Yin, 2014) and were useful for case descriptions and accuracy. All raw data is included in a case study database in order to make the data retrievable for other persons to inspect. An overview of the data sources used is given in appendix B. The data is managed systematically, so the research can be reproduced, thereby increasing reliability. In order to further increase the reliability of the information and heighten construct validity, a chain of evidence is maintained within this database (Yin, 2014).

3.4 Data analysis

The cases are analysed according to the two-phase hierarchical method (Verschuren & Doorewaard, 2010). In the first phase the independent cases are analysed as if there are a ‘whole study. In the second phase the results of the first phase served as input for a comparative analysis of all three cases in order to find explanations for similarities and differences between the individual cases (Verschuren & Doorewaard, 2010; Yin, 2014). This is done by a qualitative cross-case analysis that is conducted on all types of data sources by applying selective coding to create word tables that display data from the individual cases according to uniform categories (Bryman & Bell, 2015; Yin, 2014). To create these categories the analysis process follows an analytic

induction strategy for data analysis, meaning that the conceptual model has shapes the data collection plan and the analytic priorities (Bryman & Bell, 2015). This resulted in a taxonomy that is included in appendix C, which was fine-tuned during coding.

Using this same method, also the aforementioned two categories of cases are used in order to analyse if there are differences between external accelerator programs and the corporate accelerator program. This type of categorizing makes it possible to analyze whether different cases appear to share similar profiles and therefore are replications of the same type of general case, or should be considered as contrasting cases as predicted (Yin, 2014). To ensure data triangulation all topic categories of the taxonomy were placed in a schematic overview in which they are confronted with the data sources (Verschuren & Doorewaard, 2010). The analysis is also included in the case study database and is part of the chain of evidence to heighten construct validity and to further increase reliability (Yin, 2014). The schematic overviews for all cases are included in appendix D. The findings are composed as a cross-case analysis with a linear-analytic structure because the thesis committee is the main audience (Yin, 2014).

4 RESULTS

Before addressing accelerator programs and the contributions they make to relative absorptive capacity, the findings on the learning objectives of corporations and the role relative absorptive capacity has in the cases will be appointed.

4.1 Corporate learning objectives

All corporations mention multiple motives for partnering with accelerator programs or having an own program. These motives are quite diverse, but there is also overlap. Some examples of goals are as follows: realizing a more innovative culture, getting or maintaining an innovative image to both the insight- and outside world, and scouting for talent. When focusing on learning motives, two main goals remain. On the one hand companies like Achmea, Alliander, and ING want to learn from the several methodologies that accelerator programs educate to startups and apply in practice like the Lean Startup (Ries, 2011), in order to optimize their own innovation process in terms of speed and effectiveness and/or to have more explorative innovations as outcomes of this process in terms of the degree of innovation and the number of innovations. ING, for example, became partner of Startupbootcamp in order to learn how to run an accelerator program and started the ING Innovation Studio to develop and optimize PACE, which is ING's structured innovation process: a combination of Design Thinking, Lean Startup, and Agile Scrum methodologies. On the other hand, the accelerator programs serve as a 'window of innovation'. Through the programs corporations tap into the startup ecosystem to get acquainted with business opportunities and developments in their markets, and to experiment with these opportunities. Given the unit of analysis of this research the focus is on the latter.

4.2 The role of relative absorptive capacity

The findings show that the dimensions of relative absorptive capacity play several roles in the cases. During the interviews also other elements were mentioned, like for example culture and executive support, that seem to play a role in the collaboration between corporations and startups. Although these elements seem relevant to the subject of relative absorptive capacity, they are out of the scope of this research.

4.2.1 Similarity of both organizations' knowledge bases

Findings show that during the obtaining phase the corporate employees responsible for scouting tend to focus on their core business for the assessment of the potential value of startup innovations. For example, the Strategist & Innovation manager @ Achmea / Interpolis | Mentor @ Startupbootcamp said the following about the startups that were assessed:

> *"Well, for instance Virgla is an app with which you as a customer can follow some kind of channels of brands, there were a few things which help you to easily find a parking space, and there was a kind of app that helps you to access some kind of website for hotels where towels can be ordered and stuff like that. So in that sense, it is not very close to where we could possibly do something with it."*

Corporations also try to find out if the specialism that the startup is offering matches the corporation's activities, like the Founder @ Capacity Energy | Investor / Mentor Smart Energy Accelerator program @ Rockstart explained:

> *"You are often in such a detailed field…..you really are an expert , you know , the majority of startups focus on one thing…..one specialty, then you quite quickly are, compared to a corporation, you are the expert and then the question is: does it fit within the package they want to offer?"*

When innovations do not match the core business, innovations need be closely related to the core business in order for corporations to consider them. The Co-founder | Innovation Driver @ ING Innovation Studio said: *"We initially look in the field in which we operate , which is financial services. I would love to make a crossover to another industry, but it must still be related."* With corporations searching within their current or related businesses, they do not experience limitations when evaluating the importance of the innovations for their own organizations. During the obtaining phase corporations already take the commercialization phase in consideration as they determine the relevance of innovations by assessing the potential value for their existing customer base. In all cases where startups are talking with corporations for possible collaboration, the startups are active in the same industry and have overlap in their knowledge of this industry. During the interviews no knowledge gaps were identified that were an obstacle for interaction between corporations and startups.

4.2.2 Similarity of both organizations' structures and compensation policies

During the obtaining phase the corporate employees responsible for scouting innovation say that they are positive about working with startups due to their speed and agility. They often have contact with the founders of the startups who have the ability to make decisions and are eager to work with the corporations. An

exception is the immaturity that corporations experience; for example, in two cases startup teams did not meet agreed deadlines. The other way around startups experience multiple difficulties when engaging with corporations like with the higher formalization, more hierarchical layers, and higher risk aversion.

The high degree of formalization in corporations makes it hard for startups to gain access to corporations. As a result of the size and structure of corporations, startups, and sometimes corporate employees themselves, do not know who to talk to within corporations or what the relevant developments and activities in the different business units are. Other times it is hard to gain access to corporations like the Co-founder | Product owner @ Whydonate, that is now collaborating with ING, explained:

> *"In the past we have also tried to approach corporations, but did not get any response, or hardly any response…..sometimes just a friendly email back like: 'currently we are just not concerned with it < donation platforms > '…..companies like KPMG, Aegon, that every year participate in many marathons to raise money, for which we would really be the perfect platform."*

Once startups do get access, they need to make formal appointments, that sometimes need to be scheduled weeks in advance, like the Product Developer @ Eneco | Intrapreneur in Residence @ Startupbootcamp explained:

> *"The main difference, of course , but that is obvious , startups are small, so that can make decisions much faster. Are much more decisive too…..That's a big difference…..You also notice that when these startups wanted to make an appointment, that could take place this afternoon , but within Eneco; agendas are often already full, so it is usually only possible a few weeks later. That is an issue, because the program lasts twelve weeks. Then, waiting three weeks is very long, it is a fourth of your Startupbootcamp time."*

This can become a problem for startups, like an example by the Program Director Smart Energy @ Rockstart on the same topic illustrates: *"Then they < corporations > say: yes, let's ask a secretary to make an appointment and see who should be present, then we have an appointment in two months to explore it. Forget it! A startup is dead in two months!"*

Once access is gained the hierarchical layers and the higher risk aversion are the next challenges for startups. The main point of entry are the innovation units, through which the startups try to gain access to the corporations' business units that can bring innovations to customers. Innovation managers in turn are very reluctant to bring innovations to the business, especially when it concerns early-stage startups. The Senior Innovation Officer @ Eneco | Mentor Smart Energy Accelerator program @ Rockstart explained:

*"When you look at the collaboration with startups, then you obviously have the important do's and don'ts. Things you should not do, but you are a corporation and you have corporate tendencies…..on our part you want to impose rules, you want to help decide what their strategy will be. So to many interferences and helping to little. We say that we should not do that and we do it anyway…..it is really human behaviour, depending on who is involved, but as a result of our structures, then you see that it slowly crawls back. So you need a very large sh*t umbrella, or a gatekeeper, or whatever you call such a person, that is in between and prevents this…..we as a department should do this, but within our department we are doing that as well…..often they have a good product, an innovation that we could use, but even then we are going to, we want reports, a financial statement, we want a business plan…..despite that we are such an innovative unit, between quotation marks, you see that this comes back…..we sometimes say: 'there is a kind of dragon in this building'."*

Innovation units want to keep the innovation apart as they are afraid that the business will kill it, because when, for example, innovations are brought to the business they are being assessed using business metrics. This can be a threat to the chances of an innovation when it cannot live up to these standards. The Co-founder | Innovation Driver @ ING Innovation Studio said: *"If you are going to assess an early stage startup or an early stage internal team on the same KPI's as a business that has existed for twenty years, you are going to f%$#* it up"*. The Founder @ Bleeve experienced this when engaging with employees of a corporation in utilities (not being Eneco) that were very much in the corporate pattern of focusing on financial returns. Multiple startups mention corporations that ask detailed plans in which there is a profitable business case and some track record, whereas the startup just want to get started and find out along the way. Corporate employees seem reluctant in taking these kind of risks. As the Program Director Smart Energy @ Rockstart said it: *"a corporation is obviously a large organization that focuses on managing and minimizing risks"*. Also ING employees agree on their business units not being used to play to win, but that they play not to lose in order to defend their existing business. This high risk aversion is a manifestation of the compensation policies used by corporations, which hinder innovation. The Head of the ING Customer Experience Center @ ING explained this: *"look, the selection and promotion policy within ING over the last twenty years is focused on promoting people that simply did not made any mistakes".* Also when risks are relatively small corporations seem unwilling to take these risks. The Co-founder @ CheckMetrix appointed the following: *"at the moment that a minor risk needs to be taken as of, does it work or does it not work, they surely are reluctant, despite the tiny amount < of investment > we propose"*.

Concerning the hierarchical layers, startups believe that they often talk to corporate employees that cannot bring them any further because their counterparts do not have authority. More experienced startups take this

into account like, for instance, the CEO / Founder @ twingz who said: *"It is about to find out who are the relevant decision makers without being impolite or rude"*. Also, the Founder @ Bleeve explained:

> *"They are people who actually do not have the autonomy to make such decisions. Yes, that is just a real big turnoff , then you are just dealing with the wrong person. And once you find that out, than it is just end of story. We are not going to spend time on that either. If you are not talking with the right person, when it appears that his boss thinks otherwise. At one point we said: 'we think it is a good idea when the Managing Director Netherlands will join a meeting'. Well, then you immediately see all of them lean back. These are signals, then you notice, that you are not that important for them after all…..perhaps that such a big chief is also not able to gear up that easily, but at least he can fix it. If he wants to go a certain direction, then it is going to happen."*

In this quote also the topic of priority emerges. Within the business units an innovation has to compete with daily business. When an innovation is interesting for a business unit, the business unit needs to allocate resources like people, time, and budget, which often goes at the cost of other items on the corporate agenda. On the topic of obstacles in collaboration with startups the Co-founder | Innovation Driver @ ING Innovation Studio commented:

> *"Just the legacy, you simply have your existing. The capabilities and resources that you need to work together are still scarce. If it does not get the full priority, look at it as your own relationship, if you spend ten percent of your time on it, is it really going to lift of? Or do you need to spend one hundred percent of your time? The truth lies in the middle: one hundred percent is not going to work, but doing it on the sight is something else than conquering the world together."*

Altogether, startups experience multiple hierarchical layers that are involved in the decision making process, sometimes even ending up abroad, and they end up talking to several corporate employees that often do not have the mandate or the courage to make decisions, what frustrates them. The startups want to move faster than the corporations is able or willing to, and sometimes startups do not have this time as they run out of money. Of these shortcomings, corporate employees are well aware, for instance, the Strategist & Innovation manager @ Achmea / Interpolis | Mentor @ Startupbootcamp said: *"Slowness and complexity from our side. Misunderstanding of what it means to work with large companies from the other side".* And the Head of the ING Customer Experience Center @ ING said: *"Look, those startups do not mind that we are slow, they mind us being unclear. And because we can be clearer , we hope to improve our reputation and to be an attractive match for startups to work with."*

When startups move forward in the process the formality further increases. Once an innovation gets to the integration phase corporations apply heavy checks on compliance, security and/or supplier qualification. Many corporate units get involved like legal, IT, procurement, etc. Sometimes startups have a full-time job in

order to meet the standards. About the integration of the Whydonate platform at ING the Sustainability Advisor @ ING explained:

> *"The technical part of how we arrange the whole platform…..That of course involves a lot of compliancy….. what makes it difficult for such a platform is that you collect certain data…..for Risk and Compliance all alarm bells turn red…..and also the whole procurement project…..you need to go through a whole supplier qualification check at Procurement and fill in all kinds of information and data…."*

Sometimes startups are not able to deliver at all, which was the case with startup 24sessions that could not meet up to the compliance check of Achmea. At that point a potential collaboration stops.

4.2.3 Similarity of both organizations' dominant logics

Moving on to the similarity in the dominant logics of corporations and startups the findings on corporations' ability to bring innovations to the business and commercially apply them focus on the subjects of maturity, scalability, and the alignment with the core business and existing business model. During the obtaining phase, before corporations decide to acquire an innovation, there are several interactions or feedback loops between corporations and startups concerning the commercialization phase.

As mentioned in paragraph 4.2.1 the core business is the primary starting point for corporations when scouting for startup innovations due to their dominant logic. The preference for mature and scalable innovations are also example of this dominant logic. Maturity and scalability do not necessarily go in hand in hand, but the findings indicate that it is important for corporations that innovations are business ready and can be applied to markets of considerable size, like the existing customer base. For example, the Senior Innovation Officer of Eneco said:

> *"Look, parties < startups > that participate in accelerator programs, that is what you also see at Rockstart, they are not very mature, and that makes sense, because when you are mature you are not going to participate…..it is really early stage and many have an idea or just a small product…..maturity is a bottleneck…..if we are in the transition and we want to make speed, than you actually want them one phase further…..just a proof of concept or maybe just one or two customers…..we can do it < guide startups to maturity > but do you want to put in the time and effort?.....you want to have a few < early-stage startups > but you also want to have some scale-ups….and at one point we also acquired some scale-ups en what you see is that at some point that works quicker"*

The FinTech Transaction Manager @ ING also explained this:

> *"What you see is that many of those FinTechs are still relatively small, and eventually, to connect the scale of ING to the technology of such a FinTech, at the FinTech side you simply need capacity for implementation. And that is something we run into at the FinTech side. So, the value proposition can be interesting and it all looks fantastic, and the quality seems ok when you test the product or service, but how*

to scale up and what eventually is necessary to accomplish that, also from the FinTech side that is sometimes a problem because often they are still small teams."

The Co-founder @ CheckMetrix experienced this when talking to multiple multinationals:

"The problem is…..with this proposition we try to do business with a lot of large parties that are mainly looking for scale. And we do not have that. So it is a bit of chicken-and-egg debate, like: 'boys, we actually hoped that you were a little bigger' and then we say: ' if you give us this deal, then we are a little bit bigger'."

Next to the maturity and scalability, the degree of innovation is an element which is taken into consideration by corporations. Within ING the 'three horizons of growth' (McKinsey, 2009) are used to distinguish the degrees of innovation. Horizon three innovations cannot be brought to business as the Head of the ING Customer Experience Center @ ING explained:

"It < horizon one > fits into their approach of evolution, because they < the business > get feedback from customers and act on that, there product innovations, product improvements do emerge. And then in adjacency , for example, they have the new process for. These are the horizon two products. But the deployment of a robot as a receptionist in an office, which could then replace all receptionists throughout ING, that is not an experiment that you conduct on the Maliebaan in Utrecht < location of an ING office >."

On top of the arguments mentioned in paragraph 4.2.2 the degree of innovation is another argument for the innovation units to keep startups apart from the business units in order to protect them. Due to the limited imagination business units have, more explorative, or even disruptive, innovations cannot be brought to the business. Again the Head of the ING Customer Experience Center @ ING explained: *"those cannot be placed into the business, then they die. You need to protect them"*. But not only corporations focus on the corporations' current business. In order to increase their chances of collaboration, also startups focus on existing business. For instance, both Bleeve and twingz are trying to partner up with Eneco for two main reasons: Eneco has a large customer base and Eneco is in the transition from being a supplier and transporter of centrally generated power to becoming a service provider in the area of centralized and decentralized sustainable generated energy. Both startups see possibilities to become part of the services that Eneco is going to provide to its customers. The CEO / Founder @ twingz explained:

"So you have to find this out < if it is a personal interest > and then also have find out of it is an innovation kind of project, and a pilot, or if it is really connected to a business line, or maybe more business lines. So if it is a business case where you can up sell something, where you can < ? > something, where you can have an existing customer base that you can address or that it is an idea of some, let's say the financial services market, there is a lot of companies there who are looking for new business models and they try to find new business models with the help of technology and if you look for instance the pilot project with Achmea is completely different in value to scalable up selling project with Eneco, in business value…..with existing business models or with business models that those companies have already found out are working for them and are committed to…..If you look at the numbers, there are 250.000 or 257.000 existing Toon installations,

if you can extend this system with additional functionality and you can ask a reasonable price point for that, you can address all those consumers on the digital channel they are connected to, you know that they are interested in the energy management of their homes. So it is completely different to, let's say a company like Achmea, snooping into the market of digital housing and of creating a prototype for burglary and fire alarm for residential customers homes, without a installed base with being a kind of conventional financial services…..Because, they would not have, in the case of Achmea, they would not have a business model related to that, because they have their insurance contract and they are currently thinking making a kind of pay as u drive analogy for the home market, a kind of pay as you leave thing. But there is no commitment there, there are no pilots done there, so it's at the beginning. And if you start asking them: when do you aspect to get this sold, and would this be an insurance contract, who would be the operator of it, should we be the operator of it? Then, no answers, no real answers."

So, both the corporations and startups in the cases focus on the core business of the corporation. Concerning the business model the Head of the ING Customer Experience Center @ ING explained

"I think that the most important question you have not asked yet is: 'What is your model?'…..What is the relationship…..For a startup to be successful it, of course, wants a launching customers en it wants to establish exponential growth. And that exponential growth can….depends on, where is your scale?.....Is the startup a sales channel of ING via startup to customer or is ING the sales for the startups. Now, then the frameworks are very important, because when you do not set up your business model on that, when you as ING make the wrong choice of relationship, than it is never going to succeed. When you are hatch for the startup to your customer, you can never use a transactional model. While, when you as a customer access the end customer via the startup, then you can use a transactional model. So they provide a service and we checkout per customer. So the business models are very dependent on the relationship that you build. And many startup turn that around, they have a certain image of their business model and try to, like a sort of square plug, put it in a round hole, that does not work.

When collaborating the corporations can contribute their complete ecosystem, including customers. The startup often does not have any customers, it often only has a solution. So there seems a need for startups to adjust to the business model of the corporation. For example, a successful example in the cases is Whydonate that uses a white label proposition to work with ING. Also Achmea uses the same model to work with the startup that delivers the AutoModus app.

Again, the elements mentioned in this section do not only occur in the commercialization phase. Also in the obtaining there are many interactions between corporations and startups in order to find an engagement method.

4.3 Accelerator program characteristics and roles

Before describing how the accelerator programs in the cases contribute to the described findings about the role of the relative absorptive capacity dimensions, the characteristics of the three accelerator programs will be described and the several roles of the people involved have.

4.3.1 Characteristics of the accelerator programs

Because both external accelerator programs show great similarities they will not always be appointed to separately, but as a category. Table 6 gives an overview of the characteristics of the three accelerator programs that are part of this research. The ING Innovation Studio is owned by ING and part of the ING Innovation Office. Its primary objectives are the improvement of ING's innovation process and running experiments that must result in validated business opportunities. Both external programs are privately owned and positioned outside the organizational boundaries of the corporations with whom they engage, as presented in figure 2. Their primary objective is to bring the startups that participate in the program to their next investment round. All programs focus on early stage startups and a specific vertical, which is an intersection between an industry and IT. This, in contrast to theory by Kohler (2016) and in line with Cohen and Hochberg (2014). However, the vertical of Startupbootcamp is broader than those of the other programs. Whereas the external accelerators run multiple programs, the ING Innovation Studio runs one single program. The programs have a duration between three and six months. Each program works with cohorts of startups, the external programs work with ten startups, the ING Innovation Studio 2.0 program had three internal startups that consist of ING employees, and three external startups. The internal startup teams are outside of the scope of this research, because this is another unit of analysis. Every program provides education and mentorship, additional professionals services, and networking opportunities. The programs help startups to build, validate and scale their business in order to find the best (international) market fit by providing education on general topics like lean methodology, agile & scrum, growth hacking, pitching, fundraising, business model canvas, design, product development, sales, business development, data analytics, rapid prototyping, PR, marketing, financial management, etc. There are a few minor differences, but overall the programs provide a standard set of workshops that are not industry-specific and on top of that there is some customized offering depending on the needs of the startups. Besides this education the programs provide additional professional services that have overlap with the topics on which startups are educated. This includes financial-, fiscal-, and legal advice, and also fundraising-, PR-, communications- and marketing support, etc. Programs also offer pre-mediation sessions and focus on both personal and team development. The resources of the external programs transcend that of the Innovation Studio.

TABLE 6
Characteristics of accelerator programs in the cases

Characteristics	ING Innovation Studio 2.0	Rockstart Smart Energy Accelerator program	Startupbootcamp, Smart City & Living
Ownership	Owned by ING (founded 2015)	Privately owned (founded 2012)	Privately owned (founded 2010)
Selection	Competitive, cyclical	Competitive, cyclical	Competitive, cyclical
Vertical	FinTech: intersection of IT and financial services	Intersection of IT and energy	Internet of Things, Open Data, Smart Health, -Building, -Urban Planning, -Waste Management, -Home, -Mobility, -Retail, -Government, -Grid, -Energy, -Agriculture
Venture Stage	Early stage	Early stage	Early stage
Duration	6 months (September 2015 – March 2016)	100 days (January 2015 – April 2015), 180 days since 2016	3 months (April 2016 – July 2016)
Cohorts	3 internal and 3 external startups (4 in the 3.0 program)	9 startups (normally 10 startups)	10 startups
Education and mentorship	Relevant training, seminars, and intense guidance, by: a team of three accelerator program mentors called Innovation Drivers, and over 30 mentors, a mix of experts from ING business units and outside ING	Relevant training, seminars, and intense guidance, by a team of three accelerator program employees, and over 75 mentors; a mix of investors, corporate partner employees and entrepreneurs from the industry	Relevant training, seminars, and intense guidance, by a team of accelerator program employees, and over 150 mentors; a mix of investors, corporate partner employees and entrepreneurs from the industry
Professional services	A team of students provides support on marketing and design and there is a resource pool with external experts.	The Rockstart team of 40 people that support several programs and formats is accessible for support. Also there are external partners.	Startupbootcamp provides several sponsored services with external partners and their own organization.
Networking (conditions)	Access to ecosystem through mandatory use of working space and organizing multiple events.	Access to ecosystem through mandatory use of working space and organizing > 140 events.	Access to ecosystem through mandatory use of working space and organizing > 70 events.
Working space	Six months working space at the ING Customer Experience Center (ING Acanthus building).	Six months working space at one of the Rockstart Spaces in Amsterdam.	Six months working space at the Startupbootcamp office in Amsterdam (B. Amsterdam).
Priorities	Improvements of innovation process and running experiments	Bringing startups to the next investment round	Bringing startups to the next investment round
Seed capital / funding	Up to € 50k cash investment and an undefined in-kind investment. Investment in the form of a convertible note, so equity stake in not predefined	Up to € 20k cash investment and an € 55k in-kind investment in exchange for 8% equity.	Up to € 15k cash investment and an € 450k in-kind investment in exchange for 8% equity. Possible additional funding up to € 70k in the form of a convertible note.
Other	Alumni support	Alumni Program that provides support	Access to Alumni Growth Program and global network

The programs provide access to their ecosystems that consist of corporate partners, other (alumni) startups, a networks of local and international investors, experts, and other relevant stakeholders. The corporate partners of the Innovation Studio are non-financial partners, whereas the partners of the external accelerators are active in the vertical industries. Access to the ecosystems is provided by creating conditions that facilitate startups in building a relevant network within and outside the programs. For example, all programs have made the use of the provided working space mandatory. Under certain conditions this working space can still be used after the program. All program locations have central meeting points that stimulate interaction like restaurants, a ping-pong table and a central coffee machine. In addition, all programs organize events, like speed dating sessions to connect with (potential) mentors, networking drinks, pitching events, peer-to-peer sessions, training, workshops, investor diners, conference visits, etc. All programs conclude with a demo day, at which in case of the external programs hundreds of investors, mentors, and press are present to see startups pitch. External programs have higher focus on involving corporate partners, for instance by organizing partners events like startup pitches and round table sessions at the corporations.

All programs make cash investments but use different constructions. The Innovation Studio uses a convertible note to make an € 50.000,- investment. The first € 25.000,- is given upfront, the rest of the amount after the achievement of certain milestones that are determined by startups with help of mentors. Rockstart invests up to € 20.000,- whereby the program partners like corporations and investors become shareholder of a fund of the ten startups that are in the program. Since this no peer-to-peer investment the risk is spread. On top of the initial cash investment Startupbootcamp invests € 15.000,- and has the opportunity to make an additional investment by a syndicate of angel investors from the Startupbootcamp network in the form of a convertible note, which has a maximum amount of € 70.000,- per startup. In addition the programs make an in-kind investment which includes all the facilities provided like the office space, legal and fiscal support, education, etc. Rockstart and Startupbootcamp each ask 8% equity in exchange for the cash- and in-kind investment. As the Innovation Studio uses a convertible note, the equity stake is not predefined.

4.3.2 Roles of the people involved in accelerator programs

Many different types of people are involved in the cases examined. Some roles are present and equal for all programs, like the startup teams, the external investors, and the experts or trainers. Startup teams focus on the development of their innovation and often try to find a launching partner and/or investors. The external investors can have multiple roles that do not exclude each other like being a mentor, an investor in the program or single startups, or function as an important source of external validation for the programs. The experts or trainers are the persons that provide the education on the generic topics mentioned earlier. All these roles are fulfilled by persons that come from outside the corporations and accelerator programs.

The other roles are more distinctive as they vary in presence, activities, and position in the cases. An overview of the intermediary roles they fulfil is given in table 7. A central role in the programs is that of the mentors. These are people that are not on the payroll of het accelerator program, but are external investors, experts or trainers, entrepreneurs, and employees of corporations. These external mentors are often industry experts with experience and a large network in the industry that is part of the vertical of the accelerator program.

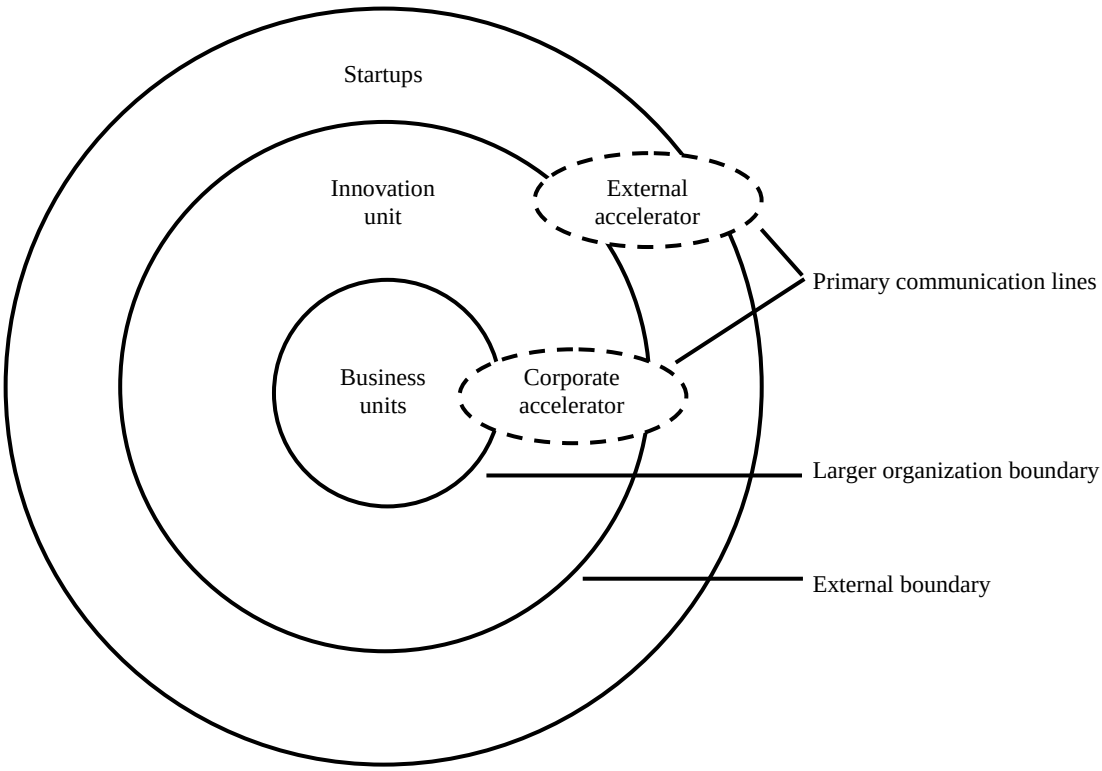


FIGURE 2. The position of accelerator programs in relation to corporations' organizational boundaries.

Each startup has a number of lead mentors that has more intensive contact with the startup than the other mentors. It occurs that mentors become part of a startup's Advisory Board through which they are closely involved with the startups, also after the program.

The external programs try to engage many employees of several corporations within the industry. For example, the Rockstart Smart Energy program has mentors of Eneco, Vattenfall, E.ON, and Alliander; corporations that all are active in the energy industry. The corporate employees often work in the corporate strategy or innovation units and, besides mentoring, fulfil the role of gatekeeper for their employers by scouting for innovations of interest within the programs.

An important source of mentors of the external programs are the corporate partners that invest in program or are program sponsor. In return, they are given access to the ecosystem of the accelerator program. In the accelerator programs of Startupbootcamp the sponsor, which are connected for three programs spread over three years, have the possibility to provide an intrapreneur in residence, which are typically high potentials from the same departments mentioned earlier. They get access to the same facilities as the startups do and become part of the team that support the startups. Like the external mentors they also fulfil a gatekeeper role.

TABLE 7
Intermediary roles in the cases

People involved	**Corporate accelerator program**	**External accelerator program**
Program management	Organizational liaison and gatekeeper	Matchmaker
Mentors	Organizational liaison or none (when receiver of the innovation)	Gatekeeper
Intrapreneurs in residence	Not applicable	Gatekeeper

Contrary to the external programs, the Innovation Studio does not provide external mentors that work for other corporations within the vertical than ING. For example, this would include competitors like ABN AMRO and Rabobank. Instead, the Studio provides internal mentors that are employees of ING's business units and are industry experts in ING's daily activities like payments or lending. Hereby the business units are connected directly to the startup innovations in the accelerator.

So instead of crossing only the external boundary, which is the case with external accelerator programs, startups also cross the larger organization border and get direct access to the business units. These communication lines are illustrated in figure 2.

A second central role in the accelerators is the program management that has the responsibility for the establishment of the content of the program like the events and the education, to connect with relevant stakeholders like external investors, mentors, startups, program alumni, trainers, and media and press, and corporate partners. Both external programs work with a program director that is supported by a small staff. During the program the focus of the program director is on accompanying the startups and establishing relationships between the startups and the stakeholders. The program director functions as a matchmaker between the startups and corporations that are potential launching partners, again mainly helping the startups to cross the external boundary. The Innovation Studio has three ING employees called innovation drivers. They also establish relationships between startups and stakeholders, but these are primarily stakeholders within the ING organization like business unit employees, thereby combining the roles of both gatekeeper and organizational liaison.

4.4 Contributions to relative absorptive capacity

Accelerator programs can be divided in three phases: the pre-acceleration phase, the actual acceleration during the three to six month period, and the post-acceleration phase. By appointing what happens in the various phases insight is provided on how several events contribute to the dimensions of relative absorptive capacity. An overview of the contributions is given in table 8.

TABLE 8
Contributions to relative absorptive capacity during the acceleration phases in the cases

Accelerator program phases	Outside-in open innovation process phases	Type of accelerator program	Accelerator program characteristics and / or roles	Contributions to relative absorptive capacity	Relative absorptive capacity dimensions
Pre-acceleration phase	Obtaining phase	Corporate accelerator program	Combination of the organizational liaison and gatekeeper roles	Alignment with strategic priorities by connecting to business units	Similarity of both organizations' knowledge bases
	Obtaining and commercializati on phase	Both	Selection on verticals	Ensuring high overlap in basic knowledge and target markets	
Acceleration phase	Obtaining phase	Both	Events and all intermediary roles	Establishing connections between corporations and startups	Similarity of both organizations' structures and compensation policies
	Obtaining phase	Both	Education and mentorship	Closing the gap between demand and supply	
Post-acceleration phase	Obtaining phase	Both	Quality label	Overcoming risk aversion	Similarity of both organizations' dominant logics

4.4.1 Contributions during the pre-acceleration phase

Prior to the program all accelerators start with a multiphase competitive selection process, that begins with an online application by startups. The applications are then narrowed down to a selection of startups who are invited for one or two selection days. During the selection day(s) startups pitch for a group of external investors, accelerator program employees, and mentors that asses the applicants. Eventually a cohort of startups is selected to enter the program.

Before moving on to some general selection criteria that make contributions a distinctive characteristic of the Innovation Studio will be addressed, which is the degree of alignment with the corporation's strategic priorities. Corporations that sponsor an external program have some degree of influence in selecting startups because the mentors, and in case of Startupbootcamp also the intrapreneurs in residence, are involved in assessing the startups. However, the programs themselves have the final say and several corporate employees acknowledge that their influence is limited. As influence is limited, the chance that innovations in the

programs are in line with corporate objectives is lower than would be the case if the corporate gatekeepers would have more influence. On contrary, in the Innovation Studio, the innovation drivers combine the roles of gatekeeper and organizational liaisons by searching for business challenges within the business units, and use these challenges to determine which applicants to invite for the selection day. The Co-founder | Innovation Driver @ ING Innovation Studio explained:

> *"An important link there is to find parties that have a particular challenge within ING like aggregation or something else. Who are interested in that party, which is a key component to select a team. Because if we all find it interesting, but not those who later have to do something with it....."*

At forehand, the innovation drivers locate business sponsors to get commitment upfront, and thereby overcome possible future obstacles that might emerge later in the process like a planning that is fully booked. So, by engaging a business sponsor, preferable a senior manager, in this early phase the Innovation Studio takes the higher formalization of the corporation into account by unlocking business unit capacity upfront, which makes it possible to keep up with a startup. The corporate accelerator program can help startups to become part of the agenda instead of competing with the agenda. Because locating business sponsors at forehand is an improvement that has been implemented at version 3.0 of the Innovation Studio the effect is still unknown, but multiple informants recognize the importance like the Co-founder @ CheckMetrix who said:

> *"We've had quite a struggle to get the first sheep over the dam and that is really a shame, because the best is of course when a business line is going to do something with a startup from the Studio. This is really the ultimate proof that you do something that is needed. But how do you get such a business line committed to do something extra, because that is what it is for them. You enter an existing cycle and the entire development roadmap for that year is already fixed, and then somewhere there still needs to be found space in people and money"*

When shifting focus to general selection criteria used by all programs, there are several assessment criteria that contribute to relative absorptive capacity. For instance, by selecting on a certain vertical it is more likely that there is a high overlap in the knowledge base of the corporation and the startup, because within a vertical almost all parties are active in the same industry. As mentioned in paragraph 4.2.1, dissimilarity of the knowledge base was not mentioned as an obstacle in any of the cases. Of course, an industry is not the same as knowledge, but both corporations and startups share the same underlying assumptions and therefore speak the same language which is the most elemental level of knowledge (Cohen & Levinthal, 1990). Or as the CEO / Founder @ twingz said it: *"We checked which of the accelerators would have a program which is kind of*

selecting for verticals, not a channel one in which you are in a very broad area in which you have people you do not understand around you." Also, the Program Director Smart Energy @ Rockstart explained:

> *"So the reason to focus an accelerator at a particular industry is that you can also organize a better ecosystem in which a particular check can be made whether certain ideas will actually work for a sector. If it is very generic, you actually ask your mentors to know something of everything, which of course will not work. By focusing on a particular industry, you can much deeper let knowledge, interests, etc. match or even collide with the new ideas…..you get more in-depth feedback on the kind of startups, the type of findings, than when you keep it all very generic."*

The selection within verticals also ensures that the innovations within the program have a high alignment with the core business of the corporations, because both corporations and startups focus on the same business, which is the corporation's existing customer base. The Director of Partnership Corporate Startup Engagement & Innovation @ Startupbootcamp said:

> *"Startupbootcamp: two customers. The startups on the one hand…..and on the other hand, the partners…..initially, five years ago, we started so-called horizontal programs ..... but if we look now: we can have a successful team, we can get a good proposition…..but one of the major success factors of startups is to land in a distribution network, in other words: how do you get traction, how do you get it sold? Nothing is easier when you link that to partners. So…..we created vertical programs….. On the one hand in order to be able to capture a cluster of similar startups in a similar domain…..But on the other hand, I can also much easier match my partner…..So we developed a partner proposition. So, we now actually have two sides: we can offer startups access to our partners, and we can offer our partners access to our ecosystem."*

So, the selection in verticals also influences the alignment of the startup innovations with the dominant logic of corporations with respect to the customers they want to service. ING, for example, sees financial technology as their core business and is therefore selecting in this vertical. As mentioned in paragraph 4.2.1 also startups tend to focus on this business. About their considerations on which accelerator program to enrol the CEO / Founder @ twingz said:

> *"Like Startupbootcamp Smart City & Living that we are in here, it is in itself a little broader than other…..it is a broad range, but still you have for instance you have the intrapreneurs in residence…..and those mentors where selected by the Startupbootcamp team to be connected to the topic of smart city, changing the live, living smarter, also energy is part of that, that is very important for us. And then you have in the mentor set about a quarter or more of the mentors, who are having important and active roles in our potential target verticals and in energy companies."*

As previously appointed in paragraph 4.3.1. and again in this quote, the vertical of Startupbootcamp is quite broad in comparison to the other programs. This lowers the chances for a match between corporations and startups which underlines the argument made. For example, the Senior Innovation Officer @ Eneco | Mentor Smart Energy Accelerator program @ Rockstart said: *"You have seen the companies last Friday < Startupbootcamp Demo Day >. Yeah, uh, it has not been an effective year for us. Actually, there are few companies that fit our theme."* When confronted with this quote of his colleague, the Product Developer @

Eneco | Intrapreneur in Residence @ Startupbootcamp responded: "*The theme was Smart City & Living , that has just little overlap with Eneco's activities…..it is just what you select as Startupbootcamp. So, there was only one, twingz for example, that was working with energy. Unfortunately, only one, this can be different next year."* This is consistent with the quote of the Strategist & Innovation manager @ Achmea / Interpolis | Mentor @ Startupbootcamp in paragraph 4.2.1. that was participating in a vertical outside their industry: *"So maybe if you step into the Fintech program < the vertical that does match their industry >, then there would emerge more interesting things."*

Moving away from the verticals, also other selection criteria seem relevant. As mentioned in paragraph 4.2.3 corporations have the preference for mature and scalable innovations. Starting with the latter, all accelerator programs select on innovations that are scalable. For instance, when asking about their selection criteria, the Program Director Smart Energy @ Rockstart said:

> *"They are not at the beginning, they are already on their way. We demand that in a certain way there is, what we call, traction…..There are several ways in which it may appear that there is already traction, which is a major requirement…..We also look at the team itself…..Of course, we look at the product, whether we believe in it, we look at the market they think to find. Is there some kind of disruptive effect, or is at least innovative…..and: is it scalable, can it be made scalable?"*

Despite that both corporations and accelerator program demand for scalability, it was not addressed in the interviews as having an important role in the cases. This could be due to the fact that startups are, as mentioned in the introduction of chapter 2, by definition scalable as they are build around technology. This technology element is also the fixed variable of the intersections around which all program verticals are formed. As a result, all parties have scalability as a minimal requirement.
With regard to the maturity of the startup the programs have the opposite effect in comparison to the selection on verticals. All programs select for early stage startups which causes higher dissimilarity in relation to the dominant logic of corporations that search for business ready innovations. However, since startups do get the opportunity to interact with corporations, the programs create conditions under which innovations are broad to the attention, which otherwise might not have been the case. This argumentation also holds for the degree of innovation. These elements will be discussed in the next paragraph.

4.4.2 Contributions during the acceleration phase

As mentioned in paragraph 4.3.1. the focus of accelerator programs is on helping startups to build, validate, and scale their business. This takes place during the acceleration phase in which several contributions are made to relative absorptive capacity. These contributions can be divided in two main subjects: connecting startups to corporations and closing the gap between supply and demand.

Starting with connecting the two types of organizations. All programs facilitate networking conditions and contain multiple intermediary roles that help to establish these connections. This commences with speed dating sessions in the first week of the programs in order to connect startups to mentors. The Co-founder | Product owner @ Whydonate explained: *"Part of the first week is that you could connect yourself with mentors. So we went speed dating and then all these people where pushed forward from the ING organization, of whom you could say: well, I think that is an interesting person."* The other startups have similar experiences, like the CEO / Founder @ twingz:

> *"You start, out of the mentors that you meet at the mentor desks, you collect some contacts and they also collect you as well. And then you have I think one or two additional sets of meetings were you have a similar setup with the tables where you collect contacts to mentors and also find out then on a individual basis, setting up appointments, what would be an opportunity to get deeper knowledge, to find product checks, to find probably find investment, also to dig into market research that both parties would be interested in or probably also find additional representatives insight that companies who might be the right ones to address with your value proposition or check your value proposition. And in this phase you start with about 35, 40 mentors that we were talking to. And then Startupbootcamp also asked us to bring down to about 5 to 7 core, or they call it lead mentors, whom we would regularly meet. And they encouraged us to set up that lead mentors as a kind of an Advisory Board later in the third phase of the Startupbootcamp program and to make physical meeting with that kind of board."*

As explained in paragraph 4.3.2 these mentors are often experts from these industry vertical that fulfil intermediary roles through which the programs make it easier for startups to gain access to corporations and vice versa enable the corporations to search for innovations. The Senior Innovation Officer @ Eneco | Mentor Smart Energy Accelerator program @ Rockstart explained: *"I am concerned with what we call Ideation, which is the front of the innovation funnel. So I scout, screen startups that are interesting for us, and I maintain the ecosystem".* The intrapreneur in residence often has the same aim, as the Strategist & Innovation manager @ Achmea / Interpolis | Mentor @ Startupbootcamp explained: *"We put one of ours in place < as an intrapreneur in residence > , meaning that you can follow all workshops that are given to startups, you can get in touch with these startups in order to make a match: 'can we start a pilot together?'"* There is a

distinction between the Innovation Studio that enables startups to connect directly to mentors from ING's business units, that can have the role of organizational liaisons or can be part of the receiving business units themselves, and the external programs that primarily connect to the innovation and strategy employees of several corporations, that fulfil the role of gatekeeper for their organizations. However, in all cases it helps startup to gain access to corporations by connecting to the mentor or intrapreneur in residence that, in their turn, help startups by giving access to their expertise and network by making introductions. For example, on the question if Startupbootcamp makes it easier for twingz to work with corporations the CEO / Founder @ twingz answered:

> *"Yes, definitely. For instance, we started with Achmea talking on the perspective of de-risking consumers' homes with our energy management, energy monitoring plus presence of people censoring that we have. Than we found out that by the entrepreneurs in residence, by Anne Hudepohl of Delta Lloyd for instance, we found out that Delta Lloyd is looking for something similar but for commercial customers, for small and medium enterprises. You can meet her at the coffee, you can meet her at her desk, you can play table tennis together. So you have a completely different level of meeting each other. It is like in, if it would be the Middle Ages, the knights, the steel casing around them, they would have opened their helmets and you can talk in an open atmosphere."*

The establishment of connections between startups and corporations does not stop after connecting to mentors. During the program there are multiple events at which corporations and startups are introduced to each other. Where the ING Innovation Studio primarily connects to the ING corporation, the external programs connect to multiple corporations and have events that distinct them from the Innovation Studio, like investors diners or pitching events on sight. The Co-founder @ TomTom explained: *"There are a number of these startups that come here to pitch .....Particularly those relevant for the industries in which we are active, such as driving, smart city, digital health".* Another example was given by the Founder @ Capacity Energy | Investor / Mentor Smart Energy Accelerator program @ Rockstart who said: *"They < Rockstart > facilitate in the form of inviting people: investor dinners, at which partners are present, think of Nuon, Eneco, Alliander, Engie, all companies like that".* And the Founder @ Bleeve said:

> *"I think, quite frankly, that eventually we would also have ended up with Eneco when we would not have been with Rockstart, but it has accelerated the process. And I think that applies for many things….., eventually you can manage it yourself, like in our case: you can also compose a good Advisory Board by yourself. You get to meet investors by yourself. But ultimately, it is just an old boys' network, like yo: 'Can you introduce me to him?' You pitch somewhere and there is someone in the room. Networking of course is often quite dynamic. And in the case of Rockstart, there is of course a very large community attached and that has helped us a lot to gain quick access to many companies."*

Also the program management has an active role in establishing connections. For instance in the case of Whydonate, which had trouble gaining access to corporations. The Co-founder | Product owner @ Whydonate

commented on how they got introduced to the receiving business unit: *"We were told that ING wanted to have their own platform…..one of the studio mentors < an innovation driver > …..heard about it and brought me into contact with the Sustainability Department, and that is how the project started off"*. Using other words, the Sustainability Advisor @ ING, who works at the receiving business unit, told the same: *"I was looking for a donation platform and accidentally someone approached me and said: 'Hey, there is someone here with me in the Innovation Studio, a startup that is occupied with donation platforms: could that be something for you?' And that is how it came together."* In the ING case the mandatory use of the working space adds an extra dimension because it is located within one of the ING buildings. This makes it easier for ING employees and startups to interact. The Co-founder | Innovation Driver @ ING Innovation Studio explained:

> *"When you need to make an appointment at a large corporation, and vice versa, because startups also have little time, then you get an appointment, look at our example < making the appoint for the interview >, it is difficult to pick a date, you are a few weeks further and then you might have one hour, a hour and a half, in which you can test your value proposition. That is a snapshot where you are at that moment. A few months later, in startup time, something can already be changed fundamentally. When you are not aligned at that moment and you are also not involved in the process, the chances on collaboration become smaller, besides that it might not be core priority."*

As said, the focus of the ING Innovation Studio on the ING business units, but this is not exclusively as an example told by the Co-founder @ CheckMetrix makes clear: *"And then, with help of the Studio, I got in contact with Salesforce, which ultimately resulted in a good partnership"*.

Whereas the innovation drivers combine the roles of organization liaisons and gatekeeper, the program management of external programs take their role of matchmaker. About his role, the Program Director Smart Energy @ Rockstart told:

> *"I also play a role in that. Look, I come from the world of energy, I have been active in that world for about twenty-five years in different organizations and roles. A lot of experience, but also a lot of network, with many things I can quickly find someone in my book of whom I think I will give him a call like: 'Can you visit us sometimes or can you send someone, or what do you think of that?' Mediating between them, organizing those worlds, by identifying people of whom you say that although active in a corporate environment, are willing to come out of their comfort zone."*

In all the cases in which program management connected startups with corporations, the role of the program management was limited to the introduction. For instance, the Co-founder @ CheckMetrix said: *"Well, of course, they < the innovation drivers > remain involved from the sidelines. I keep them posted…..but the commercial decision they leave to the business line itself."* In both the cases of CheckMetrix and Whydonate the program management joined one meeting after which their active role stopped. This also accountants for

the management of external accelerators. On the question if the program management accompanies startups when the gain access to corporations, the Director of Partnership Corporate Startup Engagement & Innovation @ Startupbootcamp answered:

> *"When a startup appreciates that, than I will do that. As an introduction….. because I have a very clear view…..where the common ground is….. for me as an outsider it is much easier to clarify that…..I think you have got a challenge here and for this reason, and I think the areas of difficulties are here, and they do this, so I think you can do that, baf!"*

All these different forms of making connections between corporations and startups make corporations easier accessible for startups, and thereby decreases the dissimilarity of the organizational structures.

Shifting focus to the second subject, closing the gap between supply and demand, accelerator programs contribute to differences between that what startups offer and the criteria used by corporate business units for assessing potential collaborations. As previously appointed, corporate business units search for business ready innovations with low risks. Accelerator programs provide support that decreases this gap.

The ING Innovation Studio has a predefined path that is used to close this gap. One of the main goals of the Studio is to accelerate startup innovations into validated business options. The focus is on horizon two and horizons three innovations, a degree of innovation that normally has difficulty to land in ING's business units. The Co-founder | Innovation Driver @ ING Innovation Studio explained how the ING Innovation Studio experiments with early stage startups with more explorative innovations:

> *"And then to see, ok, how can a startup do that, because they have fewer restrictions. If we want to use the ING brand, that is not something we can just do, uh privacy issues, is just not possible. Startups do not have those restrictions or they just do not care, in some cases…..it is easy to run an experiment to validate this…..At the end of the cycle you want to have validated business options, than you are going to put more time, money, and energy in it."*

This implicates that an innovation becomes more mature during acceleration and, when mature enough, it can receive follow-up, for example in the business. This was acknowledged by the FinTech Transaction Manager @ ING who said:

> *"That is the underlying idea . So, the Innovation Studio is so to speak a preliminary phase with companies that are still in the idea stage with whom you make agreements on which milestones to achieve to eventually be ready to do a proof of concept with a business unit of ING."*

The business alignment mentioned earlier in the findings on the pre-acceleration phase receives follow-up during acceleration as the Innovation Studio pursues tight lines with the business. Again, the Co-founder | Innovation Driver @ ING Innovation Studio explained:

> *"KPI's are full, so we now want much more commitment upfront. So we look for sponsors that say: 'hey, that is interesting'. We involve them in the milestone planning: 'Which validation do you want to see to achieve certain results?' And just keep them up to date, keeping them engaged on the progress."*

The business sponsors mainly focus on progression, validation, and are closely involved in determining the milestones, that relate to value creation for both ING and the startup and on which possible collaboration is based. This way, the Innovation Studio functions as a breeding ground that, be providing multiple facilities, brings startups closer to the ING business unit. There is a sort of portfolio approach, a drop out race, that enables ING to experiment with multiple ideas. Once more, the Co-founder | Innovation Driver @ ING Innovation Studio: *"In the first period we just want to accelerate to very quickly find out if it makes any sense at all to continue in a particular discipline or with a particular team. Acceleration: drafting of validated business options."*

The external programs do not provide a formal process that ensures this business alignment, but do create the conditions under which early stage startups with more explorative innovations get the chance to engage with gatekeepers. Here, the differences in the primary goals of the different types of programs, distinguish the contributions made. Whereas the focus of the ING Innovation Studio is on the ING corporation, the external programs focus on value creation within the startups. External programs are able to support the latter, like the Program Director Smart Energy @ Rockstart explained:

> *"I think the success rate and the speed at which you can get your success, grows via us. I do not only think that, I now it for sure. We know both sides of the coin and we can also put them in touch with each other without putting great things at risk….let me put it this way: when a corporation is very interested in a startups than there is the risk that they squeeze it to death, that they try to bring them in to fast, that they project conditions on them. Because we are in between, we can avoid that. In case of startups it can happen that they access on the wrong level and think that they are doing well because they have nice conversations and eventually nothing happens. We have seen it all before. There are some game rules that you know and the relationships that play a role in that, making you able to act much more as a broker and process facilitator in that."*

The acceleration period also provides a time period during which startups can search for a business model that has high alignment with that of the corporation, thereby increase the chances of collaboration. The Head of the ING Customer Experience Center @ ING explained:

> *"You just need a lot of flexibility, both startup and corporation, to define that business model together. You also need the framework as a discussion point in order to look together: 'where is the win-win?'….. that is*

the crux of the Studio, because we communicate with the startup in an early stage, opening up our model, so that they can look in our kimono and think: 'where is the win-win?' And can develop their business model in collaboration with use, to look: 'what is going to fly, and what is not going to fly?'

Altogether, the programs create conditions under which early startups can bring their innovation from the idea phase, that does not meet up to corporate business units' standards, to a more mature innovation in the form of a minimum viable product that might be suited to run a pilot or do a proof of concept with a business unit. Normally, early stage startups would not get a chance in the corporate world or would strand at an innovation unit that might not have the resources to bring the startup innovation to the next level.

4.4.3 Contributions during the post-acceleration phase

After the acceleration phase has ended with the demo day the startups become alumni. There is a short aftermath during which the external programs focus on closings deals between startups and strategic partners and investors. There are various events with the primary goal to get the startup to the next investment round. All programs keep facilitating startups by providing working space, professional services, and in case of the external programs there are alumni programs. The accelerator program teams and mentors become passive, but often remain accessible for startups when needed. This is confirmed by many informants; like the Co-founder @ CheckMetrix so aptly puts it:

"The program officially ended in April, so essentially the guidance is finished because coaching, of course, costs money and hours and, essentially, that budget is already spent. We could stay in the Studio until September, as a workplace, so there are still some facilities available if you want."

Some mentors still remain in contact with startups because they are part of their Advisory Board or they are talking about possible collaboration, but there is no role in this for the programs. For the external programs the relation with the startups becomes primarily financial and contact moments are limited to the shareholder meetings. All together, there are no active contributions to relative absorptive capacity by the external programs. Depending on the exit strategy, the innovation drivers in the Innovation Studio can once more fulfil their role as organizational liaison by introducing a startups to some alternate ING units when the startup innovations are not business ready yet. Like the Head of the ING Customer Experience Center @ ING explained:

"As corporate accelerator of course we have the luxury of a corporation behind us and we can take a much broader perspective. That we have interest and can also facilitate in the post- accelerator process in the incubation before

they < the startups > are going to scale, so that we protect those internal projects , especially when they are a bit disruptive , against the excesses of corporate thinking. Until they can actually go further as emergent business opportunity, or as an independent business unit, or are indeed ready to be absorbed into a business unit. That is a longer scope in which there are several phases and we must change our way of thinking during each phase."

So, the focus of the ING Innovation Studio is on bringing ideas to the minimum viable product phase and drafting validated business options. During this period ING determines if it wants to continue with the opportunity and, when positive, there are several options. When mature enough the innovations can be introduced to the business, but when this is not the case, a startup can apply for FinTech Village. This is another accelerator program ran by ING in Belgium with a primary focus to guide more mature startups towards a proof of concept within the ING organization with support of a business sponsor, which is a requirement. Another option is the ING Fintech Department that focuses on partnerships with fintech companies. Although out of scope of this research, these post-acceleration options are illustrative for the alignment within the ING organization.

Finally, there is a more passive element which accounts for all programs and does make an actual contribution, but is more difficult to appoint to a specific phase of acceleration. That is, in all cases startups mention that being selected for an accelerator program functions like sort of a 'quality label'. As the Founder @ Bleeve explained:

"When you are through the selection at Rockstart and you are amongst those ten that are allowed to participate, that is of course some kind of control stamp. Like, there are so many startups that have applied worldwide, ten were selected, so these guys will be, there is something behind it".

Also the Co-founder @ CheckMetrix said:

"That is the great value of such a large ING organization backing you, and I noticed that in several cases, is that it is very good for the hygiene factor of your business because they < potential partners > are like: 'Ok , ING finds this good people, so it is probably right….. So ING has assessed it, has invested money in those guys, so that will in any case be reliable and it will probably be a story that is true , otherwise ING would not get on board'. So it is a kind of hygiene factor and that is very nice to have, and that is why I mention it at almost every meeting, like guys: 'We went through the ING program'. It just gives you positive reactions."

This 'quality stamp' contributes to the risk aversion of corporate business units and can be decisive, as the following commentary by the Sustainability Advisor @ ING on their choice to work with Whydonate illustrates:

"It really gives confidence to know that ING is confident, from the Innovation Studio…..So that, I think, really made the difference…..the fact that they are supported by ING. When ING as a company is confident, that gives me confidence. Then I think, okay , this is a good match. Because there are many of such parties who all call and want to talk to me…."

These results have give an overview of the multiple contributions that the different types of accelerator programs make to the dissimilarities between corporations and startups in the cases. Next, these results will be interpreted which results in the conclusions of this research based on the research question and the theoretical framework.

5 CONCLUSION AND DISCUSSION

This research adds to absorptive capacity theory and the emerging field of theory on accelerator programs by explaining how accelerator programs contribute to relative absorptive capacity. Research on accelerator programs identified the role that these programs have in aligning the interests of startups and corporations. But this work leaves open the question of how accelerator programs affect corporate learning abilities in this context. Addressing this gap, this research explored the interface function that three accelerator programs have fulfilled for corporations while interacting with startups in outside-in open innovation processes. By extending the interface function described of Cohen and Levinthal (1990), that primarily relates to the knowledge dimension of absorptive capacity, this research relates the interface function to all dimensions of relative absorptive capacity. It makes fundamental contributions in the areas of intermediary roles and absorptive capacity.

5.1 Conclusion

The research results show that in order for corporations to learn from startups they are in need of a centralized interface function to overcome both organizations' dissimilarities. There appears to be a difference in the capabilities of both type of accelerator programs to fill in this interface function. Due to its structural position in relation to corporation and startup, an external accelerator program's role is limited to supporting a corporation's existing interface function to the external environment. On contrary, the structural position of the corporate accelerator program enables this type of accelerator to fulfil the roles of cross-function interface as well as the interface to the external environment. As a result, this type of program has the potential to increase organizational absorptive capacity. The results indicate that the structural position of an intermediary is an important determinant for the contribution it can make to organizational absorptive capacity in the role of interface function.

In relation to the individual dimensions of relative absorptive capacity, the results indicate that there are differences to the extent to which both type of accelerator programs make contributions. In general, accelerator programs contribute by ensuring lower dissimilarity in knowledge dimension in advance of the

program, and by decreasing the dissimilarities in the knowledge-processing system and dominant logic dimensions during the program.

Another important insight is that the sequence in which the dimensions of relative absorptive capacity have a role in the phases of the open innovation processes is less statically than literature suggests. On contrary, in line with the theory of West and Bogers (2014) there is an important role for feedback loops. This makes it possible that, despite only having an active role during the obtaining phase, accelerator programs contribute to all dimensions of relative absorptive capacity.

5.2 Discussion

The preceding conclusions are based on the seven contributions of accelerator programs that correspond with the arrows in table 8. How these contributions relate to the dimensions of relative absorptive capacity will be discussed next.

The contribution of accelerator programs to the knowledge dimension of relative absorptive capacity is limited to the searching activities of corporations in the obtaining phase. The selection on verticals connects startups and corporations with a high overlap in their basic knowledge, which makes it possible for corporations to evaluate the importance of the innovation for their organizations. The degree of overlap seems to depend on the narrowness of the vertical which is emphasized by examples of corporations that had trouble finding relevant innovations in the broader vertical of Startupbootcamp. By making a preselecting out of multiple applications, accelerator programs can increase corporations' sourcing capacity and thereby support gatekeeper activities. However, some nuance is warranted with regard to this contribution as the programs do not actually change individual knowledge bases. The degree of similarity of both organizations' knowledge bases remain on the same level, the programs just brings certain corporations and startups together that already have a higher similarity in advance. In line with the theory of Lane and Lubatkin (1998) this contribution by accelerator programs will most likely make it easier for corporations to learn and become more innovative in terms of number of innovations. However, knowledge must also be diverse in order to pursue more exploratory innovations (Cohen & Levinthal, 1990; Dushnitsky & Lenox, 2005; Van Wijk, Van

den Bosch, & Volberda, 2011) which raises the question if more narrow verticals limit the degree of innovations that corporations establish. This can be an interesting field of additional research.

The dimension of relative absorptive capacity that accelerator programs contribute to the most is the similarity of both organizations' structures and compensation policies. An important insight is that both types of programs cause corporations to lower their entry barriers, making them better accessible for startups. Through facilitating and encouraging networking by organizing events and providing mentors, the programs get corporate employees out of their organizations to connect with startups in a less formal setting. In establishing these connections the corporate accelerator program distinguishes itself from the external programs by crossing both the external boundary and the larger organization boundary. Due to their different structural position, external programs primarily cross the external boundary of corporations as a matchmaker that connects startups to the corporations' gatekeepers. They do not affect or replace gatekeepers, but support them. On contrary, the corporate accelerator program combines the roles of both gatekeeper and organizational liaison, connecting startup innovations directly to the corporation's business unit. By establishing connections that cross multiple organizational boundaries, the corporate accelerator is able to bring the innovation 'deeper' into the organization.

However, establishing connections alone is not enough for accelerator programs to increase organizational absorptive capacity. Cohen and Levinthal (1990) emphasize that this also requires sufficient absorptive capacity of those to whom the innovation is transmitted to, like the corporations' business units. The research findings show that accelerator programs connect corporations to early-stage startups that, at the time of joining the programs, are not mature enough to meet up to the standards of these units. During acceleration the programs provide startups with education and mentorship that narrow the dissimilarity between the business units demands and the innovations offered by startups. Not only does this emphasize the need for a centralized interface function within corporations, but it also distinguishes accelerator programs from the more traditional gatekeeper role. Instead of making the decision whether or not to grant access, the programs bring startups to a higher maturity level that enhances the startups' chances to do a pilot or proof of concept with the corporations' business units. Again, this lowers corporate entry barriers by making them more accessible for less mature innovations. More traditional centralized gatekeepers like a corporate innovation unit might also

be able to make these contributions to startups, but findings show that they tend to focus on more mature innovations like those that can be found at scale-ups as corporate compensation policies cause them to focus on short term results or due a limitation in resources.

The corporate compensation policies also influence risk aversion. By participating in an accelerator program the startups are labelled with a kind of 'quality label' which contributes to the risk aversion of corporate business unit employees by increasing their confidence in startup innovations. The fact that a startup is selected out of multiple applicants by an accelerator programs gives the corporate employees the confidence that the startup has a certain quality. This is consistent with the literature on inter-organizational trust that considers source credibility as a relevant factor (Easterby-Smith, Lyles, & Tsang, 2008).

Whereas external accelerator programs are limited to contributing to the startup sight of the dissimilarity of both organizations, the corporate accelerator program also makes contributions to the corporate sight by ensuring alignment with the strategic priorities of corporate business units. By searching for business challenges and identifying business sponsors, the corporate accelerator can ensure commitment upfront. The corporate accelerator programs acts as organizational liaison, searching and connecting to business units that have some amount of redundancy with the startup innovations. This can create close linkages that enable the programs to fulfil the role of cross-function interface, affecting absorptive capacity at an organizational level (Cohen & Levinthal, 1990). By establishing connections between business units and startup innovations upfront, the accelerator program can onboard startup innovations that become part of the business units' agenda's. During acceleration the business units are engaged in the milestone planning of startups, ensuring business involvement, also after the program. This enables the corporation to anticipate on its own high formalization and to keep up with the speed of startups. This early involvement of the business also might temper the frustration that startups experience when they are not granted access to the corporations' business units by the gatekeepers. Of course, gatekeepers that engage in external programs can also search for innovations that are aligned with their corporation's business unit, but these types of programs only allow gatekeepers to have a limited role in the selection and the determination of milestones. The focus of these programs is on creating maximum value amongst startups, which might clash with corporate interests.

This brings up an interesting point. The corporate accelerator program seems to make a higher contribution to a corporation's absorptive capacity than an external accelerator program. However, this does not mean that

this is in the interests of startups. For example, in the corporate accelerator program the startups are limited in the number of potential corporate partners they can connect to. This makes a similar research from a startup perspective an interesting subject for future research.

The contributions made to the dominant logics dimension of relative absorptive capacity are based on similar elements that were seen at the other dimensions. Like with the overlap in basic knowledge, the selection within verticals also supports the connecting between startups and corporations that have a high the similarity in dominant logics with regard to the distribution of the innovation. Corporations assess startup innovations by determining the potential value for their existing customer base within their core activities or related businesses. Startups that apply for the programs tend to have this same focus with the corporations' existing customer base being their target market.

In line with the gap between startups and corporation concerning the maturity of innovations, accelerator programs can make the same contributions to close a possible gap between the preferred business model used by both organizations. Although there is not necessary a difference, the findings show that during the acceleration phase the interaction between corporations and startups creates the opportunity to look for a business model that benefits both organizations. Thereby, a possible dissimilarity in both organizations' dominant logics can be overcome.

Because the corporations has the customers and the distribution channels and the startups resources are limited to their innovation, there is a situation of power asymmetry, with the corporation in a more superior position. As literature shows, the basis for collaboration might deteriorate once the corporation has nothing more to learn from the startup (Easterby-Smith, Lyles, & Tsang, 2008). The findings indicate that white labelling is a business model that works for both parties, but these are all early collaborations. With the increasing role of outside-in open innovation in corporate innovation, an interesting subject for future research is to find out how the different business models in interorganizational collaboration benefits both parties on the longer term.

In addition to this discussion two more subjects of future research are of interest. First, a quantitative survey on a wider scale is needed to evaluate the empirical significance of the presented findings. For instance, by conducting longitudinal research in the United States where the phenomenon of accelerator programs is more

mature. Comparing results of different types of accelerator programs will give valuable insights on how these programs enhance corporate innovation. A comparison to other engagement methods might be interesting as well. Second, and as mentioned earlier, the development of an open innovation framework has the potential to enhance our understanding of open innovation processes.

5.3 Limitations

This research has a number of limitations that will be appointed at random. An important issue is whether the insights are generalizable upon the setting of the cases. For example, because ING Studio 3.0 has just commenced, a part of the findings on the cross-function interface of the corporate accelerator program is based on theoretical assumptions made by the ING informants involved. A second case with a corporate accelerator program would enable cross-references and thereby strengthen the insights. On the other hand, the data in the cases hold a high degree of similarity with the findings in the theoretical background, and logical reasoning would lead to the same conclusions, limiting the chance on alternative explanations.

Another limitation is the limited evidence in the integration and commercialization phase. Within the cases only one startup went through the whole outside-in open innovation process. This is not expected to have significant influence on the findings, because multiple sources acknowledged that the involvement of accelerator programs is limited to the obtaining phase of process. Without presence of an accelerator program in the other two phases, with the exception of feedback loops during the obtaining phase, this would be out of the scope of this research.

This research holds an one-way learning perspective from a corporate point of view. The startups' perspective receives limited attention, despite that this might be relevant. As a results, this research does not consider issues of reversed causality. The construct of relative absorptive capacity is also suited for two-way learning (Lane & Lubatkin, 1998), making this an interesting perspective for future research.

As in all research, there may be alternative theoretical explanations. For example, perhaps that corporations with more experience in collaborating with startups are able to engage with startups in this context without the need for a centralized interface function. Also, some of the contributions made address are more 'static', meaning that the accelerator programs do not actually change the characteristics of any of both types of organizations, which makes it harder to determine how these contributions hold against more traditional

interface functions. A research design in which there would also have been cases without presence of an accelerator program would have made comparison possible and address multiple alternative explanations.

5.4 Managerial implications

This research gives some important insights for managerial practice. A key insight is that participating in accelerator programs are no guarantee for an increase in organizational innovation. Corporate managers should at forehand have a clear vision on which objectives they pursue. Depending on the objective the insights of this research can help to determine if an accelerator program can contribute to the achievement of this objective and if this alone is enough. For example, when corporations want extend their sourcing capacity in order to fill the innovation funnel with multiple innovations a partnership with an external accelerator program might be sufficient. Of course, they would need to evaluate the vertical and the 'narrowness' of this vertical. When the objective is focussed on establishing a high number of innovations at the back of the funnel, corporate management should also keep in mind the need for a cross-function interface. When this is not sufficient, a corporate accelerator program can be consideration. However, also then corporate management should also have an eye for the business units that are the intended recipients of innovations. For instance, there might be need for a kind of incubation phase that follows after a program. Accelerator programs create conditions, but creating conditions alone is not sufficient to enhance organizational innovation.

Another important consideration, which was also brought to attention by Lane and Lubatkin (1998), is with whom to collaborate when pursuing the objective. For example, when the corporate management has a short-term focus with purely profit motives, other collaboration partners then startups might be more suitable. If they do choose to collaborate with startups, although out of the scope of this research, corporations also need to bear in mind the startups' perspective. Multiple startups and corporate employees in this research have emphasized the need for clarity. A transaction manager for example might be helpful in the guidance of startups to increase the 'startup friendliness' of corporations.

To conclude, with regard to managerial implications, this research has given substance to a suggestion for future research made earlier in a paper on absorptive capacity and open innovation:

> *"Combining open innovation and absorptive capacity can also be realized in different ways. The approach in this paper is only one way to enrich our understanding of absorptive capacity. In our opinion, another fruitful approach is to focus on particular management challenges in open innovation. Detailed case studies could illustrate how companies cope with the considerable management challenges in implementing open innovation. Companies get involved in open innovation for different reasons and there is a wide range of management practices to implement open innovation successfully (e.g. scouting, corporate venturing, alliance management, incubators, use of intermediaries, etc.). Analyzing best practices in external corporate venturing for instance could result in a richer idea of what absorptive capacity entails. It could also transform it from a fairly abstract, academic concept to a concept that makes sense for managers" (Vanhaverbeke, Van de Vrande, & Cloodt, 2008, p. 16).*

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APPENDIXES

Appendix A Case study protocol

A. Overview of the Case Study

This case study protocol provides the instrument for conducting the case study and the procedures and general rules that need to be followed. The goal of the case study is to get an understanding of what an accelerator program is and how this program contributes to the absorptive capacity of corporations when collaborating with startups in outside-in open innovation processes. The case study is part of Benjamin Westdorp's master's thesis that is written for the thesis committee of the Part-time Master of Science in Business Administration (MScBA) program. There is no sponsor involved. This study aims to answer the following questions:

Central research question:

"How do accelerator programs contribute to relative absorptive capacity in outside-in open innovation processes?"

Sub-questions:

"What are the characteristics of accelerator programs?"

"How do these characteristics contribute to relative absorptive capacity?"

"What are the contributions to the different phases of outside-in open innovation processes?"

The theoretical framework is a schematic representation of the research question. The key readings which have led to this model can be found in the "references" section of the research report.

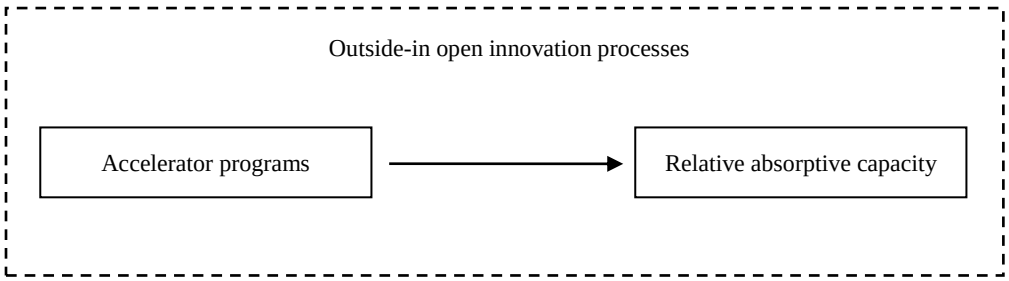

FIGURE 1. The conceptual model.

The case study holds an one-way learning perspective from a corporate point of view. The unit of analysis consists of the dyad unit of corporation and startups, as well as the accelerator program involved. The cases are selected to ensure a maximum variation, which is done by selecting corporations that have different activities.

Corporation	Activity	Startup	(Corporate) accelerator program(s)
Eneco	Utilities		Rockstart and Startupbootcamp
ING	Bank		ING Innovation Studio Startupbootcamp E-commerce Startupbootcamp Smart City & Living
Achmea	Insurances		Startupbootcamp
TomTom	Technology		Startupbootcamp

TABLE 1. Selected cases.

B. Data Collection Procedures

Sources of evidence:

Source	Type	Access to source
1) Persons	Individual employees, possible interviewees: a) Accelerator program manager b) Accelerator program employee c) Accelerator program mentor d) Corporate innovation manager e) Corporate innovation unit employee f) Corporate 'other unit' employee (the receiving unit in which the innovation is integrated) g) Startup team member h) Other	Face-to-face interview
2) Media	Company websites of the corporation and the startup Newspapers, magazines, internet, etc.	Content analysis
3) Documentation	Company presentations (when available) Strategic documents (when available)	Content analysis

TABLE 2. overview of data sources used.

C. Data Collection Questions

Questions
Interviewee
Name, age, role / function
Location, date, time
Anonymity: case and/or personal level
Approval for recording
Interorganizational collaboration
What kind of interorganizational collaborations does the corporation use? Which type of partners are there?
Why is the corporation collaborating with these partners? Main reason for collaboration
How are these collaborations managed? What kinds of methods are used?
What determines the choice of method used? Different methods for different type of partners?
To what extend is the corporation able to learn from these partners? Do the knowledge sharing capabilities / skills differ per partner?
How does the method used contributes to the
Accelerator program
Why does the corporation use accelerator programs? What is the goal / reason for participating / facilitating?
Which accelerator programs are used and why these programs?
What do accelerator programs do? How does this work?
When is the accelerator program used? Depends on the type of partner? Are the only used for startups? Why?
Which phases / steps can be recognized in the program (the process)? What is the duration?
Which persons (functions) and departments are involved in the collaboration?
What are their roles/ what do they do? In which process phase?
What does the program provide? Education, mentorship, networking, venture location / working space, seed capital
When did participation start / when was the program founded?
Number of collaborations completed?
Are there differences between the collaborations (in terms of success, etc.)? How come?
Who is the owner / sponsor? What is the business model?
Obtaining
How does the corporation find startups / innovations? How can startups apply?
Which selection criteria are used? What are the most import criteria? - What type of innovation is the corporation looking for? Product/services or process? More explorative / exploitative? Current customers or new customers? - What is the role of the knowledge area? Are there differences in scientific, academic and / or technological knowledge? Why do they look for innovations in this area / sector? How does this influence the process? - Venture stage / timing: is the development phase of startup relevant? Should there be an minimal viable products and/or clients (scale-up ready?)? - Cohorts: number of startups that enter the program. Why?
What does the corporation think of the knowledge base of the startup? How important can it be for its own organization? Are there differences? What can be learned / what part is diverse / new?
Who are involved in the selection process? What are their roles?
Is the startup a supplier or is it dyadic co-creation?
(How) are the innovations acquired? Supplier, contracts, licensing agreements, etc. Through the acquisition of knowledge, or the technology, or through the acquisition of the startup
What difficulties are being experienced in the obtaining phase? What are the major challenges?
What is done to overcome these difficulties? What is the effect? Is this any different from other types of collaborations?

Integrating
Are the innovations integrated in the corporation? When? How? Are there examples of innovation that were not integrated?
Who are involved in the integration process? What are their roles? When are they involved? How does the program work with other units?
What difficulties are being experienced in the integration phase? Are there complications?
What is done to overcome these difficulties? What is the effect?
Structures
Are there differences in the degree of formalization and centralization? How does this influence the collaboration?
Is the knowledge accessible? Are they able to integrate? What knowledge sharing routines are developed?
Who are / need to be involved to integrate an innovation? Who makes the decisions?
How is the structure in the accelerator program different from other types of collaboration?
Compensation policies
How are the persons involved managed? What is their job description?
How are they compensated? What kind of targets/goals do they have? Short term/long term?
Is their alignment in what both organizations want to accomplish?
How is dealt with uncertainty? More explorative innovations?
How is are the compensation policies in the accelerator program different from other types of collaboration?
Commercializing
When does the startup 'graduates' or fails? What happens next?
Are the innovations brought to market? Why (not?). What are the challenges?
How and when is the business model created (how was the knowledge commercially applied)? Is it aligned with the corporation's business model? How did the involved employees reacted? Was there a business plan (and if so, what did it contain)?
How does this relate to the existing business? Do the innovations threat / cannibalize, complement the current business?
What difficulties are being experienced in the commercialization phase?
What is done to overcome these difficulties? What is the effect?
Who are involved in the integration process? What are their roles? When are they involved? How does the program work with other units?
What happens after the program is finished?
How is the commercialization phase in the accelerator program different from other types of collaboration?
Similarity of both organizations
Are there (any other) organizational differences experienced? What are they? What impact do they have?
What would happen if the collaboration that are discussed would be placed outside the accelerator program?
Wrap up
If the interviewee was advising organization on this subject, what are the main changes or improvements that would be recommended?
Are there important issues not discussed? 'What do you think I should have asked you about that I have not?'
Does the interviewee has any questions?
Is there any documentation available on the subjects discussed that can be used for the research?
Is the interviewee willing to review the draft case study report?
Does the interviewee want to receive the research report?
Can the interviewee introduce me with other people involved in the case for an interview?

TABLE 3. Data collection questions.

Appendix B Overview data sources

Accelerator		Source type	Informant type	Source code	Soure name	Title of informant
INGIS		Persons	Accelerator	INGP1	Willem Schellekens	Co-founder | Innovation Driver @ ING Innovation Studio
INGIS		Persons	Business	INGP4	Nathalie Vennik	Sustainability Advisor @ ING
INGIS		Persons	Business	INGP7	Cezarina Niculae	Sustainability Consultant @ ING
INGIS		Persons	Business	INGP6	Herman Tanghe	Tribe Lead Experience Zakelijk @ ING
INGIS	SBC	Persons	Innovation	INGP3	Lodewijk Bonebakker	Head of the ING Customer Experience Center @ ING
INGIS	SBC	Persons	Other	INGP5	Martijn Bekking	Customer Journey Expert @ ING | Intrapreneur in Residence @ Startupbootcamp
INGIS		Persons	Other	INGP2	Wouter Goossens	FinTech Transaction Manager @ ING
INGIS		Persons	Startup	STUP1	Niels Corver	Co-founder | Product owner @ Whydonate
INGIS		Persons	Startup	STUP5	Pieter Paul van den Hoven	Co-founder @ CheckMetrix
RCKST		Persons	Accelerator	RSTP1	Freerk Bisschop	Program Director Smart Energy @ Rockstart
RCKST		Persons	Business	ALLP1	Marcel van Hest	Strategy Consultant @ Alliander | Mentor Smart Energy Accelerator program @ Rockstart
RCKST	SBC	Persons	Innovation	ENEP1	Glenn Bijvoets	Senior Innovation Officer @ Eneco | Mentor Smart Energy Accelerator program @ Rockstart
RCKST		Persons	Startup	STUP2	Reinier Schneider	Founder @ Bleeve
RCKST		Persons	Startup	STUP3	Huib Wurfbain	Founder @ Capacity Energy | Investor / Mentor Smart Energy Accelerator program @ Rockstart
SBC		Persons	Accelerator	SBCP1	Gerben Klop	Director of Partnership Corporate Startup Engagement & Innovation @ Startupbootcamp
SBC		Persons	Business	TOMP1	Peter Frans Pauwel	Co-founder @ TomTom
SBC		Persons	Innovation	ACHP1	Bob van Leeuwen	Strategist & Innovation manager @ Achmea / Interpolis | Mentor @ Startupbootcamp
SBC		Persons	Other	ENEP2	Ewoud von Dülmen Krumpelmann	Product Developer @ Eneco | Intrapreneur in Residence @ Startupbootcamp
SBC		Persons	Startup	STUP4	Werner Weihs-Sedivy	CEO / Founder @ twingz

Cases	Source type	Informant type	Source code	Soure name	Title of event
INGIS	Observation	N.A.	INGO1	N.A.	ING Innovation Studio startup pitch event
SBC	Observation	N.A.	SBCO1	N.A.	Startupbootcamp Demo Day
N.A.	Observation	N.A.	SBCO2	N.A.	Day@theCampus Energy, workshop: Startup & Corporate collaboration

Cases	Source type	Informant type	Source code	Soure name	Title of document or media
INGIS	Documentation	N.A.	INGD1	N.A.	20160628 Terms and conditions Innovation Studio
INGIS	Documentation	N.A.	INGD2	N.A.	20160628 ING Innovation Studio Website
INGIS	Documentation	N.A.	INGD3	N.A.	201601xx PACE Methodology Playbook
INGIS	Media	N.A.	INGM1	N.A.	20160421 4 controversial learnings after setting up a corporate accelerator
INGIS	Media	N.A.	INGM2	N.A.	20150908 ING announces winners of the Innovation Studio startup pitch
RCKST	Documentation	N.A.	RSTD1	N.A.	20160707 Rockstart Smart Energy Program
RCKST	Media	N.A.	RSTM1	N.A.	20160629 Freerk ‘Rockstart’ Bisschop start-ups en corporates zijn compleet andere werelden
RCKST	Media	N.A.	RSTM2	N.A.	20150501 This happened at the Smart Energy Demo Day 2015
RCKST	Media	N.A.	RSTM3	N.A.	20140822 Rockstart Smart Energy Accelerator 2015 opens applications
SBC	Documentation	N.A.	SBCD1	N.A.	20160707 Startupbootcamp Smart City & Living
SBC	Documentation	N.A.	SBCD2	N.A.	20160808 E-commerce Partner Deck
SBC	Media	N.A.	SBCM1	N.A.	20160708 Smart City & Living Demo Day

Appendix C Taxonomy

(Corporate) accelerator program	Characteristics (CH)	Type: corporate accelerator program (owner)	AP-CH-INGIS
		Type: external accelerator program (sponsor)	AP-CH-RCKST
		Type: external accelerator program (sponsor)	AP-CH-SBC
		Facilities (education, mentorship, networking, workspace, seed capital)	AP-CH-FAC
		Duration	AP-CH-DUR
		Goal and / or business model	AP-CH-GOA
	Roles (RL)	Accelerator program manager	AP-RL-APM
		Accelerator program employee (like internal mentor or manager)	AP-RL-APEMP
		Accelerator program external mentor	AP-RL-APEXM
		Corporate innovation unit employee (or manager)	AP-RL-CIUE
		Corporate business unit employee (or manager)	AP-RL-CBUE
		Startup team member	AP-RL-STUP
		External investor	AP-RL-EXIN
		Partner / sponsor	AP-RL-PART
		Other (intrapreneur in residence, C-level corporate manager, etc.)	AP-RL-OTH
	Process phases (PP)	Pre-acceleration (application and selection)	AP-PP-PRE
		Acceleration (including demo day / graduation)	AP-PP-ACC
		Post-acceleration	AP-PP-POST
Relative absorptive capacity (RAC)	Dimensions (D)	Knowledge base - Basic knowledge	RAC-D-KBBK
		Knowledge base - Specialized knowledge	RAC-D-KBSK
		Organizational structure - formalization	RAC-D-OSF
		Organizational structure - centralization	RAC-D-OSC
		Compensation policies	RAC-D-COMP
		Dominant logic - business model and scalability	RAC-D-DL-BM
		Dominant logic - venture stage	RAC-D-VS
Outside-in open innovation processes (OIOI)	Process phase (PP)	Obtaining - Search for innovations	OIOI-PP-OBS
		Obtaining - Acquire innovations	OIOI-PP-OBE
		Integrating	OIOI-PP-INT
		Commercializing	OIOI-PP-COM
		Interaction mechanisms	OIOI-PP-IM
	Process execution	Speed of the innovation process	OIOI-PE-SP
	Process outcome	Degree and type of innovation	OIOI-PO-DI
Interface function	Organizational boundaries	Extra-organizational boundary	IF-BR-EOB
		Accelerator to larger organization	IF-BR-ALO
		Intra-accelerator boundary	IF-BR-IAB

Appendix D Schematic overviews

Data complete	
Not applicable	N.A.

Section	Source code	ING Innovation Studio 2.0 (AP-CH-INGIS)													
		INGP1	INGP2	INGP3	INGP4	INGP5	INGP6	INGP7	STUP1	STUP5	INGD1	INGD2	INGD3	INGM1	INGM2
4.1 Corporate learning objectives															
Goal and / or business model	AP-CH-GOA	■		■		■	■	■						■	
4.2 The role of relative absorptive capacity															
Knowledge base - Basic knowledge	RAC-D-KBBK	■							■		■				
Knowledge base - Specialized knowledge	RAC-D-KBSK	■							■						
Organizational structure - formalization	RAC-D-OSF	■		■	■		■		■					■	
Organizational structure - centralization	RAC-D-OSC		■	■					■	■					
Compensation policies	RAC-D-COMP	■		■			■		■	■					
Dominant logic - business model and scalability	RAC-D-DL-BM	■	■	■			■		■	■				■	
Dominant logic - venture stage	RAC-D-VS		■	■		■	■		■	■					
Other - culture	RAC-D-CUL	■		■			■								
4.3 Accelerator program characteristics and roles															
Education and mentorship	AP-CH-FAC	■		■					■	■	■	■			■
Networking (conditions)	AP-CH-FAC	■				■			■			■			
Workspace	AP-CH-FAC	■				■			■	■	■	■			
Seed capital (funding)	AP-CH-FAC	■	■			■			■		■	■			
Venture Stage	RAC-D-VS	■	■	■			■		■	■					
Cohorts	AP-PP-PRE										■				
Duration	AP-CH-DUR								■		■	■		■	■
Accelerator program manager	AP-RL-APM	■			■	■	■		■	■					
Accelerator program employee	AP-RL-APEMP	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Accelerator program external mentor	AP-RL-APEXM	■							■	■	■				
Corporate innovation unit employee (or manager)	AP-RL-CIUE	■							■						
Corporate business unit employee (or manager)	AP-RL-CBUE	■	■		■	■	■		■					■	
Startup team member	AP-RL-STUP	■				■			■						
External investor	AP-RL-EXIN	■													
Partner	AP-RL-PART					■									
Other	AP-RL-OTH		■			■	■		■						

4.4 Contributions to relative absorptive capacity

Pre-acceleration (application and selection)	AP-PP-PRE	■	■	■	■	■	■	■	■	■	■	■			■
Acceleration (including demo day / graduation)	AP-PP-ACC	■													■
Post-acceleration	AP-PP-POST	■		■						■					
Extra-organizational boundary	IF-BR-EOB	■	■			■	■			■					
Accelerator to larger organization	IF-BR-ALO	■	■	■	■	■	■		■	■					
Intra-accelerator boundary	IF-BR-IAB	■													
Obtaining - Search for innovations	OIOI-PP-OBS	■	■		■		■			■					
Obtaining - Acquire innovations	OIOI-PP-OBE	■	■	■	■		■		■	■					
Integrating	OIOI-PP-INT		■	■	■				■	■					
Commercializing	OIOI-PP-COM	■	■						■						
Interaction mechanisms	OIOI-PP-IM								■						

Data complete	■
Not applicable	N.A.

Rockstart, Smart Energy (AP-CH-RCKST)

Section	**Source code**	RSTP1	STUP2	STUP3	ENEP1	RSTD1	RSTM1	RSTM2	RSTM3
4.1 Corporate learning objectives									
Goal and / or business model	AP-CH-GOA	■		■	■				
4.2 The role of relative absorptive capacity									
Knowledge base - Basic knowledge	RAC-D-KBBK	■	■	■					
Knowledge base - Specialized knowledge	RAC-D-KBSK	■	■	■					
Organizational structure - formalization	RAC-D-OSF	■	■	■					
Organizational structure - centralization	RAC-D-OSC	■	■						
Compensation policies	RAC-D-COMP	■	■	■	■				
Dominant logic - business model and scalability	RAC-D-DL-BM	■	■	■	■				
Dominant logic - venture stage	RAC-D-VS		■	■	■				
Other - culture	RAC-D-CUL	■	■		■				
4.3 Accelerator program characteristics and roles									
Education and mentorship	AP-CH-FAC	■	■	■	■	■			■
Networking (conditions)	AP-CH-FAC	■	■	■		■	■	■	■

Workspace	AP-CH-FAC	■	■			■			■
Seed capital (funding)	AP-CH-FAC	■	■	■		■	■		■
Venture Stage	RAC-D-VS	■	■	■	■				
Cohorts	AP-PP-PRE						■		
Duration	AP-CH-DUR	■		■			■		
Accelerator program manager	AP-RL-APM	■		■					
Accelerator program employee	AP-RL-APEMP								
Accelerator program external mentor	AP-RL-APEXM	■			■				
Corporate innovation unit employee (or manager)	AP-RL-CIUE			■	■				
Corporate business unit employee (or manager)	AP-RL-CBUE	■		■					
Startup team member	AP-RL-STUP								
External investor	AP-RL-EXIN	■	■	■				■	
Partner	AP-RL-PART								
Other	AP-RL-OTH	■	■	■	■				

4.4 Contributions to relative absorptive capacity

Pre-acceleration (application and selection)	AP-PP-PRE	■		■		■		■	
Acceleration (including demo day / graduation)	AP-PP-ACC	■	■	■	■			■	
Post-acceleration	AP-PP-POST	■	■	■				■	
Extra-organizational boundary	IF-BR-EOB	■	■	■	■		■	■	
Accelerator to larger organization	IF-BR-ALO	■			■				
Intra-accelerator boundary	IF-BR-IAB	■	■						
Obtaining - Search for innovations	OIOI-PP-OBS	■		■	■				
Obtaining - Acquire innovations	OIOI-PP-OBE		■		■				
Integrating	OIOI-PP-INT								
Commercializing	OIOI-PP-COM								
Interaction mechanisms	OIOI-PP-IM				■				

Data complete	
Not applicable	N.A.

Section	Source code	Startupboot-camp, Smart City & Living (AP-CH-SBC)								
		ACHP1	SBCD1	SBCD2	SBCM1	TOMP1	ENEP2	STUP4	SBCP1	ALLP1
4.1 Corporate learning objectives										
Goal and / or business model	AP-CH-GOA	■	■	■		■	■		■	■
4.2 The role of relative absorptive capacity										
Knowledge base - Basic knowledge	RAC-D-KBBK	■	■	■		■	■	■	■	
Knowledge base - Specialized knowledge	RAC-D-KBSK									
Organizational structure - formalization	RAC-D-OSF	■								
Organizational structure - centralization	RAC-D-OSC	■						■		
Compensation policies	RAC-D-COMP									
Dominant logic - business model and scalability	RAC-D-DL-BM	■						■		
Dominant logic - venture stage	RAC-D-VS							■	■	
Other - culture	RAC-D-CUL					■				
4.3 Accelerator program characteristics and roles										
Education and mentorship	AP-CH-FAC	■	■	■		■	■	■	■	
Networking (conditions)	AP-CH-FAC		■					■	■	
Workspace	AP-CH-FAC		■					■	■	
Seed capital (funding)	AP-CH-FAC		■						■	
Venture Stage	RAC-D-VS							■	■	
Cohorts	AP-PP-PRE		■			■				
Duration	AP-CH-DUR		■	■		■			■	
Accelerator program manager	AP-RL-APM									
Accelerator program employee	AP-RL-APEMP									
Accelerator program external mentor	AP-RL-APEXM	■		■		■		■	■	■
Corporate innovation unit employee (or manager)	AP-RL-CIUE	■								
Corporate business unit employee (or manager)	AP-RL-CBUE							■		
Startup team member	AP-RL-STUP									
External investor	AP-RL-EXIN			■		■			■	
Partner	AP-RL-PART	■		■		■	■		■	
Other	AP-RL-OTH	■		■			■	■		

4.4 Contributions to relative absorptive capacity

Pre-acceleration (application and selection)	AP-PP-PRE								
Acceleration (including demo day / graduation)	AP-PP-ACC								
Post-acceleration	AP-PP-POST								
Extra-organizational boundary	IF-BR-EOB								
Accelerator to larger organization	IF-BR-ALO								
Intra-accelerator boundary	IF-BR-IAB								
Obtaining - Search for innovations	OIOI-PP-OBS								
Obtaining - Acquire innovations	OIOI-PP-OBE								
Integrating	OIOI-PP-INT								
Commercializing	OIOI-PP-COM								
Interaction mechanisms	OIOI-PP-IM								

Appendix E Interview transcripts

For practical reasons, the transcripts of the interviews are included in a separate document called ‘Master’s thesis - B.A. Westdorp - Appendix E’.