

# Dynamic Capabilities of Start-Ups

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## Abstract

Combining the literature on dynamic capabilities, entrepreneurship, and start-ups, we can come across many new, interesting findings, which are not yet sufficiently explored. The aim of the study is to summarize the dynamic capabilities of start-ups in a literature review. We found that start-ups have fewer, more focused, cheaper dynamic capabilities, which capabilities are based much more on the entrepreneurs' skills. The development of dynamic capabilities takes place with the help of entrepreneurs, and as a result, these are more flexible than the dynamic capabilities of large companies. The implication for future research is that, when examining the dynamic capabilities of start-ups, the entrepreneurs – and their capabilities - should also be examined separately.

**Keywords:** start-ups, dynamic capabilities, entrepreneurship

**JEL Codes:** L26, M13

## Introduction

The literature on dynamic capabilities has undergone significant advancement since the few initial articles. [Schilke – Hu – Helfat, 2018]. The initial contrast of definitions was cleared up and the incomplete theory was supplemented, but more unexplored fields remained, including the situation of start-ups and dynamic entrepreneurial / managerial capabilities. Dynamic capabilities can be defined as “the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environment” [Teece – Pisano – Shuen, 1997: 516].

Although the research on start-ups is scarce [Zahra - Sapienza - Davidsson, 2006], the examination of dynamic capabilities seems essential among them. This is due to the fact that without dynamic capabilities, in industries where the environment changes rapidly, gaining and maintaining a competitive advantage becomes difficult [Bhatt –Grover, 2005]; [Teece,

2007], [Wang-Ahmed, 2007]. In these situations, the role of entrepreneurs is also enhanced.

One source of difference between organizations lies in their managers: even if the impact of the external environment is the same for each organization, individual managers may perform different actions, which ultimately results in different performance [Adner & Helfat 2003]. Higher-order capabilities found in smaller organizations often depend on the psychological and social characteristics of the entrepreneurs [Lant 2003]. Organizational growth thus depends, in part, on the extent of the possibility to shape the capabilities of the founders into the dynamic capabilities of the organization [Brush et al. 2002]. In this literature review, the findings about the dynamic capabilities of start-ups is summarized, paying particular attention to the role of the individual/entrepreneur.

### **1. Differences between the dynamic capabilities of start-ups and older, more established organizations**

Most of the studies related to dynamic capabilities have been based on larger companies ([Luo, 2000]; [Carpenter et al., 2001]; [Rindova – Kotha, 2001]; [Zahra et al., 2006]). One of the reasons for this is that more complex organizational forms may be necessary to realize the benefits offered by traditional, routine-based dynamic capabilities [Eisenhardt - Martin, 2000]. Long-term focus on the benefits requires a well and tactically managed organizational structure [Benner, 2003]. The dynamic capabilities of companies present in large, multinational markets are expected to be more amplified and leveraged than those of organizations working only on the domestic market [Teece, 2015]. It is worthwhile to examine companies with different organizational characteristics separately, because dynamic capabilities also have different effects due to these different organizational characteristics [Arend, 2014].

Dynamic capabilities can occur not only in large companies, but in the same way in start-ups [Teece, 2007] or smaller companies [Teece, 2012]; [Helfat - Winter, 2011]. This is because, in these later cases, they are also necessary for financial success [Teece, 2007] and for the creation of innovation output [Hanchi - Kerzazi, 2020]. At the same time, we find many differences regarding the dynamic capabilities of old, established, large companies and start-ups. The differences between the old and "new" companies are summarized in Table 1 below.

**Table 1: A summary of the differences between the dynamic capabilities of older, large organizations and start-up organizations**

(Source: own construction)

Older, more established organizations	Dimensions	Younger, smaller organizations, start-ups
<ul style="list-style-type: none"> <li>• Better known, more research</li> </ul>	<p><b>Research</b></p>	<ul style="list-style-type: none"> <li>• Less known, less research</li> </ul>
<ul style="list-style-type: none"> <li>• Fixed routines, resource lock-ins, cultural rigidities</li> <li>• More resistant to change</li> <li>• Easier change of strategic directions</li> </ul>	<p><b>Agility</b></p>	<ul style="list-style-type: none"> <li>• Easier reconfiguration</li> <li>• Easier change of strategic directions</li> <li>• Less resistant to change                             <ul style="list-style-type: none"> <li>• Faster reaction</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Internal, abundant resources</li> </ul>	<p><b>Resources used</b></p>	<ul style="list-style-type: none"> <li>• External resources</li> </ul>
<ul style="list-style-type: none"> <li>• Experiment, imitation, trial and error</li> </ul>	<p><b>Development</b></p>	<ul style="list-style-type: none"> <li>• Improvisation, imitation, trial and error</li> </ul>
<ul style="list-style-type: none"> <li>• Better innovation output</li> <li>• Better performance than smaller organizations, but worse than young organizations</li> </ul>	<p><b>Performance</b></p>	<ul style="list-style-type: none"> <li>• Better citation (regarding innovation)</li> <li>• Young organizations: better performance / Smaller organizations: worse performance</li> </ul>
<ul style="list-style-type: none"> <li>• More, but less focused dynamic capabilities</li> </ul>	<p><b>Stock of dynamic capabilities</b></p>	<ul style="list-style-type: none"> <li>• Less, but focused dynamic capabilities (according to their self-assessment they have more dynamic capabilities)</li> </ul>
<ul style="list-style-type: none"> <li>• Supplementing the incomplete portfolio of capabilities and extending the current capabilities</li> </ul>	<p><b>Goal of dynamic capabilities</b></p>	<ul style="list-style-type: none"> <li>• Supplementing the incomplete portfolio of capabilities</li> </ul>
<ul style="list-style-type: none"> <li>• More expensive dynamic capabilities</li> <li>• Complex dynamic capabilities, that gets simpler</li> </ul>	<p><b>Type of dynamic capabilities</b></p>	<ul style="list-style-type: none"> <li>• Cheaper dynamic capabilities</li> <li>• Simple dynamic capabilities that gets more complex</li> </ul>
<ul style="list-style-type: none"> <li>• Based on the organizational routines</li> <li>• Entrepreneurs have less effect on dynamic capabilities</li> </ul>	<p><b>Role of entrepreneur</b></p>	<ul style="list-style-type: none"> <li>• Based on the capacities of the entrepreneurs</li> <li>• Entrepreneurs have more effect on dynamic capabilities</li> </ul>

We have little information on the development of dynamic capabilities [Farkas, 2022a]; [Cyfert et al. 2021], but it usually starts with the appearance of an external stimulus [Farkas, 2022b], where established businesses mainly use their own abundant resources for development, while start-ups often look for external resources to minimize their losses [Hattore et al. 2021]; [Slaouti 2021]; [Ma et al., 2015]. A significant part of the development process can be outsourced, even, so that most of the internal resources can be focused on the development of the main activity [Ma et al., 2015]. For development, younger organizations use improvisation more often compared to older organizations. The experiment, since its conduct requires significant organizational and/or individual skills, is more typical in the case of larger organizations. The use of the trial-and-error design method initially increases with the age of the organization, and then, after a peak, it begins to decline. Imitation is the only method of developing dynamic capabilities that is used in start-ups and older, more traditional organizations as well [Zahra et al., 2006].

Start-ups change strategic directions much more easily [Ma et al., 2015]. Their dynamic capabilities also change more quickly, because less fixations need to be released in order to implement changes [Zahra et al., 2006]. For older companies, transformation is a challenge when using dynamic capabilities [Teece - Peteraf - Leih, 2016]. In these organizations, the numerous fixed routines, the lock-in of a significant part of the resources and the cultural rigidities also prevent an easy change of direction. On the other hand, young organizations and start-ups can change faster and to a greater extent in order to take advantage of the opportunities that arise at a given moment [Ma et al., 2015]. It is almost mandatory for start-ups to build dynamic capabilities and have agility in order to respond to environmental changes [Teece et al., 2016]. Smaller and younger organizations have more liability [Arend, 2014], but at the same time, they can compensate for this by the fact that, in the absence of fixed patterns that make changes difficult, their existing resources can be more easily reconfigured in order to comply with the market [Ma et al., 2015].

Although start-ups, based on their self-evaluation, believe that they have significantly more dynamic capabilities than older organizations [Arend, 2014], mature companies have more dynamic and static capabilities that are better developed and more widely applicable [Ma – Lang – Sun–Singh, 2021]; [Zahra et al., 2006]. According to some authors [Pigola – Rezende – van der Poel - Yamacake, 2022], the dynamic capabilities in terms of environmental change are not very different in the case of start-ups and other types of companies, but differences are visible in the types of dynamic capabilities. Holding dynamic capabilities as a type of organizational capability is not free for organizations. To ensure that the given ability and

the routines related to it are not forgotten, it is necessary to repeat them. It is proportionately more expensive to maintain capabilities in smaller organizations, so these organizations usually have fewer of them [Helfat - Winter, 2011]. Smaller organizations often kept dynamic capabilities that were cheaper to operate and maintain, even though they differentiated them less in the market [Arend, 2014]. Looking at the development of organizations over time, we can see that they initially have simple, cheap-to-operate dynamic capabilities, then, as time progresses and the size of the firm increases, these capabilities become more and more complex. However, with the further growth of the organizational size, the capabilities become simpler again [Zahra et al., 2006].

The purpose of dynamic capabilities and their impact on performance also changes depending on the characteristics of the organization. The goal of newer, smaller organizations is to supplement the incomplete portfolio of capabilities in order to exploit new opportunities. Meanwhile, older organizations not only want new capabilities, but also to expand the range of use of the current ones [Zahra et al., 2006]. These organizations are not able to use dynamic capabilities in the same way: young organizations may receive more attention from the market as a result of investing in technology, but larger organizations generate more innovation output (e.g. patents) through their dynamic capabilities [Kotha – Zheng – George, 2011]. Not only the use of dynamic capabilities, but the characteristics of the given capabilities can also cause a difference: dynamic capabilities have an indirect effect on performance [Shi – Yuan – Lee, 2022], but this effect on performance can be influenced by participation in an acceleration program [García- Ochoa - De-Pablos-Heredero - Jimenez, 2022]. Among start-ups, it is not (only) technological (dynamic) capabilities that determine the growth of the firm, but rather, the ability to learn from customers and create scalable, repeatable and profitable business models [Teixeira – de Moura – Lopes – Marconatto – Fischmann, 2021]. Young and smaller organizations generally behave in the same way in terms of dynamic capabilities. However, based on the research results of Arend [2014], the presence of dynamic capabilities increases the performance of young organizations at a higher rate than that of older, larger organizations. At the same time, the performance of smaller organizations is inferior to both old and young organizations.

## **2. The role of entrepreneurs in dynamic capabilities of start-ups**

In the case of dynamic capabilities, perhaps the biggest difference between start-ups and more traditional organizations is found in individuals and entrepreneurs. Small companies and start-ups can also have dynamic capabilities, only they are based on human and entrepreneurial capabilities

to a greater extent than on organizational routines [Teece, 2012]. At the time of foundation, the dynamic capabilities do not yet appear in the entire organization, they can only be found at the individual or team level [Bocardelli – Magnusson, 2006]. These individual or small group capabilities then make up the dynamic capabilities [Corner – Wu, 2012].

In the case of start-ups, managers and entrepreneurs play an important role in the relationship between resources and dynamic capabilities. Managers identify, integrate, reconfigure resources [Corner - Wu, 2012], or while the resources remain unchanged, they only transform their role and function [Bocardelli - Magnusson, 2006]. The latter is an important finding, since start-ups usually have significantly fewer resources at the start, so they often do not have the opportunity to acquire new resources, only to transform the function of their existing ones.

The impact of dynamic capabilities [Song – Droge – Hanvanich – Calantone, 2005] and resources [Newbert, 2005] on performance may also differ depending on the dynamics of environmental change. In rapidly changing industries, the presence of external capital is less important, while in markets with slower dynamics, the companies of entrepreneurs who invest their capital in the company will be more successful [Newbert, 2005]. Of course, the effect of these capital investments is stronger if the entrepreneur has organization-specific knowledge and experience [Kor – Mahoney, 2005].

Although being an entrepreneur is an important factor in founding a start-up [Póta – Huszák, 2022], when establishing a start-up, the organization still has limited options [Ma et al., 2015] and relies significantly on the previous experiences of the entrepreneur. When starting up, the majority of organizations do what their founders did in the past [Ma et al., 2015]. But the success of organizations does not depend on the previous experiences of the entrepreneur. In fact, in the case of dynamically changing markets, the previous experiences of the entrepreneur can even be detrimental to the success of the new organization [Newbert, 2005]. The reason for this being that there is no deliberate learning (yet) at the start of start-ups, but entrepreneurs can constantly acquire new knowledge through interactions with the market. Therefore, the main question is how this new knowledge is accepted and how it is translated into the language of organizational actions [Ma–Zhou–Fan, 2015]. If the entrepreneur has abundant resources, external actors prefer to develop a relationship with the start-up and it is easier for the organization to maintain these relationships [Wu, 2007].

In the case of start-ups, it would be difficult to separate individual and organizational dynamic capabilities, the two groups of capabilities are intertwined. Still, in other types of organizations, there is also a strong dependence between them [Pigola et al., 2022]. The uniqueness inherent in

individual actions can determine the success of given organizations, because the more dynamically a market changes, the greater differences we can experience in managerial actions [Newbert, 2005]. Different leadership roles [Gao – Liu, 2021] and different mental images also have an impact on the dynamic capabilities of start-ups [Schoemaker – Heaton – Teece, 2018]; [Pigola et al., 2022]. A good mental model in itself can be a source of temporary competitive advantage, but in the event of a change in the environment, this must also be changed in order to maintain the advantage [Pigola et al., 2022]. Consequently, we can also define dynamic (cognitive) capabilities at the level of individual cognition: these are the capacities that create, modify or extend existing mental models [Thiele – Fellnhofer, 2015]. The existence of cognitive images is not necessarily beneficial for the organization. If the entrepreneur does a lot of planning before founding the organization, he creates many cognitive images without testing them in a market environment. In these cases, the individual tries to match reality to his own cognitive images, instead of matching his cognitive images to reality [Thiele - Fellnhofer, 2015]. Though at the time of foundation the organization can feed on the existing knowledge and experience of the entrepreneur, when the operation starts, learning must also start at the level of the entrepreneur and the level of the organization [Ma et al., 2015].

The manager not only passively observes the operation of dynamic organizational capabilities, but also uses them. In fact, according to Teece [2017], the primary task of the manager is to supervise these higher-level capabilities. Dynamic capabilities must be used in very different organizational environments, where managers are tasked with operationalizing it for the given setting [Shoemaker et al., 2018]. Of course, not only in use, but also in construction, the task of management is significant [Kor - Mahoney, 2015] It must decide where and when it is necessary to develop new dynamic capabilities. This is a long development process in which a visionary leader can be a good shortcut [Shoemaker et al., 2018].

## Conclusion

Most of the studies related to dynamic capabilities are based on older, larger, often multinational companies [Zahra et al., 2006]; [Teece, 2015]. At the same time, dynamic capabilities may differ depending on organizational characteristics [Arend, 2014], so it is justified to examine start-ups separately. In the study, a summary based on a literature review was presented, to show which are the aspects in which we can see a difference in the dynamic capabilities of the long-standing and newer organizations.

Although less research is available among start-ups, we can state that start-ups have fewer, more focused, cheaper dynamic capabilities, which capabilities are based much more on the entrepreneurs' own cognitive,

managerial and leadership skills. The purpose of these dynamic capabilities, in the case of start-ups, is supplementing the incomplete portfolio of ordinary capabilities. As a result, young organizations can even achieve better performance than older, more established organizations. The development takes place with the help of entrepreneurs, but usually with the involvement of external resources, and at the end of this process, dynamic capabilities are created that can be changed more quickly and flexibly.

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