

The Functions of the Proto-entrepreneur in Building up Startup Innovation Capabilities

Fábio Freitas Schilling Marquesan¹ , Paulo Antônio Zawislak¹ , Guilherme Freitas Camboim¹ 

¹ Universidade Federal do Rio Grande do Sul, Escola de Administração, Porto Alegre, RS, Brazil

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Corresponding author:

Fábio Freitas Schilling Marquesan
Universidade Federal do Rio Grande do Sul,
Escola de Administração
Rua Washington Luiz, n. 855, Centro Histórico,
CEP 90010-460, Porto Alegre, RS, Brazil


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ABSTRACT

Objective: this paper aims to deepen the current understanding of the concept of the 'proto-entrepreneur' while explaining how this agent works in the process of building up startup innovation capabilities. **Methods:** we argue that behind new ventures (such as startups) there may be no Schumpeterian entrepreneurs as the traditional literature defines it, but instead what we call proto-entrepreneurs. **Results:** entrepreneurs are agents capable of, in discontinuous intervals, changing the *status quo* of already established firms, and even society. Proto-entrepreneurs aspire to do so in startups, but they still lack the knowledge and the necessary set of capabilities to make such changes. Therefore, the conversion of a proto-entrepreneur into an entrepreneur, in the Schumpeterian sense of the term, depends on a process of knowledge accumulation for building the missing innovation capabilities, without which extraordinary profits cannot be reached. This process usually happens in startups — here taken as the primary locus of the proto-entrepreneurial action —, and the proto-entrepreneurs should undertake a sequence of activities for building such capabilities. **Conclusions:** in such conditions, the proto-entrepreneur should seek knowledge and capabilities, to develop a minimum valuable product, find an initial marketplace, establish scalable operations, and constitute enough management competence.

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INTRODUCTION

The figure of the entrepreneur always had a central role in the development of society and, more recently, in innovation studies (Fagerberg & Verspagen, 2009). As a rule, this figure is linked to the debate on economic development (Hébert & Link, 2006), and its role has gained new dimensions in the current context of accelerating the creation of new ventures (many of them resulting from the advent of the digital revolution). Hence, theorizing efforts on this figure inevitably go through updating processes that aim to improve the understanding of its performance. And that is exactly what this paper is about. Through this paper, we try to explore the functions of what we here call 'proto-entrepreneurs' as a new type of agent in the dynamics of contemporary innovation processes.

In this frame, much more than just an 'opportunity recognizer' or a 'business creator' (Baron & Ensley, 2006; Chandler et al., 2011; Grimaldi & Grandi, 2005; Hill et al., 1998; McAdam & Marlow, 2007; Ozgen & Baron, 2007; Sarasvathy, 2001; Timmons & Spinelli, 2004), the entrepreneur (or the proto-entrepreneur) of the 21st century is a multifaceted agent whose definitions range from entrepreneurial intention (Dai et al., 2014; Liñán & Fayolle, 2015) and strategic entrepreneurship (Hitt et al., 2011), through different visions of entrepreneurial behavior (Carland et al., 1984; Filion, 1999; McClelland, 1972; Welter, 2011; Welter & Smallbone, 2011) and even concerns related to identity and belonging (Shepherd & Haynie, 2009). But all these possibilities for conceptualizing and explaining entrepreneurial action, despite their validity, are still insufficient to understand what we are trying to propose here.

More than 100 years after the first formulations about the innovative entrepreneur, as initially proposed by Schumpeter (1934 — originally published in the German language, in 1911), the level of knowledge accumulation and the emergence of new technologies have enabled some agents to create new business models within rapid potential of growth, the so-called startups (McMullen & Dimov, 2013; Ries, 2011). Under the widespread avalanche of startups that permeates the most diverse sectors of the economy, the agents who act behind them have been considered, roughly speaking, as entrepreneurs. But against the relatively uncritical acceptance of this movement, we allow ourselves to question this: Are they really entrepreneurs?

As a matter of fact, as they lack specific knowledge to accomplish new resource allocation and, thus, to develop profitable established firms, these actors cannot yet be fully considered entrepreneurs. It is our assumption that they ought to be called proto-entrepreneurs, not entrepreneurs themselves. In fact, they aspire to be

entrepreneurs but have not yet gathered the knowledge nor the capabilities to complete this transition. They, as a rule, were not even able to earn the extraordinary profits that would elevate them to the status of true entrepreneurs (Schumpeter, 1934).

One, indeed, may witness the recombination of materials and forces or even creating new arrangements and products. This, however, is not enough to have an established firm — here understood as the economic agent that carries out production and sales in a different and efficient way from the existing market, which leads to profit at least above the market average (Coase, 1937; Demsetz, 1988). This is what, as a rule, a firm does and whoever leads this process is, necessarily, an entrepreneur.

However, in many cases, a startup does not have the necessary technological, organizational, business, or marketing completeness to allow efficiency and gains, especially when calculated through standard measures, to be considered as true 'extraordinary profits' in the sense of Schumpeter (1934). This may explain why such ventures are often stamped by occasional success of sales without economic results, by so many additional necessary venture capital contributions, or even by longer maturation periods.

If it is not yet a firm, when can a startup be considered as one? Who, in fact, is behind the endeavor of starting up (what may one day be called) a firm? Under such bounded conditions, our assumption is that the agent responsible for these endeavors is not yet an entrepreneur, but rather an aspiring candidate: the 'proto-entrepreneur.'

To date, the literature seems to fail in offering a closer look at the role of this agent. This terminology, already expressed by Allen and Potts (2016), is justified because such agents lack some particular traits to be full Schumpeterian entrepreneurs. The proto-entrepreneur is an agent who may have proper knowledge and technology, and may even be integrated within innovation ecosystems, allowing the creation of new ventures and startups, but who has not yet gathered the necessary strategic and organizational assets, nor fully understood the reality of the market nor managed efficiency in such a way to reach extraordinary profits.

Although it has already been used in the literature (see, for example, Allen, 2017; Allen & Potts, 2016; Roundtree, 2016), we assume that the term 'proto-entrepreneur' has not yet been applied in the way we propose in this paper. This guarantees the originality of our proposal, and at the same time opens up wide possibilities for dialogue with those who anticipated the use of the concept.

Hence, we assume that this agent is at the core of what may be a future Schumpeterian entrepreneur. It is the one that 'starts a startup' in order to become a firm. However, what is therefore missing to make new ventures and startups become fully established firms? Deepening our argument, it is the mastering of the innovation capabilities that will allow the proto-entrepreneur to give the ultimate leapfrog.

Seminal work on capabilities, with a special focus on the core competencies, resources, and assets of the firms, points to an array of different knowledge, technology, routines, and skills as the major responsible for competitive performance (Dosi et al., 1988; Nelson & Winter, 1982; Penrose, 1959; Richardson, 1972). From technological and organizational capabilities to dynamic and innovative ones, literature has evolved in the last decades (Chandler, 1992; Guan & Ma, 2003; Lall, 1992; Teece et al., 1997; Yam et al., 2011). In short, any firm is, after all, a bunch of capabilities for developing its products, operating the subsequent process, managing an efficient resource allocation and commercializing in the market (Zawislak et al., 2012).

Behind — and even before — the strategic task of entrepreneurship, are different levels of acquired, missing, and undeveloped skills and capabilities that have to be fulfilled. From this point of view, the entrepreneur will be considered as the gatekeeper of established capabilities in a firm. For their fulfillment, however, emerges the need for the process of building innovation capabilities, so a startup can become a firm. The building of innovation capabilities is a continuous process of learning and problem-solving (Fujimoto, 1994; Hodges, 2017; Nelson et al., 2018; Teece, 2018). In short, if the entrepreneur is the gatekeeper of innovation capabilities that allow the firm to evolve, the proto-entrepreneur has the commitment of being the agent of learning and building such capabilities (in a startup).

Moreover, as the boundaries of technical, organizational, and marketing knowledge in a startup are to be expanded, the startup can be seen — in addition to all definitions already put in the literature (technology-based company with rapid scalability, etc.) — as the locus where the missing capabilities of the future firm are to be built and articulated, i.e., as the locus of proto-entrepreneurial action.

Having that in mind, this paper aims to deepen the current understanding about the concept of 'proto-entrepreneur.' This involves presenting the role and functions of the proto-entrepreneur and outline the path taken by him as the primal responsible for building and articulating the (still) missing innovation capabilities of the startup along time.

Focusing on the different levels between what we understand here as proto-entrepreneur and the typical Schumpeterian entrepreneur, it is possible to perceive a sort of logical sequence to be traveled. From first sketching and the MVP until reaching the market through a new business model, scaling up and organizing itself, the startup goes a long way until it becomes an established firm.

In short, the tasks of the proto-entrepreneur are for the startup what those of the entrepreneur are for the firm. If nowadays any Schumpeterian entrepreneur were, somewhere in time, a proto-entrepreneur, all proto-entrepreneurs always would look forward to becoming a Schumpeterian entrepreneur. Once the startup's innovation capabilities are properly articulated, it may become a firm, and the agent behind this action a *de facto* entrepreneur.

THE RECOVERING OF THE SCHUMPETERIAN ENTREPRENEUR

In Schumpeter's (1934, 1942) work, the role of the entrepreneur (with regard to innovation, economic development, etc.) is crucial. As an agent of innovation, the entrepreneur is responsible for breaking the prevailing patterns of the circular flow, opening up the possibility of economic development (Robbins, 1968). The circular flow can be interrupted whenever there is the introduction of new products, services, processes, business models, organizational solutions, and so on. The impact upon the regular operation of the economic system by the displacement, re-organization, and new combination of resources leads to innovative outcomes.

With successful performance in the marketplace, it also gives rise to extraordinary profit. The acceptance and value recognition of such novelties underpin a different standard of utility and pricing — and, hence, compensation — of resources and products, especially when compared to the previously prevailing context. Innovation will prompt new gains and extraordinary profits — and this derives precisely from the true entrepreneurial action (Schumpeter, 1934). In short, economic development occurs in a process of 'creative destruction,' where the entrepreneur is the driver of economic development by introducing innovations in the economic system (Schumpeter, 1942).

Munier (2013) suggests that, in Schumpeter's point of view, "the essence of the entrepreneur is ... the ability to break away from routine, to destroy existing structures, to move the system away from equilibrium. ... The entrepreneur is the disruptive force that dislodges the market from the somnolence of equilibrium" (p. 1572). In that sense, the entrepreneur works upon established patterns and firms, but in a controversial

way, it seeks to creatively destroy all of this, to establish the foundations of the new paradigm.

For [Schumpeter \(1934\)](#), the entrepreneur is the actor capable of channeling novelty directly to the market throughout the destruction of the old. He normally expects to outperform technical and market challenges by recognizing the commercial potential of an invention and by organizing the capital, the talent, and other resources that turn an invention into a commercially viable innovation ([Audretsch et al., 2002](#)).

[Schumpeter \(1934\)](#) offers different dimensions of innovation. Regarding the profit that concerns the entrepreneur, there shall be innovations that offer something new to a given established market (product oriented), innovations of operational nature (process oriented), those that deal with the allocation of resources (organization oriented), and for exploitation of new markets (market oriented). Each dimension will depend on the focus of the company and the arising objectives, such as new technology and new product, production process and the need for scale, size and management, or yet the type of transaction and the market.

As one may see, innovation happens in different dimensions, such as product, operations, organization, marketing, etc. ([Organisation for Economic Co-operation and Development \[OECD\], 2018](#)). Of course, even with specific focus in one dimension, the others are needed to leverage and thrive. Moreover, the need for organizational change and novelty looms over the three dimensions, since all of them require new technical allocation of resources and new business goals for productivity, quality, and efficiency. In short, the firm must, at any level, dispose of different skills translated into degrees and arrangements of capabilities for innovation. The mastering of the innovation capabilities is the ultimate task of the entrepreneur.

It is, precisely, that task that differentiates him from the regular businessman. The entrepreneur has the ability to promote change in the different allocation of resources, leading to innovation and economic development, which distinguishes him from the regular businessman tasks, such as cost-efficiency, stability, and control. Somehow, at least in an evolutionary view, the entrepreneur will depart from a given set of existing capabilities in the firm to reach for innovation and change ([Pufal & Zawislak, 2021](#)). The mastering and articulating of innovation capabilities is thus at the core of our concern.

UNDERSTANDING THE LOGIC OF ARTICULATING INNOVATION CAPABILITIES IN A FIRM

A firm can be understood as a set of resources, knowledge, and assets that are transformed into processes

and routines, hereinafter called capabilities ([Dosi, 1991](#); [Nelson & Winter, 1982](#); [Richardson, 1972](#)). The capabilities, in fact, are those different abilities any firm must assemble and manage to be capable of doing something. As the firm evolves, new knowledge is added to assure competitive performance. The ability to absorb, adapt, and transform this new knowledge into useful technology, effective resources, strategic assets, and operative skills is due to the arrangement of capabilities any firm has. In that regard, the capabilities approach is used to understand the innovative behavior of firms ([Nelson et al., 2018](#)). In short, one may realize that a company without capabilities is not a firm as a whole.

The attempt to understand innovative behavior of firms through their capabilities promoted plenty of theoretical perspectives. Since then, many scholars have discussed the evolution of technological capabilities ([Lall, 1992](#)) to dynamic capabilities ([Teece et al., 1997](#)), and of organizational capabilities ([Dosi et al., 2000](#)) to innovation capabilities ([Alves et al., 2017](#); [Guan & Ma, 2003](#); [Yam et al., 2011](#); [Zawislak et al., 2012](#)). Product development and R&D, operations and processes, management and strategy, marketing and transactions are just some of the words that summarize the maelstrom of concepts around innovation capabilities.

Within an established firm, [Zawislak et al. \(2012, 2013\)](#) converged on a simple model of analysis suggesting that every firm has, in various types and degrees, combinations of four specific innovation capabilities: development (technology and the product), operations (equipment and the process), management (strategy and the organization), and transactions (supply chain and the market). Accordingly, it is from the combination of these capabilities that the firm can reach different innovative performance.

Development capability refers to a set of skills and routines necessary for the development process. From available information and the firm's knowledge base, this development process consists in searching, analyzing, and applying them in order to create or to improve products to be offered to the market. Therefore, if the complexity level in this process is high, the firm's development capability will have to be high as well ([Reichert et al., 2015](#)).

Operations capability refers to a set of necessary skills and routines that the firm must have, considering established patterns and developed techniques, and the daily operations related with production in a lead-time. The operations capability helps manufacturing products with better quality, productivity, and cost performance ([Zawislak et al., 2012, 2013](#)).

Management capability refers to a set of skills and routines necessary to coordinate the organizational

processes and the optimal allocation of resources. The firm will take strategic decisions, choose which will be the business model and provide management support to implement all planned actions in order to reach its objectives and reduce costs (Alves et al., 2017).

Finally, transaction capability refers to a set of skills and routines that the firm has to implement in terms of marketing and commercial processes. This capability covers many activities of the firm and is the key to sustain the revenue, as it is in close contact with the market, such as relationships with suppliers and clients, brands and reputation, looking for the reduction of transaction costs (Williamson, 2002; Zawislak et al., 2012, 2013).

As one may perceive, this framework fits well with established firms and helps in explaining their evolutionary trajectories through innovation. But how about innovation capabilities and the startups?

At this point, it is still unclear how this articulation works in startups, since, as a crucial assumption here, they do not have all capabilities fully developed. Dullius (2016), based on case studies with startups at Silicon Valley, suggests that

... while firms have different arrangements of innovation capabilities, namely development capability, operation capability, management capability and transaction capability, ... it was found that startups do not have the four innovation capabilities, but [they] need to develop them in order to transact goods/services in the market, allowing them to become firms. (p. 7)

Moreover, "while the development capability and the transaction capability are the first developed by the startup (and also the most developed ones), the operation and management capabilities need to be developed once the business starts to grow" (Dullius, 2016, p. 7). Since startups have different profiles than established firms, it is necessary to deepen the understanding of their capability building and how they become firms. It is our major assumption that this (i.e., capability building) is precisely the role of the proto-entrepreneurial action, while the startup is his locus of action.

WHAT DO WE MEAN BY PROTO-ENTREPRENEUR?

The nature of entrepreneurial activity has changed over the last decades (Toms et al., 2019). The speed of socio-economic changes, associated with the accumulation and availability of knowledge and new technology of all kinds, have radically altered the dynamics of markets. In the current world, permeated by the action of all sorts

of startups, we have identified a figure who aims to become a typical Schumpeterian entrepreneur, but who has not yet gathered — not only in himself, but also in the organization where he/she works — the minimum capabilities necessary for such endeavor. In short, this agent that aspires to become a Schumpeterian entrepreneur — acting in an established innovative firm — will have to go through certain stages that are not necessarily taken into account by the traditional economic approach (Cha & Bae, 2010).

It is our belief that, to fully understand entrepreneurship and innovation, especially in the 21st century, it is necessary to take a step further and look forward to the process of building innovation capabilities that happens before the challenges and efforts of the Schumpeterian entrepreneur. In other words, we identified a moment, prior to that of the entrepreneurial activity and the breaking of the circular flow, in which the proto-entrepreneur seeks to develop the capabilities that will enable him (and his startup) to break the circular flow and thus become an established innovative firm.

In a broad sense, the conversion of a proto-entrepreneur into an entrepreneur, in the Schumpeterian definition, depends on a process of knowledge accumulation for building the missing innovation capabilities, without which extraordinary profits cannot be reached. This process involves the accumulation and application of technical knowledge and life/work experience. The time required varies, depending on how effectively the proto-entrepreneur assimilates and utilizes new information and knowledge. The successful application of this additional knowledge in developing capabilities is crucial for the transition from proto-entrepreneur to entrepreneur. This process usually happens in startups — here taken as the primary locus of the proto-entrepreneurial action —, and the proto-entrepreneurs should undertake a sequence of activities for building such capabilities.

In this sense, how could we depict the definition of the agent who may start up new ventures, but have not yet been able to break the circular flow? Who is the proto-entrepreneur and what is the process of building innovation capabilities that he is able to perform?

Antecedents

Under Kirzner's (1978) entrepreneurial problem, Allen and Potts (2016) define proto-entrepreneur as "an agent who is endeavoring to engage in entrepreneurial actions, but for whom market prices are an insufficient or incomplete information set, and they require an additional non-price information set, NP, in order to perceive an entrepreneurial opportunity, and therefore to engage in entrepreneurial action" (p. 3). Allen and

Potts (2016) develop the idea of proto-entrepreneur as an economic agent who, before anything else (that is, before acting as an entrepreneur itself), needs to coordinate non-price information with other agents in order to seize exploitable market opportunities. Such ideas are reaffirmed by Allen (2017), to whom the 'proto-entrepreneur problem' precedes the first phase of the Schumpeterian innovation trajectory.

It is the proto-entrepreneur, therefore, who first seeks to gather this non-price information (i.e., knowledge) from the meeting with other agents, before interpreting and crystallizing such information in actionable market opportunities (i.e., knowledge application in technology and products). In this sense, Allen and Potts' (2016) approach reinforces the idea that there would be important prior tasks, before the original Schumpeterian entrepreneurial trajectory.

The prefix 'proto' brings a notion of timing (what comes before) and this temporal notion refers to a process, something that is ongoing or, at least, starting up. The proto-entrepreneur would operate in a sort of 'phase zero' of a potential innovation trajectory, that is visualizing a potentially profitable opportunity. In that sense, Allen (2017) seeks to explore what non-price information proto-entrepreneurs need to look for as well as to solve the problem of triggering market opportunities and becoming, as we argue, typical Schumpeterian entrepreneurs.

From another perspective, Roundtree (2016) details the behind the scenes that underlie the process of invention by proto-entrepreneurs during Startup Weekends, without, however, satisfactorily conceptualizing these agents. She is more concerned with explaining how the Startup Weekends are constituted *in loci* where ideas are generated and refined. In general, it leads to the belief that, before becoming entrepreneurs, proto-entrepreneurs participate in events like these to validate their ideas and leverage venture capital. But it is certain that such a proposal is very far from ours insofar as, among other things, we envision a minimally structured process of competence development that may (or may not) culminate in the transformation of a proto-entrepreneur into a *de facto* entrepreneur. And of course, the 48 hours or so of a Startup Weekend are not enough to fully develop these capabilities.

Despite this, these events, consolidated worldwide, attract a huge number of aspiring ('fledgling') entrepreneurs or, in other words, attract a huge variety of 'would-be entrepreneurs,' as well as angel investors and venture capitalists. In a quasi-definition, Roundtree (2016) proposes that proto-entrepreneurs account for those agents with broad ideas, but who have not yet constituted business. But the focus of Roundtree's work

is the Startup Weekend itself, not the concept of proto-entrepreneur, which distinguishes substantially it from ours, whose focus lies on the role of proto-entrepreneur itself.

These findings, however, represent a starting point for the development of a more precise notion of the proto-entrepreneur — which reinforces and justifies the need for further and deeper research.

Further defining the proto-entrepreneur

Our proposal combines the gathering effort of knowledge-based assets (by Allen, 2017 and Allen & Potts, 2016), the need for a market targeting (Allen, 2017) and the validating process of ideas by/for venture capitalists made by proto-entrepreneurs. By grouping these important contributions as a patchwork of capabilities, i.e., development, functioning, business, and marketing, we will propose the proto-entrepreneur as the articulator apprentice of the (still) missing capabilities of the (not yet) firm.

We consider the proto-entrepreneur as the agent who is aspiring to become a typical Schumpeterian entrepreneur (and, thus, looking forward to run an established firm), but that has neither yet accumulated enough technological and organizational knowledge nor built the missing innovation capabilities to transform an idea into a profitable business. In other words, the proto-entrepreneur has not yet (re)combined materials and forces that may be at his fingertips in order to make profits. Hence, to elaborate on this concept, we shall incorporate a procedural notion, as the dynamics behind the creation of new products and new ventures in the 21st century requires both an evolutionary behavior and new forms of action of the economic agents (Lévesque & Stephan, 2019; McMullen & Dimov, 2013).

After identifying a business opportunity, the aspiring entrepreneur supports themselves in the creation of new ventures and seeks the best combination of production factors, differing from those established by the market thus far (Vogel, 2017) — in sum, everything to make extraordinary profits. After all, it is the ability to generate profit that both defines and distinguishes a proto-entrepreneur from a true entrepreneur (Schumpeter, 1934).

However, this trajectory (and profits) is not always positively achieved by these new ventures, such as startups. It occurs because a startup, differently from an established firm, is incomplete by nature. The lack of human and financial resources, for example, can impact the initial conditions and thus have an impact on the innovation speed (Block et al., 2017; Heirman & Clarysse, 2007). As a matter of fact, the startup does

not have all the functions performed by a firm, that is, it does not yet have the capabilities to enable it to achieve extraordinary profits. In this sense, it is necessary to deepen the understanding about how startups can build their missing innovation capabilities to better understand the role of the proto-entrepreneur in this process.

THE STARTUP AS THE LOCUS WHERE THE PROTO-ENTREPRENEUR TRIES TO BUILD INNOVATION CAPABILITIES

In the last decade, entrepreneurship literature has highlighted the importance of startups for the economic development of a city, a region, or even a country (Adler et al., 2019; Pan & Yang, 2019). They emerge as new business models sustained by the quest for innovation that enables rapid growth and, consequently, can bring extraordinary profits to different stakeholders (Freeman & Engel, 2007). They are generally knowledge-intensive and offer technology-based solutions for consumers or other businesses.

In addition to these established concepts, we propose the idea that startups are also the *loci* where proto-entrepreneurial action takes place. Actually, startups cannot be taken as fully formed and transacting firms — in the sense proposed by Coase (1937, 1991) and Baecker (2006). A startup, as its name suggests, is the beginning of something, a first step, a real start: it is only 'starting up' a future new firm. In the very essence, it considers time-lapse, evolution, and willful future — which, for our interest, should lead to the founding of an 'established firm' able to compete in the market.

As mentioned before, a firm, in its nature and form, has already established a set of characteristics and capabilities, and performs different functions that support its (also already built) competitive pattern of survival. Developing, producing, managing, and selling products (all at the same time) depends on minimum (already established) conditions of knowledge, information, creativity, flexibility, efficiency, productivity, and quality, which reflects the firm's capabilities (Guan & Ma, 2003; Yam et al., 2011).

In the case of a startup, it is reasonable to think that all those innovation capabilities in the different dimensions are not yet available. Startups are temporary organizations in "the process of discovering, developing, and implementing viable and scalable business models to exploit market opportunities" (Ehrenhard et al., 2017, p. 26). Even more, it is fully conceivable that this initial venture has not yet managed to break Schumpeter's circular flow. The startup is responsible for setting the skills needed, before, to allow becoming a firm, later.

The ultimate role of the proto-entrepreneur

The proto-entrepreneur is a fundamental part of this transitory scenario. Before being a Schumpeterian entrepreneur, it is the aspiring entrepreneur (the proto-entrepreneur) who can start-up the process of establishing a full-fledged firm, since to get out of the circular flow, a novel effort (in the product, process, management, market, etc.) is necessary.

As aforementioned, new ideas, venture capital, and market are only the first challenges of the proto-entrepreneur. However, having the capabilities of the firm in mind, we stand for better understanding his very specific role on how to put all those parts together. With an idea, funding, and potential niches, the startup is where the missing capabilities of the future firm are to be built and articulated by the proto-entrepreneurial action. In short, it is not possible to have a complete firm without a full set of capabilities. Its planning and building process is the ultimate function of the proto-entrepreneur.

For example, the incubation period of the (quasi-) firm in a tech-park, the creation and validation of prototypes or MVPs (minimum viable products), and the search for external financing are some of the inherent activities that almost all agents aspiring to the condition of contemporary entrepreneur have to undergo. Other than ideas, funding, and market spots, the proto-entrepreneur must especially articulate knowledge and the set of necessary skills and routines to build each one of the innovation capabilities needed to justify the future business (i.e., a full firm with development, operations, management, and transactions). To break the circular flow of regular businesses and thus to become a full-flag Schumpeterian entrepreneur, and taking into account the challenge behind imagining and creating a new company based upon innovation and aiming at extraordinary profits, the role of the proto-entrepreneur is to pave the way for building the missing capabilities in a startup.

This process depends not only on understanding the different capabilities (i.e., development, operations, management, and transaction) and their roles (in and for the future business), but primarily on identifying the best sequence of building capabilities for each particular startup. Thus, to enable the transformation of a startup into a firm, there is a set of innovation capabilities that must be built.

The startup (ideal) sequence for building innovation capabilities

As a rule, it is assumed that startups do not have the four capabilities above mentioned fully developed (Dullius, 2016). Thus, they must rely on the proto-entrepreneur's awareness on how to build them in a po-

tential logical sequence. The possibility of making new combinations arises all the time and it is precisely this ability to recombine resources and production factors, in a firm under construction (startup), obtaining profits, that defines the transition from a proto-entrepreneur to a typical Schumpeterian entrepreneur.

Some authors have suggested different sequences for the process of building capabilities. [Picken \(2017\)](#) seeks to divide the process of this entrepreneurial endeavor into four stages: startup, transition, scale, and exit. It explains startups' evolution from an informal structure in which the business model is designed for the professionalization of a high-growth company. However, these stages portray neither the scope nor the shape of the expected future company.

[Dullius \(2016\)](#), using [Zawislak et al.'s \(2012\)](#) four-fold model of innovation capabilities and based on the reality faced by Silicon Valley-based startups, proposes not only different paths for startups, but also the exact preferred sequence for different kinds of startups. There would be those that start from technological purposes (sequence 1: development, transaction, operations, and management) as well as those that come from market insights (sequence 2: transaction, development, operations, and management), where the only difference is in the ordering of the first two capabilities to be built. Using [Pufal and Zawislak's \(2021\)](#) approach on firm-oriented innovation capabilities (development and transaction) and organization-oriented innovation capabilities (operations and management), we can state that targeting the 'expected future established firm' should come before the practical organizational tools.

For analytical purposes, we consider two major contextual divides. First, one should take for granted the logical sequence of knowledge, assets, and resources needed to deal with novelty in the 21st century. Then, one must not underestimate the overwhelming technological appeal, mainly driven by the digital revolution, where new ideas and new products arise much more from the state of the art than from market expectations.

So, the very first stage is to build development or transaction capabilities. In that way, the aspiring entrepreneur and its team use different tools (i.e., canvas, design thinking, and so on) to streamline the creation and development of the product to enhance its success ([Rasmussen & Tanev, 2015](#)). Capital injections from various types of investors (i.e., venture capitalists, angel investors, family funding, partnerships) are required to accelerate the development process ([Freeman & Engel, 2007](#); [Stayton & Mangematin, 2016](#)). It allows the fledgling firm to develop and test a minimally viable solution (MVP) in the marketplace as well as to create a fitting business model, derived from its strategic longings and

the feedbacks of its potential customers/users ([García-Gutiérrez & Martínez-Borreguero, 2016](#)).

Different from an established firm (in which the developed product goes to production), the startup has to validate its product through a business model by defining to whom to sell, where to sell, and how to sell. Scope, and not yet scale, is the goal. While creativity and flexibility help a startup to create and adjust its value proposition to better fit the market, competition will force it to overgrow from a solid market foundation to not succumb to its future rivalry ([Freeman & Engel, 2007](#)).

With value solidness and business potential, the startup needs to scale up. To grow in scale and to gain traction, the startup's third step is to build the operations capability. It has to put all its efforts and resources into a minimal production volume, able to efficiently sell, promptly fulfill orders, competitively deliver this validated solution in the marketplace, and, above all, give rise to the expectation of making positive returns at viable costs.

Although this acceleration of production (and sales) is generally beneficial to the startup ([Eisenhardt & Tabrizi, 1995](#); [Kessler & Bierly 2002](#); [Moogk, 2012](#)), it ultimately requires organization. The last step, taking the four-fold capability model as the standard, is through management capability. This is not to say that there was no need for management before. Of course, as the startup evolves, many management techniques and tools end up being gradually adopted in order to minimally prevent the lack of control, the imbalance of responsibilities, and misallocation of resources ([Brush et al., 2008](#); [Capelleras & Greene, 2008](#)).

However, given the primary objective of management, namely stability and control, a startup needs, before — and above — that, change and evolution ([Pufal & Zawislak, 2021](#)). If 'born prematurely,' the management capability control function can jeopardize the startup's evolution toward its desired 'nirvana,' that is, to achieve the status of an established firm.

Table 1 synthesizes the process of building innovation capabilities within a startup and the corresponding proto-entrepreneur actions.

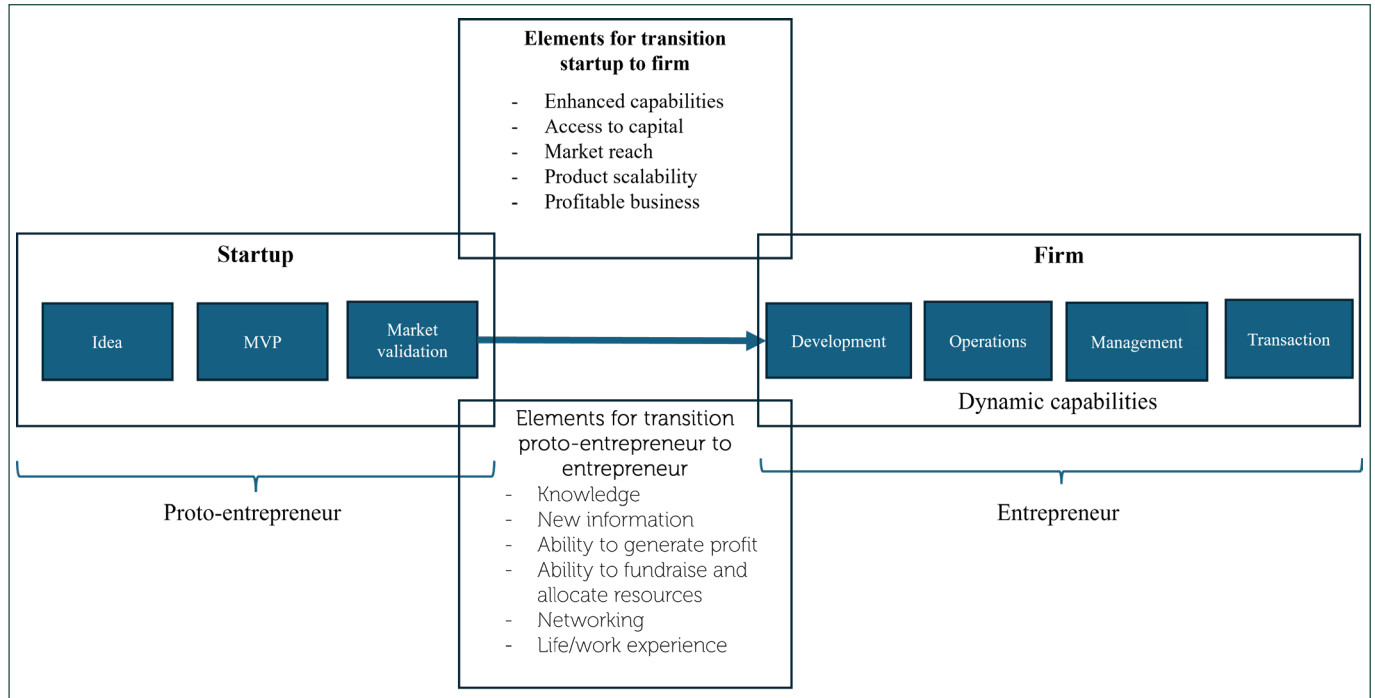
Table 1. Building capabilities and proto-entrepreneur actions.

Sequence of capability building	Proto-entrepreneur actions
Development capability	Ideation, design thinking, canvas, MVP
Transaction capability	Business model design, marketing scope, consumer profile, marketplace
Operations capability	Scale up, minimal production volumes, orders, and delivery
Management capability	Organization, control, responsibilities, management techniques and tools

Note. Developed by the authors.

This sequence, under the auspices of the different actions of the proto-entrepreneur, will allow a newly developed product to have a potential market spot that can serve as a springboard to increase real operational supply in such a way that, with the possibility of or-

ganizational efficiency gains, it can be considered innovative and earn extraordinary profits. At that point, the startup, having completed its innovation capability building cycle, may be qualified as an established firm. This cycle is represented in Figure 1.



Source: Developed by the authors.

Figure 1. The transition from proto-entrepreneur to entrepreneur.

Therefore, the aspiring entrepreneur should depict a business model into this sequence of capability building in order to facilitate and sustain the growth of the nascent firm (García-Gutiérrez & Martínez-Borreguero, 2016). However, this does not happen immediately. There is always a 'temporal tension' between the current state and the desired (proto-)entrepreneurial intention (Stayton & Mangematin, 2016). In cases where, even with the launch of a product on the market (probably, made to soon), the startup does not obtain extraordinary profits capable of returning the investment (maybe because a mismatch of resources and market or even the lack of operations capability, for example), it is possible to say that such a sequence of capability building was not followed. Only when the business model of a startup succeeds (i.e., the finished ensemble of built capabilities) is that an established firm emerges. Therefore, only the full-fledged combination of innovation capabilities, logically built by the proto-entrepreneur inside such a successful business model, gives rise to the true Schumpeterian entrepreneur.

In short, it is clear that there are factors that favor the transition of a proto-entrepreneur into a true entrepreneur and they include, although they are not nec-

essarily limited to only these, the following elements: more knowledge, capacity to process more information, ability to generate (extraordinary) profits, ability to raise investments, ability to allocate resources appropriately, ability to form and maintain networks, life/work experience, etc.

In the same way, there are also factors that favor the transformation of what is the *loci* of proto-entrepreneurial action, startups, into firms, considered to be the *loci* of entrepreneurial action. We mention here, namely, the following factors (although we know that the list is not limited to these): improvement of capabilities, access to capital, market reach, product scalability, business profitability, etc.

Obviously, the absence, deficiency, and/or non-observance of these factors will harm the transformation processes, whether of proto-entrepreneurs into entrepreneurs, or of startups into firms.

Theoretical, managerial, and policy implications

The academic implications of this effort are to try to fill some of the gaps of this emerging new concept. The lack of a specific term for individuals in the process of starting a business, but who have not yet become

entrepreneurs, creates ambiguity and discomfort for writers on this topic. How can we lump together established entrepreneurs, who generate billions of dollars annually, with aspiring entrepreneurs who are still uncertain about their market offerings? Referring to both as entrepreneurs is clearly inadequate; they are distinct groups that require different terminology. Therefore, the first and perhaps most important contribution to the academic field is greater precision and rigor. Furthermore, the paper aims to juxtapose a part of the entrepreneurship literature with that of the capabilities of the firm. The paper highlights the role of the proto-entrepreneur in the process of building such resources (capabilities).

There are also practical implications, once it may help inspiring entrepreneurs to better prepare for the endeavor of 'starting a startup' through the sequence of capabilities to be built. The awareness about such a sequence of building capabilities is key for any individual who aspires to become an entrepreneur (of a full capability firm). By knowing these basic steps, the proto-entrepreneur will be able to avoid the damage caused by poor sequencing, increasing his chances of breaking the circular flow, becoming an innovator and making extraordinary profits (in a great logic of economic development).

To improve policy design and implementation for entrepreneurial processes, it is important to explore the concept and this 'new' persona at the center of any special programs and initiatives that aim to promote and accelerate the process of training entrepreneurs. With a practical, simple-to-operationalize, and clear concept, managers of innovation hubs, technology parks, and similar entities – whether public or private – could more effectively implement policies that enhance the transformation of proto-entrepreneurs into full-fledged entrepreneurs. This could involve developing training packages, behavioral modeling of startups, simulations, and other strategies to improve transition techniques and expedite the overall process. Applying this concept could simplify the management of entrepreneurial ecosystems.

FINAL CONSIDERATIONS

This paper challenged the trivialization of the concept of entrepreneur(ship). We conclude that the main contribution of the paper lies in the original explanation of a not so new phenomenon, something almost omnipresent in contemporary society, but still lacking theorizing: the 'proto-entrepreneurship.' We sought to depict this concept by differentiating it from the traditional definition of full-flag entrepreneur.

We propose the concept of proto-entrepreneur to define those agents who engage in actions that flirt with entrepreneurship but have not yet broken the circular flow of the economy for the simple fact that they have not yet been able to launch products, services, business models, nor have profited from these potential innovations. It can be the one that has made a real value proposition, but not yet developed a business model or marketed the startup itself. Or is the one that has just scaled up, but has not yet made an economic business profit by selling products in the market. It may be selling its products, but does not know yet how to manage its resources. In this context, the proto-entrepreneur is not (yet) a Schumpeterian entrepreneur (but he aspires to be one of them).

Moreover, we have assumed that, while the entrepreneur is responsible for guaranteeing the existing arrangement of innovation capabilities of the established firm, the proto-entrepreneur is the former responsible for articulating and building the (still) missing innovation capabilities of a start-up. Differently from the Schumpeterian entrepreneur, who looks forward to finding different arrangements of the existing innovation capabilities (of the firm), the proto-entrepreneur has to build and articulate the missing innovation capabilities (of the startup).

Starting (up) by the development capability, where ideas and value propositions are initially worked on, the proto-entrepreneur seeks to build the transaction capability to sustain a competitive market-oriented business model. Only then he and his startup are able to scale up throughout the operations capability and reach real market orders and deliveries standards. By establishing the cost-efficiency building blocks of a (future) firm, management capability allows the final step.

Regarding the study's limitations, we acknowledge that, due to space and scope constraints, we could not explore all the aspects we desired. There are still some unclear points in explaining the transition from proto-entrepreneurs to entrepreneurs, which can be addressed through empirical studies focused on this issue. While this article centered on expanding and deepening knowledge and developing capabilities, future studies could enhance the explanation.

We argue that concepts such as entrepreneurial intention might be valuable in the process of transforming ordinary individuals into proto-entrepreneurs. However, this falls outside the scope of our current manuscript and remains a limitation of this study, as well as a suggestion for future research.

For future studies, it is suggested to explore the transition processes of ordinary individuals into proto-entrepreneurs and from proto-entrepreneurs into

entrepreneurs themselves. Analyzing how proto-entrepreneurs develop and improve each of the elements listed in this paper is crucial to fully understand the specificities of this transition process. By focusing on these developmental stages, researchers can gain deeper insights into the factors that facilitate or hinder entrepreneurial success and the unique challenges faced during each phase. This comprehensive analysis will contribute to a more nuanced understanding of entrepreneurship and inform strategies to support aspiring entrepreneurs effectively.

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Authors

Fábio Freitas Schilling Marquesan 

Universidade Federal do Rio Grande do Sul, Escola de Administração
Av. Washington Luiz, n. 855, Centro, CEP 90010-460, Porto Alegre, RS, Brazil
fabioschilling79@gmail.com

Paulo Antônio Zawislak 

Universidade Federal do Rio Grande do Sul, Escola de Administração
Av. Washington Luiz, n. 855, Centro, CEP 90010-460, Porto Alegre, RS, Brazil
paulo.zawislak@ufrgs.br

Guilherme Freitas Camboim 

Universidade Federal do Rio Grande do Sul, Escola de Administração
Av. Washington Luiz, n. 855, Centro, CEP 90010-460, Porto Alegre, RS, Brazil
guilherme.camboim@ufrgs.br

Authors' contributions

1st author: conceptualization (equal), formal analysis (equal), investigation (equal), methodology (equal), project administration (equal), supervision (equal), validation (equal), writing - original draft (equal), writing - review & editing (equal).

2nd author: conceptualization (equal), formal analysis (equal), funding acquisition (equal), investigation (equal), methodology (equal), project administration (equal), validation (equal), writing - review & editing (equal).

3rd author: conceptualization (equal), formal analysis (equal), methodology (equal), writing - review & editing (equal).