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Small-firm growth-enabling capabilities: A framework for young technology-based firms

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Highlights

- Dynamic approach used to explore application and significance of dynamic capabilities for young technology-based firms.
- Entrepreneurial, resource-orchestration, and legitimation challenges characterise growth transitioning difficulties.
- Learning, absorptive, adaptive, networking, innovative, and individual capabilities as growth-enabling capabilities.
- Comprehensive framework provides integrative insights to relate growth-enabling capabilities and dynamic growth challenges.

Abstract

Acknowledging the importance of capabilities for growth and the non-linearity of young technology-based firms' (YTBFs') growth trajectories, we adopt a dynamic-states perspective to investigate how YTBFs can leverage internal capabilities to enable the critical transitions of their dynamic growth process. We suggest that such transitions are characterized by three inherent types of challenges—entrepreneurial, orchestration, and legitimation challenges—that YTBFs are confronted with throughout this process. Given common liabilities of smallness, newness, and volatility these firms face, we argue that YTBFs can benefit from a better understanding of which capabilities are critical for, and what role they may play in, tackling these challenges. Using a qualitative, systematic combining approach we find six growth-enabling capabilities: learning, absorptive, adaptive, networking, innovation, and individual capabilities. Although each is equally important for enabling dynamic growth transitions, the importance of a capability for a YTBF depends on where and how it is positioned in its growth process. Our study contributes to the strategic entrepreneurship literature by isolating and exploring how and when growth-enabling capabilities are relevant to YTBFs and how they can be applied. We develop a comprehensive framework to illustrate these relations and provide practical implications for YTBF managers.

Keywords

Growth, Capabilities, Small firm, High-tech, Dynamic state, Young technology-based firms

1. Introduction

Organizational growth is a common goal among entrepreneurial firms (Desantola and Gulati, 2017). Although many firms struggle and fail to achieve it, growing the organization has clear advantages, such as helping ventures overcome the (common) liabilities of smallness and newness (Chen et al., 2009) and increasing their likelihood of survival (Gilbert et al., 2006; Lundmark et al., 2020; Nicholls-Nixon, 2005). Furthermore, from a policy perspective, organizational growth is often credited as a significant driver of economic prosperity (Grilli, 2014). Researchers have therefore thoroughly explored characteristics at the individual, team (Unger and Frese, 2011), and firm level (e.g., Eisenhardt and Schoonhoven, 1990) in relation to growth outcomes (e.g., increased headcount or sales) to better understand the intricacies underlying firm growth (Davidsson et al., 2005; Gupta et al., 2013; Lee, 2014; Macpherson and Holt, 2007).

Yet despite their growth objectives, many young firms find it difficult to achieve in practice (European Commission, 2020; Garnsey and Heffernan, 2005; Knaup, 2005; Reypens and Rückert, 2020). This is particularly true for those active in extremely volatile technology-based environments (Chorev and Anderson, 2006; Kazanjian, 1988). Recent reviews on entrepreneurial growth show evidence of a large gap between firm creation and firm growth achievements in these environments (Autio, 2016; Duruflé et al., 2017; Desantola and Gulati, 2017). While external factors such as competition can plausibly be listed as reasons for hindering technology-based firms' growth, Marmer et al. (2011) blame such firms' self-destructive traits. Strong technology orientations represent these firms' strengths (Berry, 1998; Gruber et al., 2013), yet they often lack the managerial background or expertise that would provide them with strategic knowledge (Hughes et al., 2020). Firms where management is comparatively more comfortable with technology might thus be subjected to poor judgements concerning firm needs, thereby hampering their growth (Shepherd et al., 2015; Shimizu and Hitt, 2004).

Prior research supports this notion, showing that entrepreneurial firms operating in volatile environments often excel at identifying new value-creating opportunities but struggle with the increasingly complex demands of growth (Serra and Thiel, 2019; Slevin and Covin, 1998), which requires skills such as developing and implementing strategy and orchestrating resources (Carnes et al., 2017; Hitt et al., 2011; Ireland et al., 2003; McDonald and Gao, 2019). Though complex, balancing both entrepreneurial and strategic activities throughout a firm's growth process is argued to be critical for long-term success (Duane Ireland and Webb, 2007; Hughes et al., 2020; Morici and Zander, 2020). Wang and Ahmed (2007), for example, argue that the key capabilities for a firm's organizational growth are its capacity to absorb external knowledge, adapt to changing environmental circumstances, and continuously innovate. Since such capabilities are path-dependent (Helfat and Peteraf, 2009), early decision-making concerning resource allocation and business model development may determine a firm's growth trajectory, and impact a

firm's future developmental opportunities (Bhawe et al., 2016; De Cock et al., 2019; Delmar et al., 2003; Sydow et al., 2020).

Relatedly, organizational growth can be seen as “a process of overcoming resource deficiencies resulting from [existing] liabilities of newness and smallness” (Chen et al., 2009, p.295), a process invariably accompanied by multiple managerial challenges (Garnsey et al., 2006; Phelps et al., 2007; Serra and Thiel, 2019; Tunberg and Anderson, 2020). Young technology-based firms (YTBFs) in particular need to focus on accessing and allocating resources (Andersson and Evers, 2015; Andries and Debackere, 2006), on building the necessary foundation an organization needs to accommodate its envisioned growth (Gilbert et al., 2006; Picken, 2017; Nicholls-Nixon, 2005), and on innovating (Carnes et al., 2017; Chen et al., 2009). Understanding which capabilities help facilitate this growth process can help entrepreneurial firms respond to managerial challenges and could potentially assist them in taking more targeted growth-directed actions (Cyfert et al., 2021; Ritter et al., 2018; Zahra, 2021). This is even more so for YTBFs possessing a largely scientific and technology-based managerial team (Deligianni et al., 2019; Malyy et al., 2021).

A dynamic perspective of growth, in which firms are seen to grow by continuously and iteratively transitioning between “states” (i.e., dynamic configurations of factors at the firm, individual, and environmental level), is a useful lens to examine internal capabilities of YTBFs due to the volatile environments they operate in (Levie and Lichtenstein, 2010; Stam et al., 2006). In contrast to the more commonly used stage-based approach (e.g., Churchill and Lewis, 1983; Greiner, 1998), this perspective assumes that firms grow in a non-linear fashion so that both small and radical changes, made to achieve a (potentially better) firm-environment fit, may affect a firm's state (i.e., combination of resources and capabilities) (Levie and Lichtenstein, 2010; McKelvie and Davidsson, 2009; Sternad and Mödritscher, 2020). Although capabilities have been acknowledged as essential for growth (Colombo and Grilli, 2010; Koryak et al., 2015; Parida et al., 2016), and despite calls for greater adoption of a dynamic rather than linear approach to growth in volatile environments (Levie and Lichtenstein, 2010; Dufour et al., 2018; Phelps et al., 2007), research integrating these considerations to explain how capabilities can facilitate such dynamic state transitions remains lacking (Cyfert et al., 2021; Stam et al., 2006; Tunberg and Anderson, 2020; Zahra, 2021). We therefore pose the following research question: *How can young technology-based firms' capabilities facilitate the transitional process between dynamic states throughout their growth?*

To answer this question, our qualitative study adopted an abductive, systematic combining method (Dubois and Gadde, 2002b; 2014) to analyze data from exploratory interviews, semi-structured interviews, and focus groups. We build on several research streams to develop a comprehensive framework of the capabilities that can help enable YTBFs' growth. Our exploratory framework explains the relationship between growth-enabling capabilities and the managerial challenges that YTBFs are bound to confront

throughout their growth process. The processual, dynamic perspective of growth we adopt accounts for its multilevel characteristics (Macpherson and Holt, 2007; Phelps et al., 2007; Tunberg and Anderson, 2020) and is more closely aligned with the volatile reality YTBFs face than is a linear perspective (Abatecola and Uli, 2014; Malyy et al., 2021). In addition to introducing this framework using this particular perspective, our findings also contribute to existing literature on strategic entrepreneurship by linking strategic and entrepreneurial challenges to those of YTBFs' dynamic growth process. This contribution provides empirical researchers with a solid foundation for further exploring the promising potential of strategic entrepreneurship for YTBFs (Morici and Zander, 2020).

2. Theoretical background

2.1. Dynamic growth transitions in the context of young technology-based firms

Rooted in complexity theory, the dynamic states perspective of growth accounts for the non-linear and multilevel interaction between individual, organizational, and environmental elements when dissecting growth transitions (Levie and Lichtenstein, 2010). While somewhat less common compared to linear, stage-based growth models, it is more closely aligned to YTBFs' realities characterized by multilevel demands and complexities (Croce et al., 2021; Eliakis et al., 2020; Malyy et al., 2021; Milanesi et al., 2020; Sternad and Mödritscher, 2020). Integrating this perspective into the YTBF literature allows the development of a more holistic view (Wright and Stigliani, 2013) and makes it possible to consider growth as processual, thereby recognizing the potential for path-dependent firm development (Garnsey et al., 2006; Penrose, 1995).

Researchers exploring the dynamic states perspective have argued that organizations develop through shifts between dynamic states (i.e., configurations of factors at the firm, individual, and environmental level) (Levie and Lichtenstein 2008, 2010; Sternad and Mödritscher, 2020). According to this view firms effectively link their internal value creation system to external opportunities, which allows them to leverage business opportunities and create value for multiple stakeholders. The firm's pursuit of a better firm-environment fit and therefore, an improved state, incentivizes these transitions since achieving it allows them to obtain the resources necessary to continue their development (Chen et al., 2009). Proponents of the dynamic states perspective acknowledge that a firm may shift from a superior state to an inferior one, but they generally assume that when transitions are successful, firms gain access to increased resources and capabilities that further their development. Before knowing how such transitions enable YTBF growth, though, we first need to understand what such transitions entail and how they affect the resource endowments that enable a firm's growth (Stam et al., 2006).

The large body of literature on YTBG growth shows that the process demands more from firms over time (Almus and Nerlinger, 1999; Chorev and Anderson, 2006; Greiner, 1998; Kakati, 2003; Kazanjian, 1988; Kazanjian and Drazin, 1990; Nicholls-Nixon, 2005; Stam et al., 2006). Countering the stage-based view, Levie and Lichtenstein (2010) contend that state-based transitions are indefinite, non-linear, and recursive. If true, a YTBG will inevitably be confronted with repeated and potentially simultaneous challenges over the course of its life (Andries and Debackere, 2006; Gabrielsson and Gabrielsson, 2013). These challenges include the pains of synchronizing internal organization and growth (Eisenmann and Wagonfeld, 2012; Desantola and Gulati, 2017). More specifically, they result from a firm's paradoxical need to both retain its entrepreneurial advantage while attempting to increase its efficiency and effectiveness to create value for customers and other stakeholders (Ge et al., 2016; Hult et al., 2005).

Building on similar ideas, the strategic entrepreneurship literature also provides knowledge on how such growth transitions can be enabled (Leitch et al., 2010; McKelvie and Wiklund, 2010; Phelps et al., 2007). Researchers from this stream argue that entrepreneurial firms aiming to grow must learn to combine both a strategic and entrepreneurial outlook as they develop (Hitt et al., 2011). This combination benefits firms because it combines integrating activities that are directed towards recognizing and exploiting opportunities to develop the organization and create value (Wiklund and Shepherd, 2003), with activities designed to retain and capitalize on that value over the longer term (Utoyo et al., 2020).

Accomplishing as much, however, is no easy task, since both dimensions are seen as complementary yet distinct (Morici and Zander, 2020), with each one requiring different organizational capabilities (Ketchen et al., 2007). Ireland et al. (2003), for instance, found that entrepreneurial firms frequently carry an advantage in searching for and executing growth opportunities given their flexibility, nimbleness, and agility yet are often less effective at creating and leveraging long-term value from their exploitation due to common resource constraints (Duane Ireland and Webb, 2007; Hitt et al., 2011; Ireland et al., 2003). Moreover, research indicates that YTBG managers are not always aware of their own firms' needs and are driven mostly by the innovative and technological aspects of their companies (Gruber et al., 2013; Phelps et al., 2007; van Weele et al., 2018). It has indeed been shown that YTBGs whose knowledge base is primarily scientific (Deligianni et al., 2019) struggle with resource orchestration activities (Zahra, 2021).

Drawing on these findings, we argue that in their recurring and non-linear transitions between dynamic growth states, YTBGs will inevitably confront three distinctive types of challenges: entrepreneurial, orchestration, and legitimation challenges.

- 1) *Entrepreneurial challenges* encompass the need for YTBGs to continuously identify or create new opportunities (Alvarez and Barney, 2007) and to recognize threats that may obstruct their further growth (Shamsudeen et al., 2017). These

challenges also comprise the development of a knowledge-base to facilitate strategic decision-making, which requires YTBFs to properly assess and commit to promising value-creating opportunities (Choi and Shepherd, 2004; Choi et al., 2008; Patel, 2019).

- 2) *Orchestration challenges* are those requiring a firm to effectively mobilize and (re-)allocate its current resource base and make the changes necessary to implement its chosen strategy (Deligianni et al., 2019; Ge et al., 2016). YTBFs often perceive orchestration challenges as the most difficult to overcome (Wright and Stigliani, 2013) since they require strategic planning (Berry, 1988) and resource management (Sirmon et al., 2007). Nevertheless, overcoming these challenges is critical, since it makes it possible for YTBFs to change their resource configuration, create (new) value, and establish (renewed) alignment with their environment (Carnes et al., 2017; Colombo et al., 2020; Foss et al., 2013; Zahra, 2021).
- 3) *Legitimation challenges* are those a firm encounters when searching for a fit between its internal capacity and the (increasing) multilevel environmental demands and expectations of multiple stakeholders (e.g., customers, investors, employees) (Fisher et al., 2017; Zimmerman and Zeitz, 2002). Such challenges require a firm to balance several, often competing, demands that frequently carry a political trait (Brown, 2012; McDonald and Gao, 2019; Rutherford and Buller, 2007). These intricacies make it difficult for resource-constrained YTBFs to deal with legitimacy-related challenges, yet overcoming them is critical for driving YTBF growth (Lin et al., 2010).

While young firms' relatively limited processes and systems enable them to start up rapidly, this entrepreneurial oriented flexibility often impedes longer-term strategic decision-making (Ketchen et al., 2007). Assuming that a firm's resource endowments determine its constraints for implementing strategic alternatives (Chen et al., 2009), a firm that develops its resource position has greater potential for organizational growth. In line with previous literature, we contend that, given path dependency, a firm that purposefully transitions between dynamic states can better develop its current position (i.e., its combination of resources and capabilities) (Gabrielsson and Gabrielsson, 2013; Levie and Lichtenstein, 2010; Sternad and Mödritscher, 2020; Penrose, 1995). Unfortunately, existing research lacks clarity as to which capabilities are relevant for growth-oriented YTBFs and, more importantly, how these capabilities can help a firm to overcome the challenges of dynamic growth (Atuahene-Gima, 2005; Xiaofeng et al., 2015). We argue that a firm can enable dynamic growth transitions by focusing early on, on developing those *particular* capabilities that can help it overcome the three types of challenges outlined above. To clarify this, we turn to the dynamic capabilities' literature.

Dynamic capabilities can help firms adapt and align their routines and resources to attain a competitive advantage (Wagner et al., 2017) and have been defined as a firm's capacity to purposefully create, extend, or modify its resource base (Helfat and Peteraf, 2003, 2009). This perspective builds on the assumption that firms have existing processes and

routines to change, adapt, and align (Teece, 2007). Dynamic capabilities are path-dependent, and their development requires learning and a significant investment of time and resources (Chen et al., 2009; Cyfert et al., 2021; McKelvie and Davidsson, 2009). It is, therefore, not surprising that most studies of dynamic capabilities have been restricted to large and established firms, and that less attention has been given to their development and application in the context of younger firms (Barreto, 2010; Boeker and Wiltbank, 2005; Schilke et al., 2018).

This restricted attention, however, does not mean that studying dynamic capabilities in younger firms is not important. As Stam et al. (2006) note, “dynamic processes operate in young firms as they do in established firms, and shape early growth experience, but with distinctive effects that reflect the liabilities of newness” (p. 230). We address this research disparity in this study by arguing that YTBFs need to double down on the specific capabilities that have the potential of developing into dynamic capabilities over the longer term (McKelvie and Wiklund, 2010; Jiao et al., 2013), as allocating (the already constrained) time and resources to their purposeful development may benefit the firm in the longer term by forming potential sources of competitive advantages (Helfat and Peteraf, 2009). For YTBFs to do so, as mentioned above, requires them to simultaneously adopt both a strategic-management (Teece et al., 1997) and an entrepreneurial outlook (Alvarez and Barney, 2007) to account for multilevel growth factors.

2.2. Growth-enabling capabilities in young technology-based firms

We identify “growth-enabling capabilities” as those that help YTBFs overcome the particular challenges of transitioning between dynamic states, correspond to their non-linear and iterative transitioning process described above, and provide a dynamic perspective of path-dependent capabilities (McKelvie and Davidsson, 2009). These capabilities also recognize that a firm needs to give equal weight to creating value and leveraging that value over the longer-term, as emphasized in strategic entrepreneurship literature (Hitt et al., 2011).

Given the underdeveloped nature of young firms’ resource positions and the general lack of existing routines, we argue that rather than being separate processes in themselves (Teece et al., 1997; Eisenhardt and Martin, 2000), growth-enabling capabilities of YTBFs are embedded *within* a firm’s processes since they encompass many “tacit elements (such as know-how and leadership) embedded [within these] processes” (Wang and Ahmed, 2007, p.35). Through their purposeful development and integration with organizational processes, they can transform into dynamic capabilities over time (Amit and Schoemaker, 1993).

Specifically, we consider growth-enabling capabilities as facilitating the development of specific organizational processes throughout growth. By doing so, we account for the substantial learning scope and limited resource availabilities that accompany YTFB

development, thereby making these capabilities specific to each firm and allowing the exploration of dynamic capabilities in the context of younger and less developed firms (Felin et al., 2012). Researchers supporting the dynamic nature of growth and acknowledging the importance of dynamic capabilities for growth performance (Wang and Ahmed, 2007) have emphasized three capabilities as core components of dynamic capabilities, which are in line with our definition of growth-enabling capabilities: absorptive capability, adaptive capability, and innovation¹ capability, all of which are correlated, yet each with a distinct focus.

A firm's absorptive capability² refers to its ability to acquire new knowledge and integrate it into its existing knowledge base (Cohen and Levinthal, 1990; Zahra and George, 2002). This capability is also related to a firm's ability to learn from various sources of knowledge (Rezaei-Zadeh and Darwish, 2016; Lichtenthaler, 2009) and has been identified as one that helps firms create value by exploiting such knowledge (Božič and Dimovski, 2019; Cay, 2011), which is a recurring challenge for growing YTBFs.

A firm's adaptive capability refers to its ability to continuously reassess adopted assumptions that are core to the business and flexibly allocate and adapt its resources to capitalize on market opportunities (Fernhaber and McDougall, 2005). In volatile environments particularly, researchers have argued that firms can leverage their adaptive capability to better align their internal capacity with a rapidly changing environment (Eshima and Anderson, 2017). Firms with this capability have been found to have greater strategic flexibility³ (Sanchez, 1995), which can give them a significant advantage in managing the challenging task of orchestrating resources during growth (Brinckmann et al., 2019).

Finally, researchers have argued that the capability to innovate is crucial for growth-oriented firms as it facilitates their growth and helps them remain competitive in volatile environments over the longer term (Carnes et al., 2017; Coad and Rao, 2008; Stam and Wennberg, 2009). Some researchers have gone so far as to suggest that a firm's innovation capability is its most important capability for enabling development and progress in such dynamic contexts (Birchall and Tovstiga, 2005; Breznik and Hisrich, 2014) and have identified innovation as an essential component of strategic entrepreneurship (e.g., Ireland et al., 2003; Kyrgidou and Hughes, 2010). Innovation has been variously defined in extant literature (Breznik and Hisrich, 2014). Van de Ven (1986) defined it as anything on a spectrum from "a new or improved idea, method or approach, [...] [to] a recombination of old ideas, [to] anything that is perceived as new or

¹ Wang and Ahmed (2007) refer to, what we term "innovation capability", as "innovative capability".

² We use the term "absorptive capability," as Wang and Ahmed (2007) and other authors (e.g., Tsai, 2006) have done, in place of the more-commonly used term "absorptive capacity" (see, e.g., Zahra and George, 2002; Cohen and Levinthal, 1990).

³ Strategic flexibility refers to "the inherent flexibility of the resources available to the firm and the flexibility in applying these resources." (Wang and Ahmed, 2007, p.37).

improved” (p. 591). For our purposes, we define a firm’s innovation capability as its ability to align its innovativeness to potential value creation in the market by leveraging its current resource endowments; for example, by developing new products and/or market processes (Hottenrott and Peters, 2012; Hii and Neely, 2000).

We consider these three capabilities as “growth-enabling capabilities.” While researchers have separately investigated each and how they relate to YTB performance, to our knowledge none has created an encompassing framework to capture how these capabilities interact and jointly are related to YTB growth. Given the underdeveloped yet promising research of strategic entrepreneurship (Morici and Zander, 2020) and dynamic capabilities (Stam et al., 2006) in the context of YTBs, there is a significant and unexploited value in having such a framework as it can elucidate how growth-enabling capabilities are related to YTBs’ growth-transitioning challenges, thereby offering a steppingstone for further research. Our qualitative study therefore adopts a systematic combining approach (Dubois and Gadde, 2002) and uses findings from the literatures of strategic entrepreneurship (Hitt et al., 2011), organizational (Philipsen and Kemp Zoetermeer, 2003) and (dynamic) capabilities (Teece, 2012) to explore this relationship. In doing so, we aim to explain how firms operating in dynamic environments develop their current positions and create value.

3. Research design

3.1. Research setting and data selection

To investigate our research question, we focus specifically on Western contexts, where the European Commission has explicitly articulated its aim of increasing YTB growth rates as part of its 2020 strategy for supporting inclusive growth (European Commission, 2010; Pradhan et al., 2020). We therefore chose to collect data from both continental Europe (Belgium, France, The Netherlands) and the UK, which was enabled by an Interreg 2 Seas project (SPEED⁴). Current policy to promote YTB growth focuses mostly on the important objective of further advancing supportive entrepreneurial ecosystems (Ratinho et al., 2020). We argue that within this context, however, focusing on internal firm development is equally important, since a YTB manager’s lack of awareness concerning its firm’s challenges and needs (Van Weele et al., 2017) can reduce the potential effectiveness of the ecosystem in place (e. g., Rice, 2002).

We used an abductive reasoning approach to investigate our research question, guided by the practice of systematic combining (Dubois and Gadde, 2002), which is a qualitative, non-linear, non-sequential, and iterative process that systematically moves between

⁴ Interreg 2 Seas is a European territorial cooperation program for England, France, the Netherlands, and Belgium (Flanders). SPEED, short for “Smart Ports Entrepreneurship Ecosystem Development”.

empirical data and literature. We chose this approach given our intention to develop results that are relevant to both practice and scholarship (Nenonen et al., 2017) and because it is an appropriate method to advance knowledge on the underlying factors that enable a dynamic growth model for YTBFs (Dubois and Gadde, 2002a).

Selecting our sample was challenging because the literature has defined YTBFs in numerous ways (Colombo and Grilli, 2010; Kazanjian, 1988; Storey et al., 1996). Since our focus is on young *and* growing technology-based firms, we selected firms using four criteria from similar studies (see e.g., Saemundsson and Candi, 2017). Firms needed to be (1) recently established technology-based firms that had (2) passed their start-up period and (3) “have achieved reinforced growth, i.e., internal pressures are exerted for further growth” (Saemundsson and Candi, 2017, p. 45). In addition, firms had to be (4) knowledge-intensive, meaning they “had to rely on the technical knowledge of their members for the creation, detection, and exploitation of business opportunities” (Saemundsson and Candi, 2017, p. 45). To gain access to relevant firms meeting our criteria, we received help from entrepreneurial experts (EEs) with years of experience in their fields and who were in daily contact with YTBFs.⁵

3.2. Study quality

We followed good research practices using triangulation, combining multiple methods, sources of data, and researchers to “look at the same topic from different angles” (Myers et al., 2019, p.10). Triangulation allows for a more holistic picture, increases the reliability and validity of a study (Bell et al., 2018; Eisenhardt and Graebner, 2007; Pratt, 2009), and reduces potential researcher bias (Bøllingtoft, 2007). Triangulation in our study comprised three specific practices. First, we collected primary data from multiple respondents (YTBf managers, entrepreneurial experts, and academic experts) and complemented it with secondary data from multiple sources, including company websites (YTBFs and EE organizations), LinkedIn profiles (YTBf managers and EE interviewees and their firms), company press releases (from YTBf and EE organizations), and content from social media (e.g., blogs, podcasts, and videos). Second, we used different qualitative research methods, combining exploratory interviews, in-depth interviews, and focus groups with secondary-data analysis. To minimize researcher bias (Bøllingtoft, 2007), the three study researchers engaged in regular team meetings and took on different roles during the research process (Eisenhardt, 1989): the first author collected and analyzed the data, and the second and third authors took on the roles of challenger, reviewer, and guide. Third and finally, throughout the process of data collection and analysis, we also used member checks (Danneels, 2002) to confirm our interpretations (Hirschman, 1986). Specifically, the academic experts (AEs) and EEs who

⁵ The entrepreneurial experts who were part of our study regularly advised YTBFs throughout their entire (or part of their) growth trajectories and thus could provide an objective perspective of the issues we were interested in.

participated in our focus groups functioned as research auditors, and we asked YTBf managers to confirm our in-depth interview summaries.

3.3. Data collection

3.3.1. Exploratory interviews

Our first data-collection step was carrying out five exploratory interviews with EEs, who regularly coach, train, and/or follow up with YTBfs (see Table 1). During these interviews, we discussed what they believe lay behind YTBfs' recurring challenges of transitioning between dynamic-growth states and how such challenges compare across the different cases the EEs had come by, working with firms during their growth trajectories. These interviews supported the suitability of the dynamic-growth perspective and confirmed that YTBfs needed guidance to manage their growth (Levie and Lichtenstein, 2010). They also provided us with YTBf contacts to approach for our semi-structured interviews and led to in-depth follow-up interviews with EEs (see section 3.3.2.). We took notes during these interviews to document the topics that were discussed.

3.3.2. Semi-structured interviews

We conducted a total of eight semi-structured interviews with YTBfs (referred to as "TFs" in tables to aid readability) and five semi-structured interviews with EEs (see Table 1). Except for one, our interviews with EEs were annotated rather than recorded. They provided valuable input that helped us to either confirm or challenge the views YTBfs held about their growth challenges. As mentioned in section 3.1, the YTBfs were reached via the EEs, which we selected using our study criteria. We contacted them by mail or phone, explained the purpose of our research, and made an appointment to interview company managers. We selected as interviewees only those firm managers who had strategic decision-making power, since these managers have the most knowledge of how their organizations develop and function. We assured all participants that their names and interview materials would remain confidential and promised to provide them with a summary of the findings in exchange for their cooperation.

The interviews were conducted either face-to-face or remotely using the platform interviewees preferred⁶ and followed a semi-structured interview protocol (see Appendix A for YTBf interview protocol, and Appendix B for EE protocol). The length of interviews varied depending on how much time managers had, and to evade social-desirability bias, the questions we asked did not specifically mention critical capabilities. We took notes during and after each interview and then summarized the content,

⁶ Because it were the interviewees who chose the video-conferencing platform used in the interviews, we were unable to record our interview with TF6. Also, at the beginning of the interview with TF3, the recording device failed. In both cases, the researcher used notes taken during the interview and those summarizing it hours afterward.

compiled it into a blog format, sent it back to the interviewees and asked them to confirm that our interpretation was correct. This allowed for the interviewees to send up supporting information or documentation if they so desired. We used our notes as the basis for our analysis and complemented them with interview transcripts and secondary data, which, combined, formed our singular database for analysis.

3.3.3. Focus groups

Our interviews provide depth, and to add breadth, we conducted two focus groups (FGs) after completing the in-depth interviews. The primary purpose of the FGs was to discuss and refine the framework we had developed and to check the conclusions of our interview analysis (Morgan, 1996). The first FG (FG1) consisted of both EEs and AEs, while the second (FG2) consisted of AEs alone. Because our aim was to develop an in-depth conceptual model, we included the same AEs from FG1 in FG2, which allowed us to build on the knowledge we had gained from FG1 (see Table 1). Eight EEs and five AEs participated in FG1 and five AEs participated in FG2. To keep our research sample consistent with our research setting, we made sure to sample EEs from both continental European and Anglosaxon countries; and our AEs came from fields that we believed would complement our research (e.g., strategic management, international management, ecosystem development, and international entrepreneurship). Hence, FG1 provided us with a variety of viewpoints, while FG2 gave us in-depth participant insights (Morgan, 1996).

The objective in FG1 was to collect both scholarly and practical insights into YTBG growth and professionalization and to identify the factors that are critical for successful growth. The objective of FG2 was to present our intermediary results and to further investigate the theoretical sense-making of the model. In both FGs, the primary researcher moderated by following a structured agenda to guide questions and managing group dynamics to include the opinions of all participants (Morgan, 1996). Several participants took notes during the FGs, which the primary researcher later collected and used to refine the final framework. Because it was not possible to have in-person meetings due to COVID-19 measures, both FGs were held on online platforms and both lasted between two and two-and-a-half hours (see Table 1).

[---- Insert Table 1 about Here ----](#)

3.4. Data analysis

Since we applied a systematic combining approach, our analysis proceeded through multiple iterations, continuously moving back-and-forth between data and literature to illuminate critical factors (Dubois and Gadde, 2002; e.g., Aarikka-Stenroos and Jaakkola, 2012). We wanted to first identify YTBGs' growth-transitioning challenges. To do so, we

analyzed the notes and recordings using “open coding” and listed indicators that firms’ growth-oriented actions proved challenging for them. This step gave us a clear idea of the specific obstacles these firms faced when pursuing such activities. We also compared, complemented, and validated the obstacles we identified from open coding with insights from our EEs, which provided a more-holistic view.

We analyzed our notes, transcripts, and secondary-data sources in several rounds of similar analysis, continuously comparing previously coded data with newly created codes and assessing whether our codes were relevant or whether we needed to further refine our central concepts (Bowen, 2008). Determining a saturation point is difficult for any qualitative researcher (Bowen, 2008), but we did so by re-coding and re-grouping our combination of exploratory interviews, in-depth interviews, focus groups, and secondary data until our first-order categories emerged in the form of activities (Table 2) (Bowen, 2008).

Next, we used axial coding to discover relationships and consulted the literature to ground the first-order categories into more abstract second-order themes that conceptually brought together overarching activities (Table 2) (Corbin and Strauss, 1990). These second-order themes aggregated our growth-enabling capabilities and formed the basis for the framework we developed, which included the dimensions of dynamic growth-related challenges and acknowledged the influence of both internal and external factors. The research team discussed the resulting data structure many times to align our interpretation of the data and ensure plausibility.

4. Findings

We identified six capabilities that enable YTBFs’ growth transitions:⁷ learning, absorptive, adaptive, networking, innovation, and individual capabilities. No one capability was more important than another; instead, we found that all growth-enabling capabilities are equally valuable, yet their importance for a YTBF depended on its current position, which is determined, among other things, by its most-prominent challenges, its current resources, and the degree to which the YTBF had already developed these capabilities. Our data shows that YTBFs’ growth-enabling capabilities correspond to the specific activities they implement to address particular growth-related challenges. Table 2 provides an overview of the data structure. Capabilities are presented in second-order themes, while the activities are presented in first-order categories. Next, we explain how

⁷ To describe a firm’s ability to tap into and leverage opportunities through the building, maintaining, and handling of relationships within and between networks, we use the term “networking capability” in this article, as many other authors do (e.g., Fernhaber and McDougall, 2005; Milanese et al., 2020), rather than the—also frequently used —“network capability” (e.g., Parida et al., 2017; Walter et al., 2006), which utilizes a similar description.

each capability enabled YTBFs to address particular growth-transitioning related challenges (see Appendix C illustrative quotes of the three types of challenges to complement interpretation of our findings). To support and expand on our findings we use some illustrative quotes from our interviews. The notations following the quotes refer to the number given to the quote in Table 3.⁸

[---- Insert Table 2 about Here ----](#)

4.1. Learning capability

Our data put a firm's learning capability forward as an implicit but essential capability for enabling growth that can come from external sources such as consulting [1–2], expert advice [3–5], specialized courses [6], customers [7] as well as from sources internal to the firm, such as previous experiences and strategic analyses [8–13]. We repeatedly found that a firm's learning capability was related to one or more other capabilities (absorptive, adaptive, networking, and innovation), making it perhaps the most-interlinked capability and the one that has the potential to strengthen or weaken how effectively a firm approaches any of the three types of transitioning challenges. This is also why we refer to some illustrative quotes from the firms' learning capability (Table 3) in the following sections as well (4.2–4.6).

Our data indicates that learning happens continuously throughout the process of growth transitions by way of, for instance, (new) experiences or bad decisions [5]. Yet only by actively and purposefully applying these learnings to fit the firm's core objectives can its learning capability be developed in a way that can benefit the firm [9,11]. YTBFs develop their learning capability in several ways; for example, by actively seeking to reduce unnecessary risk-taking [1–2], seeking out experts in their field to learn from [3–6], creating close market and customer feedback loops (often referred to as an extensive market orientation) [7], establishing internal feedback loops [12], and implementing collaborative decision-making processes to leverage the diverse intellectual capital within the firm [14].

We found that YTBFs' learning capabilities are developed on multiple levels (managers, individual employees, teams, customers) and include established mechanisms of learning, such as customer involvement (external) and collaborative decision-making (internal). In both the internal and external cases, the openness to feedback and the pro-

⁸ In-text references to examples from data sources are indicated by square brackets ("[]") and the corresponding quote number in Table 3 (e.g., "[1]" refers to quote number 1 in Table 3) and do not refer to references in our reference list. Illustrative quotes found in the text are followed by two letters and a number to indicate the source of the quote (e.g., "TF4" for YBTF 4, "EE1" for entrepreneurial expert 1).

active actions taken by firm managers are critical to ensure learning can take place at all levels of the firm (both upstream and downstream). One manager gave an example of how they implemented a Socratic way of discussing strategic decisions that can potentially lead to disruptive changes in the firm.

When a strategic decision [...] needs to be made, we make it with the team. [...] As the manager, you probably know much of what's going on from a holistic [point of] view, so you can direct the questions in the company. Usually, this brings to relevant ideas and an eventual suggestion from the [...] team about how and what we should change [...]. When such a decision is taken with team participation, it has much more chances of success. (TF4)

The successful result from such approaches to implementing company-wide decision-making was often attributed to the adherence to and alignment with the firm's culture and values. While the YTBFs in our sample indicated that some organizational learnings result directly from a firm's specific actions, such as staffing [52], analyzing a market [34], consulting experts [5], or interacting with peers [61], we found that firms need to have an inherent willingness to learn and engage in explicit learning activities. By staffing complementary to currently existing competencies within the team, for instance, managers can invite lively debates, which research has found can foster innovation (Hewlett et al., 2013). However, in order to leverage internal firm diversity (e.g., backgrounds, experiences, knowledge, age) to the benefit of organizational learning, it is important that both managers as well as their teams are open to sharing with each other, learning from each other, all the while remaining critical to each other's ideas [12,14].

Hence, our findings support the notion that a firm's learning capability is embedded within its other growth-enabling capabilities and is also crucial for the latter's development. Given the need to develop mechanisms to actively stimulate and exploit organization-wide learning (Chikweche and Bressan, 2018), early implementation of such learning mechanisms can support YTBFs in tackling challenges of dynamic state transitions.

4.2. Absorptive capability

Our data revealed that absorptive capabilities, comprising activities aimed at extracting, integrating, and leveraging external information, are essential in a dynamic environment. We argue—as other researchers have (e.g., Sun and Anderson, 2010)—that a firm's absorptive capability can be seen as a specific type of learning. Namely, these activities allow firms to learn about initiatives intended to support growth both inside and outside of their own industry; to stay on top of trends, new innovations, and market changes; and to identify potential opportunities for (or threats to) the firm. Expert EE6, for example, explained that YTBFs that do not adequately implement such activities may struggle to successfully time and implement expansion strategies, which could obstruct their growth attempts. For expansion driven YTBFs, this expert perceived the most-common setback

to be “wrong timing”—that is, YTBFs acting either too quickly or too slowly. Firms act too rapidly when they want to enter a new market head-on with little to no knowledge about it, including how it operates or whether it needs or wants their product (i.e., referring to product-market fit) [15]. In contrast, because they want to wait “just a little longer” to perfect their product or service, some managers enter the market too late. Both early and late market entry represent orchestration-related growth challenges of timing and successfully implementing expansion strategies and could be linked to firms’ lack of absorptive capabilities.

Our data and analysis indicated that absorptive capabilities are about more than just sourcing knowledge and revealed that YTBFs need absorptive capabilities to overcome transitioning challenges, either directly or indirectly [15–34]. It also emphasizes the critical role that actively seeking to learn from sourced information plays in the development of absorptive capabilities. One manager described these capabilities as fundamental to a firm’s existence:

Having the capability in the company of scanning the environment, knowing where to look, understanding the information you’re getting in, and translating it to actionable steps that you can further exploit in the same market is just critical [...] and it[s importance] increases with [firm] growth. (TF4)

Some of the YTBFs in our sample had implemented specific processes to extract information from their environment so that they could better detect or create opportunities, make better strategic or operational decisions, and reduce time-to-market [17–19]. For example, one firm described the value of approaching entrepreneurial challenges by leveraging intensive co-creation with its customers for product development.

Customer orientation is critical. Particularly in technology companies [...] You have to understand that a product will never be perfect the first time around and you cannot strive for that because it will prevent you to get to market. You should find a market where your customers understand this and where they are willing to cooperate on the development of the product in order to get it as close to perfection as possible, together with you. (TF1)

The meetings this firm has with its customer once a month to talk about product potential, limitations, and necessary changes creates a close feedback loop in its target market and leverages the communication channel it has built for this purpose [34].

Our findings show that activities purposefully set up to absorb knowledge from a firm’s external environment can significantly further entrepreneurial intentions since they help inform strategic resource allocation decisions (see Appendix C), for instance. Given time and re- sources limitations, YTBFs are often forced to carefully evaluate which strategic actions to take. Developing their absorptive capabilities helps firms assess how the

knowledge they acquire can be applied to their particular situation (e.g., configuration of resources, firm capacity, and environmental context) [26–33].

Finally, we found that absorptive capabilities intersect with and complement the adaptive capabilities of the firm. Where absorptive capabilities are more outward oriented (seeking to internalize external information), adaptive capabilities are more inward focused (helping firms with evaluating their internal environment). One common denominator in both of the above is the need for effective communication mechanisms to disseminate and allow the flow of information throughout the firm. Here, too, we refer to the critical role of a firm's learning capability to support this [12].

4.3. Adaptive capability

While our focus on absorptive capabilities was on external knowledge, collecting and interpreting internal knowledge is an equally important component of growth-enabling capabilities. Firms' adaptive capability allows them to respond quickly to changing (internal and external) environmental demands [35]. By utilizing mechanisms to assess, evaluate, and facilitate growing internal operations, YTBFs managers can delegate responsibilities whilst remaining up to date on internal operational affairs, thereby providing opportunities for quick turnarounds when needed [36].

[...] my radar is always on. Not only towards the external environment and the trends and changes that happen there, but to the internal organization as well. How does the firm work, where are the weaknesses, where can we perform better, more efficiently? (TF4)

We found adaptive capabilities to be integrative (balancing various demands), multilevel (manifesting at the firm, team, and individual level), and specifically linked to firms' strategic flexibility. Our data emphasized the importance of activities aimed at dissecting internal firm structures, resources, processes, activities, operations, and communication channels [38,44,45] to develop its adaptive capability. "Scenario planning" or "real option development" (Raynor and Leroux, 2004) are examples of activities used by growth-oriented YTBFs to facilitate better decision-making [42,46] because they allow them to quickly identify poor strategic decisions, as has also been found in the literature (e.g., Shimizu and Hitt, 2004). In addition, engaging in such activities allows firms to consider alternatives and identify and respond to entrepreneurial challenges [41].

Because YTBFs are inherently fast-paced and entrepreneurial organizations, they often dismiss the value of creating adaptive mechanisms, such as communication and assessment systems, early on to ensure that they retain efficient flows of interaction and periodic evaluations as they grow [8,36]. One expert explained the necessity of doing so.

[YTBFs] often rely on [the] smooth functioning that helped them to get started[....] It's different when they're growing. They have more people,

more clients, and somehow, they're suddenly unable to keep the right people updated at the right times. (EE4.2)

Given the path-dependent nature of these capabilities, early actions implemented by YTBFs to develop their adaptive capabilities can have a significant influence on their ability to deal with the increasingly demanding challenges of growth transitions [37]. YTBFs often have greater flexibility and agility compared to their larger counterparts, which gives them an entrepreneurial advantage, yet many fall into a “tunnel vision” trap or what the literature terms the “exploitation trap” (Du and Chen, 2018) if they do not actively seek to improve their firm’s foundation. Expert EE4.2 described it as “being focused on the now, [...] making money, and on doing what has to be done right now without considering the future.”

Acknowledging the importance of the former, developing strategic decision-making mechanisms with an eye towards both short- and long- term objectives, our data showed, is particularly useful for growth- oriented firms [42] since it stimulates YTBF managers to take a step back and work at their business, rather than in it. Our findings indicate that by periodically evaluating internal firm functioning, allowing for structured delegation, and encouraging swift internal feedback loops, adaptive capabilities can also help YTBFs overcome legitimacy and orchestration related challenges (see Appendix C), which regularly intersect. Specifically, we found that actions oriented toward developing a firm’s adaptive capability can help them avoid internal bottlenecks [89], reduce environmental uncertainty [37], improve internal alignment [48], and demonstrate professionalization [39].

Since most firms in high-technology industries are knowledge- intensive, their primary resource to tap into is its human capital. Not surprisingly, all interviewees (both YTBFs and experts) strongly emphasized both the importance and difficulty of adequately sourcing for, developing, and implementing adaptive capabilities among the YTBF’s team. Our data indicates that overall firm and team strategic flexibility determines whether a YTBF is able to adapt to rapidly changing environmental demands and firm requirements. Strategic flexibility refers to a firm’s (or team’s) ability to identify major influential changes in its environment, to commit resources appropriately in response to those changes, and to recognize when to reverse or halt a course of action (Brinckmann et al., 2019; Brozovic, 2018; Liu et al., 2013; Shimizu and Hitt, 2004; Wei et al., 2014; Zhao and Wang, 2020).

Employing strategic flexibility—cyclically detecting and adapting in different forms as needed—is something YTBFs are consistently confronted with throughout their entire growth process [36]. For example, we found that a YTBF’s early adaptive capability was significantly reinforced by having team members who were quickly able to adopt new roles and tasks and could “chip in” where needed [47], while their later adaptive capability was often supported by diverse specialist profiles who knew about and

supported the firm's growth-oriented strategy and its accompanying changes [48]. Hence, in contrast to popular belief among YTBf managers, that increased structures and systems generate firm rigidity, our findings suggest that purposeful implementation thereof, helps YTBfs retain an entrepreneurial mindset and actually prevents them from such rigidity as they grow.

Importantly, we found that properly implementing adaptive capability-related activities requires that firms also possess a combination of other capabilities, such as absorptive capabilities to create an accurate view of external expectations, needs, and wants, but also of internal knowledge to enable exploitation of opportunities, for instance; networking capabilities to create connections valuable to the firm; learning capabilities to actively seek out and learn from internal and external feedback; and individual managerial capabilities to actively search for and implement actions to optimally leverage resources and facilitate quick (re-)actions [55], such as being able to fit the right people to the right tasks [56].

4.4. Networking capability

As previously indicated, surrounding yourself early on with external advisors, for instance, can be extremely beneficial for YTBf managers to absorb external knowledge or approach strategic decision-making. But these and similar connections also present opportunities to tap into larger networks that could lead to potential partnerships or necessary resource access. As YTBfs often hold limited to no track record, developing and leveraging their network to help inform them of relevant changes in their industries, help them access relevant resources, and vouch for their legitimacy, is critical [58]. Our analysis revealed that many YTBfs were focused on internationalizing, especially in Europe (see Appendix C). Since international expansion largely depends on a firm's ability to create visibility and develop and leverage relevant connections, networking capabilities are critical for helping firms overcome growth-transitioning challenges. We found that carrying out networking activities well, also depends on the individual's ability to do so [60], their ability to properly assess what the firm needs, and their ability to find relationship ties that can meet those needs [62].

Our experts argue that developing a qualitative network requires certain skills, and that YTBfs often poorly develop, manage, and leverage their networks. They explain that some YTBfs, for example, actively network at multiple events, yet become discouraged when they do not see immediate results from these connections [64]. Others are entirely reluctant to proactively (or even reactively⁹) network, either because they do not have

⁹ We make a distinction between proactive and reactive networking, here, to underline the opportunities that are often provided to YTBfs by entrepreneurial support organizations in their environment, for instance. These entrepreneurially-oriented environments are often aware of YTBfs' time and resource

time or because they believe their time could be better spent on other activities. Our experts argue that networking is more about making quality connections that are relevant to the firm rather than about the quantity of activities, or the generation of immediate results [61, 64].

Done well, a firm's networking capability can help it identify and create growth opportunities. For example, the expansion strategy of one UK-based YTBF in our sample (active in the airports market at the time) began at an event in a different industry (the maritime market) [57]. This firm was actively seeking to enter new markets and pursue new opportunities for its products and implementing this expansion strategy was partly the result of properly applying its networking capability. Networking led to greater visibility and recognition for this firm, connected it to relevant contacts (in this case, potential new clients in another industry), and leveraged those connections to enter a new market and fuel its expansion. While networking capability paid off for this UK YTBF and was thus a relevant exploratory action that led to their entering a new market, it could just as easily have been an irrelevant activity that wasted resources, according to TF3 [59]. For networking activities to be relevant, firms need to first clearly identify how these activities are linked to an explicit goal and whether they are aligned with the needs of the firm [63].

While the former relates to facing entrepreneurial challenges, a firm's networking capability is also directly linked to its ability to tackle those related to legitimization. One Belgian firm, for instance, effectively used their developed media and press connections as part of a strategy of advantageously positioning itself publicly, prior to seeking financial support.

The ability to network and put yourself on the map is crucial [...] What we started out doing [to attain legitimacy], when we were about 20 people, was that we positioned ourselves really well. We always did something with our company [referring to specific undertakings] and used the media and press for [sharing] it. (TF5)

This firm used its absorptive capacity to understand what its stakeholders (in this case, financial institutions) needed and expected to see, then leveraged its internal firm capacity to meet those needs and expectations [58]. This YTBF provides a specific example of how growth-enabling capabilities are intimately linked: leveraging one capability appropriately often requires that other capabilities are also, albeit not equally, well-developed. Another example most interviewees mentioned, was the difficulty of attracting and retaining talent (see Appendix C). While this challenge relates to successfully orchestrating resources, it also carries a legitimization factor, since firms need

constraints and act accordingly by facilitating potential connections (Amezcu et al., 2013). While proactive networking indicates the firm actively seeks out and engages in networking events and activities, an example of reactive networking could be being alerted by and attending free events offered at a business center.

to present themselves as legitimate to current members of the firm as well as to (potential) new ones. It is a two-way connection that needs to be solidified, accounting for various demands. More specifically, a firm needs to recognize the human capital it needs and then connect with employees who match those needs, all the while acknowledging the potential differences in perspectives. Our results suggest that YTBFs use their networking capability to form new and leverage existing external as well as internal connections. By going about this purposefully, it can help the YTBF better manage expectations of its expanding network connections and prepare for changes as it moves between dynamic states.

Just as other growth-enabling capabilities, a firm's networking capability is path dependent. Early focus on purposeful network development can help it improve and build on its networking capability so that it can learn from, utilize, and leverage it effectively. Expert EE4.2, for example, explains how networking capability-activities can range from identifying relevant contacts using snowballing to assembling a personal advisory board [65] to developing a mentor-mentee relationship [67]. Leveraging network connections helps YTBFs in several ways, such as reducing uncertainty, connecting with difficult-to-reach contacts, and even entering a new market. It is thus a valuable asset to a firm throughout its growth.

4.5. Innovation capability

We discussed that dynamic state transitions are triggered by firms' continuous search for a better firm-environment fit and require aligning internal firm capacity to multiple (and changing) environmental demands. Given the continuous market and technological changes in YTBFs' environments, developing its ability to innovate is crucial. As discussed in section 4.2., a firm's strategic flexibility comes from its adaptive capability, yet we found that its ability to adapt swiftly and flexibly while also creating value for multiple stakeholders is also significantly determined by its innovation capability. One expert identified well-targeted (value creation-oriented) adaptation as a crucial enabler of firm growth and explained how important it is that a firm continuously transition (or as they call it, "pivot") to achieve firm-environment fit.

It's [...] very important that [YTBFs] are able to pivot. That they have the mindset, that [they notice the need for change], [...] that they have to change their business model, they have to change their client base, maybe they have to change their product as well. [For instance,] modify [it] in a way that it is more useful for a certain niche or for a certain number of clients. (EE1.1)

Innovation capabilities provide firms with a number of benefits when tackling transitioning challenges. A firm's innovation capability is reflected both in its creation of products, services, and markets [78], as well as in its internally focused exploitation of management and other organizational processes [71]. We found that YTBFs carried out

innovation activities to tackle entrepreneurial-related challenges of transitioning and that innovation capability allowed firms operating in existing markets to create their own opportunities by innovating internally [73]. Co-developing products with customers is one example of exploitative internal innovation mentioned in our interviews. YTBFs innovate by seeking new ways of operating with currently available resources and thereby create new internal processes, which help them achieve operational efficiencies and increased effectiveness [70]. Co-development can create value for customers by actively involving them in the creation and development of new products or services and creates value for firms by establishing a direct link to their target customers, thereby enabling faster learning.

Our data also shows that most YTBFs focused more on exploratory innovation activities, including experimentation and exploration of new technologies and ideas [75], rather than the previously discussed exploitative activities. While experts see this as not surprising—as expert EE2.2 put it, “they are technology people, so they are constantly thinking about making something new or making something better”, it comes with certain caveats. For example, many firms in our sample were focused on product innovations, which seemed a natural fit for YTBF entrepreneurs with a technology orientation and backgrounds. Product innovations can lead to exciting new developments, can serve as a steppingstone to new markets, and can reduce a firm’s environmental constraints. At the same time, though, exploratory-driven product innovation cost overruns can strain a firm’s finances, lead to poor product market fit, or result in short-lived developments. One interviewee described it as follows:

For us, robotics is a trend and we have used [it] to develop the company we have today [...], trends are explicitly important to discover opportunities and to develop probable ideas to start out from, or to innovate. [However,] you need to be aware of the fact that [they] can be of short duration. It is, therefore, important to detect the sustainable trends or at the least those trends that you can make sustainable in the long term [...]. (TF1)

To leverage activities aimed at innovation and shelter against potential negative outcomes thereof, YTBFs need to factor risk calculations into their innovation strategies, such as closely scanning the environment for competing products under development or new market entrants [17], which is a good example of how they can utilize their absorptive capabilities to support those required for innovation.

Our analysis suggests that new products, services, approaches, or markets can originate from exploratory as well as exploitative innovation efforts aimed at capitalizing on developing trends [78], from individual experiences that incentivize the search for and execution of a technical solutions or improvements [74], by chance [79], or from experimentation [75]. Explorative and exploitative innovations each require significant resource investments, yet literature underlines the importance of using both to deal with different environmental circumstances (Jansen et al., 2006) and to attain different types

of innovations (Hughes et al., 2020), especially as firms grow. Contrary to our expectations, however, only a few YTBFs mentioned innovation strategies based on the simultaneous implementation of both types of innovation activities (i.e., an ambidextrous innovation strategy) as being important.

A good example of how overemphasizing one innovation strategy over another without targeted adaptation may negatively affect YTFB growth, was given by TF5. This firm perceived their opportunity-seeking behaviour as a source of strength, which led them to base its initial innovation strategies around it. Throughout their different growth transitions, though, they experienced variations in outcomes. During its dynamic states, exploration-oriented activities were beneficial to the firm because they led to increased headcount [76], but as the firm entered a more static state these activities proved problematic because the firm mostly needed to fine-tune their firm-environment fit and further develop what they had already started—that is, implement exploitation-oriented innovative actions.

[The overemphasis we had put on exploratory orientation] did hold us back from further developing a solid business. In the sense that, you're constantly developing new things, but you're not focused on one specific game changer for the market[....] we ended up moving a lot from one project idea to the next, because I always kept on seeing opportunities. And while we sometimes had fantastic ideas [...] we often ended up not working any of them out until the point of true completion. This is also why we missed some opportunities 'business-wise', but technologically we still built a lot and did a lot of different things[....] Eventually, though, it came to the point where we were completely [moving away from our initial goal]. (TF5)

Our findings suggest a firm's innovation capability relies on the development of both explorative and exploitative innovation-activities. Some of our experts noted this to be a paradoxical challenge requiring either expert support (e.g., advice from a board of advisors) [83] or experienced management (where either a transition from entrepreneur to manager or employing professional management must be considered) to help it advance its growth [84]. Not all firms in our sample had this problem, but for those that did it was inherently related to and partially driven by firm managers' individual capabilities.

In sum, a firm's innovation capability complements and supports its absorptive, adaptive, and networking capabilities and allows it to overcome all three types of growth challenges. It helps firms to overcome their entrepreneurial challenges by generating and detecting potential opportunities, their legitimization challenges by leveraging and commercially exploiting such opportunities, and their orchestration challenges by supporting appropriate and purposeful resource management.

4.6. Individual capabilities

When identifying all previous growth-enabling capabilities, we also recognized a clear individual component. YTBF managers have a significant influence on their firm's growth path (see quote by TF5 in section 4.5), which is why their personal background, experience, and related capabilities are also likely to influence the implementation and direction of growth-enabling capability development in their firms (Kor and Mesko, 2013). We found that all our interviewees strongly emphasized how important individual managers'¹⁰ capabilities are for enabling growth. Specifically, we identified managerial ambidexterity, strategic leadership, emotional intelligence, and resiliency as those that best captured the growth-enabling individual capabilities relevant for YTBFs.

YTBFs' managerial ambidexterity refers to the need for a firm's management to balance both a strategic and entrepreneurial orientation [80–84]. More specifically, managers are expected to manage firm resources and operations as well as carry out opportunity-seeking activities to search for growth opportunities. YTBFs consistently struggled to balance these two behavioural orientations, since many (founder-) managers were innately better at one of them [81, 82].

When the environment changes, you need to be aware of the potential opportunities in that environment for you. An entrepreneurial mindset at that point is crucial for understanding and seeing the opportunity in the first place. In order to assess it, though, you need a more managerial take on the situation. (TF2)

Given a YTBF manager's influence, their managerial ambidexterity can stimulate the balancing between a firm's explorative and exploitative actions of assessment and evaluation of both short-term opportunities as well as longer-term strategic options, thereby also supporting the firm's development of both its absorptive and adaptive capabilities.

Viewed more broadly, a manager's ability to step back from day-to-day operations and take a holistic view of the firm was identified as its ability to leverage strategic leadership. Other related qualities included a manager's ability to create a culture of entrepreneurship [86] and at the same time orient the firm in the direction of long-term sustainable value [85]. Some of our YTBF interviewees identified strategic leadership as being open to change and flexibly adapting to it, as well as being able to communicate to multiple and diverse stakeholders to meet legitimation challenges [87]. The last two individual capabilities that our YTBFs and EEs frequently mentioned were emotional intelligence [88–91] and resiliency [92–93], both of which they claimed were critical to leadership and management. These two capabilities comprise self-awareness, the ability

¹⁰ In contrast to literature distinguishing between managers and entrepreneurs, we found that the core competencies of both roles often overlapped and thus did not explicitly separate them.

to motivate oneself and others, social skills, knowledge of people, and resilience in the face of setbacks.

Existing individual capabilities likely affect the development and effective use of all other growth-enabling capabilities since human resources represent the primary source of competitive advantage for knowledge-intensive firms and given the significant influence managers have on their organization. Thus, being able to manage one's workforce, create a unifying culture, and actively stimulate both inter and intra- firm collaborations were found to be essential for successfully addressing growth-transitioning challenges.

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5. Discussion: A multilevel framework of dynamic growth transitions in YTBFs

The aim of this study was to identify how YTBFs' capabilities facilitated their transitions between dynamic states during firm growth. We found that firms with developed growth-enabling capabilities can facilitate these transitions by being well-positioned to tackle the three types of multilevel growth challenges: entrepreneurial, orchestration, and legitimation (Levie and Lichtenstein, 2010). Our findings are consistent with the literature by identifying the specific growth-enabling capabilities that have previously been put forward as core components of dynamic capabilities (Wang and Ahmed, 2007; Parida et al., 2016) and expand on it by identifying others that have not previously been related to the context of YTBFs in the same manner. Fig. 1 illustrates our explanatory framework, connects our findings to existing theory, and outlines paths for future research.

Our results support earlier work arguing the related nature of a firm's learning capability to its absorptive capability (Sun and Anderson, 2010; Yu, 2013), yet slightly differ from and extend it by demonstrating its relation to other growth-enabling capabilities as well. More specifically, our framework identifies learning capability as the glue that binds the information a firm absorbs and the experiences it creates when confronting each of the multilevel growth-transitioning challenges (Sun and Anderson, 2010; Gabrielsson and Gabrielsson, 2013). Learning therefore represents a critical capability for firms to develop all of its other growth-enabling capabilities. Given their strong reliance on their human capital (Saemundsson and Candi, 2017), YTBFs' learning capabilities equally reside in its employees' learning ability, which likely determines the extent to which a firm can develop its other growth-enabling capabilities (North et al., 2016).

Our findings showing that the development of absorptive, adaptive, and innovation capabilities can enable firm growth support and extend those of Wang and Ahmed (2007), given our application to YTBFs and our empirical approach. Firms with

absorptive capability remain alert to new opportunities (Siegel and Renko, 2012) and can identify those that meet the demands of multiple stakeholders (Wu et al., 2020). While most YTBFs have limited structures and few routines, they do have inherent flexibility, which they can use to build foundational mechanisms to acquire, assimilate, and absorb external knowledge (Macpherson and Holt, 2007; Patel, 2019). YTBFs with such frameworks can expand and develop them over time to make sounder strategic decisions and, by implication, better manage (Zahra, 2021) and more easily mobilize (Clough et al., 2019) their resource base. Developing absorptive capabilities, therefore, enables firms to meet the entrepreneurial and orchestration challenges of growth transitions (see Fig. 1, [3]), a finding that adds further support to prior research (Cay, 2011).

Our study indicates that YTBFs with adaptive capability possess an inherent strategic flexibility, supporting Wang and Ahmed (2007) and demonstrates that adaptive capabilities are multilevel in nature: In addition to firm-level strategic flexibility, leveraging teams that are strategically flexible can help firms to quickly allocate or reallocate their resources, take strategic decisions, and act on them to capitalize on opportunities or respond to threats, thus allowing firms to respond better to orchestration challenges (Johnson et al., 2003). Developing this capability brings ancillary benefits as well, because it requires a firm to develop smooth and effective communication systems and build a culture of trust and commitment (Shimizu and Hitt, 2004), which increases its legitimacy to employees and benefits customers through enhanced innovation (Brozovic, 2018). Firms that have developed their adaptive capability are also better at assessing the potential value of (new) knowledge (Tamayo-Torres et al., 2012), which positively, albeit indirectly, impacts their ability to confront entrepreneurial challenges (see Fig. 1, [4]).

Although we initially expected to find a larger emphasis on the development of a firm's innovation capability in our results, it retains an important role in our framework. We found that well-timed exploitative innovation becomes increasingly important in helping firms overcome growth-transitioning challenges as they grow, a finding that differs somewhat from research emphasizing the importance of exploratory innovation in volatile environments (Hughes et al., 2020; Sirén and Kohtamäki, 2012). In line with existing research, however, we also find innovation to be a critical source for creating value in volatile environments (Camisón-Haba et al., 2019; Parida et al., 2016) and developing a competitive advantage (Kyrgidou and Hughes, 2010), while avoiding common pitfalls such as success or failure traps (Im and Rai, 2008; Wang et al., 2015). Past research has identified exploratory innovation as a way for firms to identify and capitalize on new value-creating opportunities, while identifying exploitative innovation as potential sources of competitive advantage by stimulating competency development and renewing capabilities (Kyrgidou and Hughes, 2010). While balancing both exploration and exploitation seems critical, we argue, as do Duane Ireland and Webb (2007), that each firm needs to find the right balance for itself, depending on its current

position (i.e., combination of resources, developed capabilities, strategy, and growth-vision) and the environment in which it operates (see Fig. 1, [6]).

The less-than-expected emphasis on this capability that emerged explicitly from our findings for enabling growth transitions also leads to interesting insights. YTBF managers have been found to often lack knowledge about their own firms' needs (Van Weele et al., 2017) and to possess a relatively stronger focus on the technological factors of their business (Berry, 1998). It is, therefore, likely that YTBF founder-managers operate under a dominant logic that perceives innovation as a defining feature of their firm or considers it as only radical breakthroughs resulting from experimentation. Our findings indicate that innovation does not automatically follow a YTBF's creation but rather requires significant and purposeful action in order to benefit the firm in growth transitions. Hence, YTBF managers would likely benefit from a better understanding of how approaches to innovation affect their growth.

Our findings further expand upon Wang and Ahmed's (2007) three core capabilities, with the identification of networking as a fourth essential capability for enabling YTBF's growth, thereby also supporting existing research findings (Maurer and Ebers, 2006; Parida et al., 2016). Networking capability—being able to adequately attract, assess, select, and leverage relevant ties—allows YTBFs to take advantage of support and advice from a network of professional experts to overcome challenges, provides them with access to opportunities (Fernhaber and McDougall, 2005; Parida et al., 2017; Walter et al., 2006), and can even expand their customer base to support their growth objectives (Yli-Renko et al., 2001). These findings on the importance of networking capabilities connect our work to social capital theory (Adler and Kwon, 2002; Maurer and Ebers, 2006), which argues that networks are critical to recognize opportunities and threats and assess them more thoroughly by using the experience and expertise of network ties (Hughes et al., 2014). Networking capability can also help firms attract resources, and support allocation decisions (Maurer and Ebers, 2006; Yli-Renko et al., 2001). In addition, connections to influential industry actors or individuals can legitimize YTBFs in the eyes of potential investors (Zimmerman and Zeitz, 2002) and thereby help them overcome their inherent liabilities of newness (Schoonhoven, 2014). A firm's networking capability can therefore help it overcome all three types of growth challenges (see Fig. 1, [5]).

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At the same time, our findings also reveal the limits of networking capability if not adequately leveraged, therefore offering additional support to prior literature adopting dynamic views of firm growth. A firm's social capital can become a liability rather than a strength if it is not dynamically adapted to changing environmental needs, as Maurer and Ebers (2006) found in biotech YTBFs. Even so, these authors' findings complement our own—specifically, that growth-enabling capabilities are interlinked, and that a YTBF with developed adaptive capabilities can leverage its networking capabilities.

The multilevel nature of dynamic growth is also made clear by the significant effect of a firm manager's individual capabilities. Since decisions in these firms are typically made by one individual or a small group (Storey et al., 1996), managers can significantly influence YTBFs' growth potential (Baron and Ensley, 2006; Baron and Henry, 2010; Grégoire and Shepherd, 2012; Helfat and Martin, 2015; Helfat and Peteraf, 2015; Wright et al., 2007). While our results on individual capabilities remain more top-level than other capabilities, they do support findings from other studies showing that managerial ambidexterity facilitates the development of growth-enabling capabilities, such as that of adaptive capability, for instance (Kouropalatis et al., 2012). These findings strongly suggest that YTBF managers' ability to cope with the complex and paradoxical challenges of growth will affect the extent to which firms develop their growth-enabling capabilities (see Fig. 1, [1]).

Finally, while not core to our study, our framework also acknowledges the impact of the external environment—or more specifically, managers' perceptions thereof—and the importance of a firm's availability of internal resources (Shepherd et al., 2015). Our findings indicated that differences exist between characteristics of actors operating within the supportive entrepreneurial ecosystem surrounding YTBFs, but also between the countries in which they operate. Furthermore, identified differences also extended to service versus product-based firms, indicating that particular capabilities may be more important depending on the type of firm. The same goes for acute and significant resource scarcity, which is a frequent reality in YTBFs (McKelvie and Davidsson, 2009; Zahra, 2021). More specifically, the immediate availability of resources significantly affects a firm's options for developing its capabilities. Firms with fewer financial or human resources may not have many options in developing their internal capabilities and confronting a particular growth challenge compared to their larger counterparts (Nordin et al., 2013).

Taken together, our findings suggest that a YTBF's current state determines which capabilities it should prioritize.¹¹ Our evidence indicates that no one capability is more important than another for enabling growth. Since all capabilities are equally valuable, deciding which one to prioritize depends on how developed a firm's current portfolio of growth-enabling capabilities is, what its managers believe its most-pressing challenges are, its environmental state, the firm's vision for growth, and its current resource endowments. YTBFs that have successfully transitioned between dynamic states (Levie and Lichtenstein, 2010) will likely have greater resource endowments and can therefore devote more resources to developing their growth-enabling capabilities.

Our findings indicate that all growth-enabling capabilities are inherently linked, with each capability catalyzing the others. The extent to which each one has been developed

¹¹ We thank an anonymous reviewer for pointing this out.

in a firm and the differences therein, may also influence their strategic value for that particular firm in their environment. Moreover, due to path dependency, the differences in these capabilities' development may also determine a firm's future growth (Helfat and Peteraf, 2009). For instance, a weakly developed absorptive capability or lack of understanding about how it manifests within the firm may obstruct a YTBf's innovation capability. Alternatively, these negative effects may result from a firm not strategically using its available resource endowments, indicating that it may lack strategic flexibility (e.g., Maurer and Ebers, 2006). Another possibility is that a manager has underdeveloped managerial capabilities (Helfat and Peteraf, 2015), resulting in a lack of strategic leadership (Subramaniam and Shankar, 2020).

Our study contributes to the literature by answering calls from scholarship (Wright and Clarysse, 2019) and policy (Autio and Rannikko, 2016; Desantola and Gulati, 2017) and provides practical insights and guidance for supporting entrepreneurial firms in managing their growth. By answering the simple yet fundamental question of how YTBfs grow, we also contribute to the strategic entrepreneurial literature and provide a framework for future research. Adopting a strategic entrepreneurship perspective to investigate the question of dynamic growth in the high-technology industry is a novel approach that allowed us to identify how YTBfs can apply insights from dynamic capabilities. Our findings add an underrepresented perspective to the strategic entrepreneurship (Morici and Zander, 2020) and dynamic capabilities (Schilke et al., 2018) literature since both literatures often focus on more established rather than on younger firms, albeit acknowledging the need to do so. Our framework helps explain which capabilities influence YTBfs' dynamic growth process and how they do so, providing a solid foundation for further empirical research into the complexities of capabilities and growth.

5.1. Limitations and future research implications

The limitations of our study also provide future researchers with several avenues for better understanding young firms' growth. First, while our results provide insights into which capabilities are essential for overcoming dynamic growth-transitioning challenges, we do not explore how their implementation and the extent thereof, affects performance. We therefore invite future research to more closely examine how these capabilities affect YTBf performance and how effective they are at helping YTBfs overcome these challenges. The growth-enabling capabilities we investigated are measurable and can therefore be examined in empirical research, which we strongly encourage, given the current underrepresentation of young entrepreneurial ventures in this field of research (Zahra, 2021).

Second, our sample size prevented us from making more-generalizable conclusions applicable to the larger population of YTBfs. Since developing dynamic capabilities demands time and resource investments, we encourage researchers to carry out

longitudinal empirical studies with a larger sample of similar YTBFs to validate our findings. Because we did not actively differentiate between service and product firms, future research that does could uncover further specificities and differentiate our findings. Relatedly, since we found that a firm's current state affects its choice and application of capabilities, future large-scale research could explore how different YTBF states influence the (strategic) importance of individual growth-enabling capabilities. Third, while recognizing the importance of understanding the underlying mechanisms for effectively leveraging a firm's learning capability (Sun and Anderson, 2010), we did not explore these mechanisms further. We invite future research to expand our understanding of such underlying learning mechanisms and how they relate to other growth-enabling capabilities.

Fourth, we often saw that internal and external factors (e.g., a firm's current resource availability and manager's perception of its environment) influenced how firms approached growth challenges, yet exploring these in more depth fell outside of the scope of this article. Our findings and framework might therefore depend on a firm's context. While we acknowledge the influence of these factors in our framework (see Fig. 1, [2]), we could not provide further details about how they affected firms' approaches to their challenges. Nevertheless, the importance of contextual factors demonstrates that YTBF growth is increasingly complex and multilevel and is an intriguing avenue for future research, which is why we encourage researchers to further explore these factors in greater depth.

Finally, we studied YTBFs, which, by definition, operate in a volatile and dynamic environment. This focus means that our findings are not generalizable to firms operating in more-stable or less-volatile environments. Most likely, the capabilities, their effect on overcoming growth-transitioning challenges, and the necessary challenges to overcome are different for firms operating in these less-volatile environments.

5.2. Managerial implications

In addition to our contributions to research, our study also has implications for managers, policymakers, and actors of growth-oriented organizational sponsorship initiatives. Since we identify how YTBFs can effectively enable dynamic-growth transitions, managers of resource- and time-constrained YTBFs can get a better view of where to orient their efforts, why, and when to do so. Our framework allows managers to reflect on and better understand the capabilities it has been focused on and which ones require more of their attention to enable their intended growth.

Our research also provides YTBF managers with a more holistic view of how such firms operate and can help them identify possibilities for growing their businesses. To our knowledge, no research has connected capability development to its growth-transitioning effects for YTBFs. Our framework complements YTBF managers'

technological back- ground and can help clarify for them how to use capabilities to enable their firms' transitions between dynamic states. We believe this knowledge and perspective could help them make better strategic and entrepreneurial decisions and, thereby, help them grow.

Given the comparatively larger contribution that growing entrepreneurial ventures have to economic growth and job creation (Coad and Reid, 2012) than entrepreneurial ventures not aiming to grow, policy-makers might also benefit from our research since it helps them better understand how to support YTBG growth (Shankar and Clausen, 2020). Policymakers have mostly focused on nurturing supportive entrepreneurial ecosystems aimed at venture creation, rather than venture growth. While recent reports show indications of a shift in that focus (European Commission, 2020), there remains ample leeway for improvement (Mind The Bridge, 2018). Our research may provide a foundation for developing new approaches for facilitating and supporting YTBG growth by shifting attention to the specific needs of YTBGs and how to go about detecting them. In addition to arguing that firms and policymakers adopt a dynamic perspective of growth to investigate how to better support YTBGs' growth, we also suggest that the discussions about the use and implementation of dynamic capabilities are introduced earlier in these young ventures' lives. Doing so may help policy-makers better allocate their resources within existing entrepreneurship support ecosystems by better understanding long-term needs of YTBGs, thereby increasing value creation from these investments (Breivik- Meyer et al., 2020). A specific example of how our study's contributions could impact this would be the focus on assessing growth-enabling capability development of YTBGs when assisting them in finding a relevant (matching their needs) organizational sponsorship organization (Amezcu et al., 2020).

Finally, and related to this, since our framework is measurable, future empirical research adopting this framework might be able to bridge current information asymmetries in the organizational sponsorship market. Transactions between venture capitalists or business angels and YTBGs, for instance, are often insufficiently transparent (Sapienza and De Clercq, 2000), which prevents the smooth closing of financial transactions. In contrast to US venture capitalists and business angels, their European counterparts seem more conservative and assess a potential "sponsee" more critically before closing a deal. Converting our framework to a measurable tool would allow these financial backers to use it to increase transparency by more tangibly assessing the qualitative aspect of a YTBG's growth potential. Our framework could thus complement financial assessments as well as significantly decrease the information asymmetry that currently exists.

6. Conclusion

By way of a systematic combining approach, we explored the interrelated nature of dynamic growth-transitioning challenges and the importance of core components of

YTBFs' dynamic capabilities in confronting them. We identified six different capabilities that enable YTBFs to transition between dynamic states of growth and argue that developing these capabilities over time may provide YTBFs with potential competitive advantages because of their uniqueness resulting from path-dependency. The multilevel framework that we developed clarifies the relationships between growth-enabling capabilities and challenges of dynamic growth-transitions, while also supporting our understanding of the applicability and importance of dynamic capabilities for YTBFs. Our study provides insights for the strategic entrepreneurship, dynamic growth, and dynamic capabilities literatures and offers future researchers a comprehensive, multilevel approach for investigating the growth process of YTBFs.

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7. Appendix

Appendix A Semi structured interview protocol YTBFs

The interviews were guided by a semi-structured interview protocol which started with a discussion of the company's growth trajectory beginning from the commencement of the firm up to current operations. Questions addressed issues of which challenges were encountered at what times, how the company manager(s) first became aware of these issues, and how and why they approached them. To further deepen potential answers, the managers were asked what they had learned to be critical factors to their growth in hindsight. This was discussed both on the level of the individual as well as on the organizational level. The framing of the topics was done in terms of the management of change during growth within the organization.

Main interview questions related to key topics discussed

Descriptives

- When was your company founded and by whom? How many employees were employed at foundation?
- How many people does the company currently employ?
- In how many countries is the company currently operating? Please elaborate on the way in which you are present in these countries.
- Can you describe your company's goal in terms of its vision, mission, and strategy?
- Can you describe your professional and educational background prior to this function? Please also elaborate on the high-tech industry and entrepreneurship.
- Can you describe to me what the company's structure currently looks like? How does this differ from X years ago? * $X = \text{current year} - \text{year of foundation}$.
- What is your role in the firm? What other roles exist in your firm, and how are these divided?
- What are critical factors to take into account when recruiting new employees?
- What differs for entrepreneurial firms in the technology industry as opposed to those present in non-technology-based industries?

Start-up process

- Why was the firm established?
- Can you tell me about the start-up process? Please describe the duration of the process, the difficulties of the process itself and how you managed to overcome those.
- In hindsight, what would you have done differently if you had known what you know today?

Growth and development process

- Can you describe the growth and development process? Please describe the difficulties of the process itself and how you managed to overcome those.
- How does the growth-process differ from the start-up process?
- What should a team look like within a successfully growing entrepreneurial firm in your industry?

Appendix B Semi structured interview protocol EEs

Main interview questions related to key topics discussed

Descriptives

- Please describe what your company does. Can you describe your company's goal in terms of its vision, mission, and strategy?
- In how many countries is the company currently operating? Please elaborate on the way in which you are present in these countries.
- Can you describe your professional and educational background prior to this function? Please also elaborate on the high-tech industry, entrepreneurship, and working with start-ups and scale-ups.
- What is your role in the firm? What other roles exist in your firm?

Organizational support role

- What kind of client firms does your company work with?
- What selection criteria do you employ in order to select client firms?
- Which difficulties do you see your client firms commonly struggle with?
- How do you support firms in confronting these difficulties?
- What are critical factors that have helped firms confront these difficulties?
- What differs for entrepreneurial firms in the technology industry as opposed to those present in non-technology-based industries?

Growth and development process difficulties

- How would you describe the growth and development process of start-up firms? Please also elaborate on the difficulties of the process itself
- How does the growth-process differ from the start-up process?
- What should a team look like within a successfully growing entrepreneurial firm in your industry?
- What are critical factors to take into account when recruiting new employees?

Appendix C Illustrative quotes describing the types of growth-transitioning challenges

Table 4
Illustrative quotes of growth transitioning challenges

Type of challenge		Illustrative quotes
Entrepreneurial	1	"[...] product-market fit is one of the big issues that start-ups highlight. So, they have a great idea, they start the company, and they realize that the market isn't looking for that, actually. And then most of the time, they pivot in a way, and there are multiple ways to pivot." (EE1.2)
	2	"We have an international team, which naturally comes with communication barriers you need to cross." (TF3)
	3	"[...] discover opportunities as well as create your own. It really depends on the situation [...]." (TF8)
	4	"There are many possibilities for renewal and bettering companies. Some companies are actually relying on that change to happen and might already be waiting with a better product or value proposition. [...] If you miss the bus on some of those new developments, you might end up months behind your competitors." (TF8)
	5	"[Serving the right customer, in the right way] can only be achieved if you know your customer [and] understand their needs [...]." (TF7)
	6	"[...] if you want to internationalize and you want to grow very fast, because start-ups [by definition] have to grow exponentially [to gain legitimacy by attaining the larger mainstream markets], [your start-up] has to [find] international [opportunities] immediately." (EE1.2)
	7	"[About internationalization] Important if you have a product that is scalable, then the local [Belgian] market will not be large enough." (TF6)
	8	"[...] Importance of internationalization really depends on what you offer. If you're a service company, you would better start close to 'home' and then move gradually over the border to neighbouring countries. But if you're a product-based company [...] you should scale immediately, because with a product the competition is different [than with a service offering]." (TF5)
	9	"If you want to grow, you have to internationalize, specifically talking about Belgium. Doesn't really matter whether you're a product or service firm." (TF4)
	10	"If you're a product company, scalability and innovation are crucial for [international] growth." (TF3)
Orchestration	11	"A team is truly of the highest importance. You can have the best idea, but if you don't have a team that can execute it properly, you'll get nowhere, and your idea is also worthless." (EE1.2)
	12	"We have an international team, which naturally comes with communication barriers you need to cross. Being efficient in collaborating with an international team that is also located in separate countries is of key importance to us." (TF3)
	13	"[...] we first internationalized to the US besides our local market here in the UK, because possibilities for very fruitful partnerships were discovered there." (TF8)

Legitimation

- 14 “[Serving the right customer, in the right way] can only be achieved if you [...] are able to translate [customer needs] to your production and delivery processes.” (TF7)
- 15 “[...] we are still unable to get in the price range possible for [our] target market. [...] Although it’s not an actionable plan right now, [...] doesn’t mean it’s something we’re forgetting. It’s a matter of assessing which opportunities to pursue “right now” and which to pursue “maybe later.” (TF3)
- 16 “[Paying for the right advice] will cost you money of course, but it’ll save you money in the long run, because it’ll keep you from making mistakes start-ups make.” (TF8)
- 17 “I outsourced a lot of things and worked with a lot of consultancy firms from the start if I didn’t know how to do something. [...] It saved me so much time.” (TF6)
- 18 “[Making] decisions [about] investing [...] [and] paying for the right advice [for example].” (TF8)
- 19 “[It’s critical to be able to] continuously adapt when necessary. Both small and large changes [...].” (TF6)
- 20 “We’ve had many difficulties along the way, but by far the most prevalent was attracting and retaining talent. This was an issue right from the start, but it became even more crucial when the firm developed into a more professional firm. Not only is it hard to attract talented people who want to work in the dynamic environment of a high-tech start-up, with actual skills, and willing to do so for a lower salary than they are used to, it is also very difficult to retain them.” (TF1)
- 21 “[...] I believe that in our [the high-tech] industry, commercial talent, such as sales or marketing, is the hardest thing to find.” (TF7)
- 22 “[...] Importance of internationalization really depends on what you offer. If you’re a service company, you would better start close to ‘home’ and then move gradually over the border to neighbouring countries. But if you’re a product-based company [...] you should scale immediately, because with a product the competition is different [than with a service offering].” (TF5)
- 23 “If you want to grow, you have to internationalize, specifically talking about Belgium. Doesn’t really matter whether you’re a product or service firm.” (TF4)
- 24 “[...] hiring the first foreign employee was a real struggle for us. Institutional constraints kept popping up.” (TF3)
- 25 “Staffing has always been a struggle, particularly in the beginning. Since we also didn’t have any experience with starting our own business prior to this, we’ve had to learn along the way and made some wrong decisions.” (TF8)
- 26 “[Serving the right customer, in the right way] can only be achieved if you know your customer [and] understand their needs [...].” (TF7)
- 27 “The essence is often to find out how the firm will [be able to] create value for its multiple stakeholders. [e.g.] Customers, their own firm, their employees, potential investors, potential stakeholders, etc.”. (EE3.2)
- 30 “Risk aversity of investors is also a very large struggle. There is such a fixation on the business plan of your firm. [...]. Sometimes you would hope that they can see what you see and focus more on the company, it’s vision, its people, and not only its numbers or the business plan, which always changes and takes up so much time to develop, that eventually you might lose business, just by engaging in developing such documents.” (TF7)
- 31 “Certainly in Europe, where investors are more conservative than in the US, they tend to look at things in another way. So for Belgium and

- European start-ups, it's important to have the business model right as soon as possible. So, but they do tend to neglect it. And we see that the companies that have a working business model, are doing a lot better than the ones that don't have a valid business model." (EE1.2)
- 32 "[It's critical to be able to] continuously adapt [...] and [to] take stakeholders with you. The difficulty is finding a way to do so successfully." (TF6)
- 33 "[...] if you want to internationalize and you want to grow very fast, because start-ups [by definition] have to grow exponentially [to gain legitimacy by attaining the larger mainstream markets], [your start-up] has to [find] international [opportunities] immediately." (EE1.2)
- 34 "If you're a product company, scalability and innovation are crucial for [international] growth." (TF3)
- 35 "You need to convince not only your customers, but potential investors, grants, etc. [...] Much of what they want to know overlaps, but they're all different in some kind of way." (TF6)

Table 4 contains some illustrative quotes from our analysis supporting our analyzed findings. Given the interrelated nature of these challenges, some quotes can be referenced for more than one type of challenge.

* If the interview was not recorded, only actually annotated quotes were used. Descriptions of explanations can be found in the findings section.

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Tables and Figures

Table 1

Descriptive information on data collection*

Code	C	Function(s)	Mins	Date	Format	Interview type	Data Type
EE1.1	BE	CEO	30	March 7, 2019	Phone	Exploratory	Notes
EE2.1	FR	GM & PM	60	March 11, 2019	Virtual	Exploratory	Notes
EE3.1	NL	Researcher / PM	60	March 14, 2019	F2F	Exploratory	Notes
EE4.1	UK	PM	60	April 10, 2019	Phone	Exploratory	Notes
EE5	FR	Consultant	90	October 16, 2019	Virtual	Exploratory	Notes
EE1.2	BE	CEO & PM	90	May 13, 2019	F2F	Semi-structured	Notes
EE2.2	FR	PM	60	April 30, 2019	Virtual	Semi-structured	Notes
EE3.2	NL	Researcher / PM	60	May 2, 2019	F2F	Semi-structured	Notes
EE4.2	UK	PM	100	April 25, 2019	F2F	Semi-structured	Recording
EE6	BE	Consultant	90	December 6, 2019	F2F	Semi-structured	Notes
TF1	NL	GM / Co-founder	60	July 18, 2019	F2F	Semi-structured	Recording
TF2	NL	GM	30	July 18, 2019	F2F	Semi-structured	Recording
TF3	BE	CEO / Co-founder	90	November 7, 2019	F2F	Semi-structured	Notes
TF4	BE	CEO	90	November 22, 2019	F2F	Semi-structured	Recording
TF5	BE	CEO / Founder	120	November 21, 2019	F2F	Semi-structured	Recording
TF6	BE	CEO / Co-founder	40	October 30, 2019	Virtual	Semi-structured	Notes
TF7	UK	CEO	150	July 3, 2019	Virtual	Semi-structured	Recording
TF8	UK	CEO / Founder	150	October 15, 2019	Virtual	Semi-structured	Recording
FG1	ALL	AEs & Es	128	May 6, 2020	Virtual	Focus group	Notes
FG2	BE	AEs	155	June 5, 2020	Virtual	Focus group	Notes

*EE = Entrepreneurial Expert, AE = Academic Expert; TF = Tech-based Firm, FG = Focus Group, C = Country code, GM = General Manager, PM = Project Manager, Mins = Duration of interview in minutes, F2F = Face to Face.

Table 2**Table 2**Data structure leading to aggregate dimension of *growth-enabling capabilities*

First order categories	Second order themes
Actively reducing unnecessary risk-taking by leveraging professionals	Learning capability
Actively seeking to learn from experts in the field	
Actively seeking to learn from the market	
Actively seeking to learn from experiences	
Utilizing collaborative decision making to leverage diverse knowledge capital	Absorptive capability
Active sourcing of external information from various sources (e.g., customers, mentors, advisors, competitors, industry)	
Application of collected knowledge to firm-specific case	
Creating close market / customer feedback loops to acquire knowledge and test assumptions (e.g., customer involvement)	
Adaptability of core business model and strategy components to multilevel and continuous changes in the environment through strategic flexibility (e.g., alertness, evaluation, informed action, reversal poor decision-making)	Adaptive capability
Creating close internal feedback loops to remain alert to potential internal requirements	
Creating internal communication systems to improve cross-departmental collaborations, increase transparency, and anticipate negative outcomes	
Staffing complementary to existing competencies and skills to increase team diversity and strategic flexibility	
Adequately leveraging team strengths	Networking capability
Creating visibility and acknowledgement	
Developing relevant-to-the-firm connections (e.g., resource partners, human capital, external advisors, investors, customers)	
Leveraging your network (e.g., board of advisors, industry experts, media, customers)	
Internally focused exploitation (i.e., process, approach, or management innovation by exploiting internally available resources, knowledge, and capabilities)	Innovation capability
Active exploration of firm-and market-opportunities	
Managerial ambidexterity (e.g., balanced opportunity seeking and exploitation behaviour)	Individual capabilities
Strategic leadership (e.g., visioning, openness to change, communication, flexibility, decision-making, bridging)	
Emotional intelligence (e.g., self-awareness, motivation, social skills)	
Resilience	

Table 3**Table 3**

Illustrative quotes of growth-enabling capability development activities

First order categories		Second order themes illustrative quotes
		<i>Learning capability</i>
Actively reducing unnecessary risk-taking by leveraging professionals	1	"All of these experts [e.g., accountant, lawyer, HR, ...] know which kind of function-specific issues you're going to encounter, it will cost you money of course, but it'll save you money in the long run, because it'll keep you from making mistakes start-ups make." (TF8)
	2	"Employ people who are experts in their field." (TF3)
Actively seeking to learn from experts in the field	3	"They [a board of advisors] make you think about things you haven't thought about before [and challenge your ideas]." (TF5)
	4	"[About talking to and involving experts] This will help you take the right decisions when it comes to investing for the right support. Paying for the right advice." (TF8)
	5	"[...] you also need to stumble over some blocks in the [learning] process. I personally was fortunate to having encountered a mentor who really showed me the ropes." (TF6)
	6	"In fact [...] I took a sales course once and a negotiation course. They were, without a doubt, the most interesting and useful courses for my function in my opinion, to build inter-relational capacity on." (TF4)
Actively seeking to learn from the market	7	"Speaking to your customer is the only way you're going to understand what they need. [...] but you need to [know how to] listen." (TF2)
Actively seeking to learn from experiences	8	"Many of them [entrepreneurs] are doing the same things over and over again, [and] expecting a different outcome. There is definitely a need for a simple and easy way of finding out 'what you're doing wrong' and incentivizing a change of 'mindset' or even approach to the business." (EE4.2)
	9	"Learn from start-up mistakes in the sense that you are aware of the possibilities of something going wrong or decisions that essentially do not lead to the best outcome. [...] Since we also didn't have any experience with starting our own business prior to this, we've had to learn along the way and made some wrong decisions [such as staffing]. It happens, it costs you money, but you need to continue learning from them." (TF8)
	10	"[...] hiring the first foreign employee was a real struggle for us. Institutional constraints kept popping up, and that's when experience of [...] really comes in handy. Now we know, we learned from experiencing it, what we are required to do and to foresee and how to cope in the meantime, while administration issues are being solved." (TF3)
	11	"After having realised [that hiring entrepreneurially-minded people was leading to losses of good hires], we switched to focusing on not attracting these types of people anymore since we were ultimately bound to lose them in the long run. Not only do you lose tacit knowledge, but it costs money and time to invest in training and educating newly hired individuals." (TF1)
	12	"We really emphasize that functional departments interact. It's crucial that technology can explain what's happening to marketing, and that marketing can get back to management, and so on, and that the information is correct. [Otherwise] efficiency will also be suppressed." (TF1).
	13	"[...] being active in applying for grants [for instance] forces you to look at your company from a different perspective. [Because] much of what [different stakeholders] want to know overlaps, but they're all different in some kind of way. Understanding what they want

Utilizing collaborative decision making to leverage diverse knowledge capital	14	forces you to look at your company from a different angle and understand what 'legitimate' means for someone else." (TF6) "When a strategic decision (for change for instance) needs to be made, we make it with the team. [...] Usually, this brings to relevant ideas and an eventual suggestion from the [...] team [...] [and] it has much more chances of success." (TF4)
Absorptive capability		
Active sourcing of external information from various sources (e.g., customers, mentors, advisors, competitors, industry)	15	"[...] product-market fit is one of the big issues that start-ups highlight. So, they have a great idea, they start the company, and they realize that the market isn't looking for that, actually. And then most of the time, they pivot in a way, and there are multiple ways to pivot." (EE1.2)
	16	"It's important to understand your market [...] [since it] can change very fast at times, and that's where you need to see what you're going to do [considering you firm's resource position]." (TF8)
	17	"There are many possibilities for [...] bettering companies. Some companies [...] might already be waiting with a better product or value proposition. That's also why it's so important to continuously know what's going on in the environment. [...] You should keep up with R&D, keep reading and keep up with trends in the industry in order to be able to understand the newest changes in the environment" (TF8)
	18	"[Talks about finding financial support and multilevel demands in the environment] Anticipate by looking for the right information and adapting to those findings. This doesn't only count for investors [...], it's a general rule for all partnerships you want to pursue, or new innovations you want to implement." (TF3)
	19	"[...] my radar is always on. [...] towards the external environment and the trends and changes that happen there." (TF4)
	20	"I personally was fortunate to having encountered a mentor who really showed me the ropes." (TF6)
	21	"[Serving the right customer, in the right way] can only be achieved if you know your customer [and] understand their needs [...]." (TF7)
	22	"In order to be able to gain support, financially for instance, you need to be able to understand those that you're targeting for support. [...] what kind of information they need in order to assess your 'quality or potential'." (TF3)
	23	"In order to be able to succeed in your market, you need to be market-oriented. You need to engage in market research to find the viability of a product or a market." (TF7)
	24	"Speaking to your customer is the only way you're going to understand what they need." (TF2)
	25	"It's very important [to be open to market demands], because business originates from the market. A part of technology emerges due to the fact that you want to resolve an issue, and that issue needs to be linked to the market and your abilities. It needs to fit through iteration. You can't expect to make some technology and try to find the puzzle piece where it might fit. Chances are you won't be able to find it." (TF5)
Application of collected knowledge to firm-specific case	26	"[...] discover opportunities as well as create your own. It really depends on the situation [...]. For us, we first internationalized to the US besides our local market here in the UK, because possibilities for very fruitful partnerships were discovered there." (TF8)
	27	"[Serving the right customer, in the right way] can only be achieved if you [...] are able to translate [customer needs] to your production and delivery processes." (TF7)
	28	"Speaking to your customer [...] doesn't mean you need to [implement] everything they say, you just need to learn to filter out what's useful to you." (TF2)

	29	“Know what you need and apply it.” (TF3)
	30	“[After networking activities to create visibility] we then got offers from two banks who we played out against each other strategically. Of course, you can’t forget, we had also put a significant amount of own capital in the company, which [we learned] adds to the sense of trust with the bank.” (TF5)
	31	“We are [currently] working with large harbour companies and [...] realized that our product has many useful applications in that industry [for] smaller harbours [...]” (TF3)
	32	“[About board of advisors] It’s not as if you have to do whatever they say. You just listen and filter out what you believe is relevant. [...] You implement what you think is applicable [to your specific case].” (TF5)
	33	“Our market was pretty traditional, not very innovative or trending, [...] really costly, complex, and not very attractive to [...] operate in. The reason we saw an opportunity there, was because we wanted to provide clients with the tools to do what they were already doing (or not doing) but at a lesser cost and a more efficient, effective, and user-friendly way.” (TF3)
Creating close market / customer feedback loops to acquire knowledge and test assumptions (e.g., customer involvement)	34	“[...] You’re constantly testing, iterating, and feedback-looping with the market in order for the potential target-market to confirm the interest in your product, and for you to gain confidence in the relevance of your product for the market. This [...] was an essential part of our company’s development process.” (TF1)
Adaptive capability		
Adaptability of core business model and strategy components to multilevel and continuous changes in the environment through strategic flexibility (e.g., alertness, evaluation, informed action, reversal poor decision-making)	35	“The essence is often to find out how the firm will [be able to] create value for its multiple stakeholders. [e.g.] Customers, their own firm, their employees, potential investors, potential stakeholders, etc.” (EE3.2)
	36	“[About challenge detection and on surmounting it] It’s a process that will go on for as long as the start-up is in existence. Even with the scale-ups [...], they still keep changing and pivoting. Like [Belgian unicorn firm], for instance [...] I know them from the start, since 2008. They’ve been constantly changing, not only their business model but their target audience, everything. So, it’s a process, and in the beginning, you don’t know all the answers, and that can take years, actually.” (EE1.2)
	37	“It’s important to [...] be able to adapt quickly to the [rapidly changing market] demands.” (TF8)
	38	“As the firm grows, you’re bound to encounter large structural changes, and you need to be aware of this. Take my example (CEO), 4 years ago I was the first full time employee, and we didn’t have an office or anything like that. The job description you have then, is completely different than what you have now. Today, we’re with 55 employees, we have 3 establishments, that’s a different structure and completely different roles.” (TF4)
	39	“In order to be able to gain support, financially for instance, you need to be able to understand those that you’re targeting for support. [...] what kind of information they need in order to assess your ‘quality or potential’.” (TF3)
	40	“[Market demands] can change very fast at times, and that’s where you need to see what you’re going to do [considering you firm’s resource position].” (TF8)
Creating close internal feedback loops to remain alert to required improvement of current operations and inform (strategic) decision-making	41	“We previously continuously looked at what the customer wanted and built it for them. But [by reflecting on this internally and experiencing decreased productivity] we found out that in order to scale, we needed to increase the efficiency in [how we are approaching] this.” (TF5)

<p>Creating internal communication systems to improve cross-departmental collaborations, increase transparency, and anticipate negative outcomes</p>	<p>42 “[During bi-annual strategic meetings] [...] we make use of portfolio planning. [...] [where we] mostly [...] focus on preparing for the negative scenarios, [since] we believe that if you’re ready for the worst case, you’re also prepared for the best case. [...] In my opinion, you should only focus on the negative scenario’s. [...] if you end up with a better / best scenario, you’ll deal with that as it comes.” (TF1)</p> <p>43 “You should know why you’re taking a specific decision, such as taking someone new onto the team. [...] Understand your decision, make it consciously and evaluate how those decisions have progressed you towards your goal.” (TF8)</p> <p>44 “Understand cash-flow. Understand the finance of business, from attaining the money to distributing and allocating it, as well as understanding it in its entirety.” (TF7)</p> <p>45 “Eventually, you understand that internally, [...] people [that fought the internal changes occurring with growth] didn’t fit with your company anymore, and specifically the development period it was going through. [Although] it’s both good for the people and the firm, to part ways at this point [, it is still not easy to do].” (TF2)</p> <p>46 “In our company, we come together at least twice a year on strategic level to think actively about how the future might look.” (TF1)</p> <p>47 “At the start the roles were more emergent. Today, it’s different since we’re moving towards scaling, we’re also aiming to restructure our role definitions. But this doesn’t mean that it won’t happen that people work on different jobs, it definitely will, but to a much lesser extent than before.” (TF8)</p> <p>48 “After a while, things had to be more specifically organized and formalized, [which led to a] division [...] between people that were on board with that change, and people who fought it.” (TF2)</p> <p>49 “We have an international team, which naturally comes with communication barriers you need to cross. Being efficient in collaborating with an international team that is also located in separate countries is of key importance to us.” (TF3)</p> <p>50 “In our company it’s important that communication flows freely and effectively. We really emphasize that functional departments interact. It’s crucial that technology can explain what’s happening to marketing, and that marketing can get back to management, and so on, and that the information is correct. If there’s a gap somewhere or communication is hampered, efficiency will also be suppressed.” (TF1).</p>
<p>Staffing complementary to existing competencies and skills to increase team diversity and strategic flexibility</p>	<p>51 “When you’re professionalizing your company and want it to grow, your internal environment is crucial. A good, collaborative team is essential to your company’s successful growth achievement.” (TF8)</p> <p>52 “Diversity is incredibly important. You need a combination of commercial talent and technological talent. The technological person has the vision and the knowledge to build your product and make it great. But the commercial talent is equally important, since these are the people that will know how to approach clients, build contacts, and do so both with investors and with clients.” (TF7)</p> <p>53 “We want to be a very diverse company because we see what kind of potential and strength that provides us with.” (TF3)</p>
<p>Adequately leveraging team strengths</p>	<p>54 “The fact that we were constantly adapting procedures and approaches, [...] and experimented with new ideas [...] was very overwhelming for [some employees]. People who aren’t used to this kind of work process usually have a difficult time working in a scale-up [...] [and] often also leave.” (TF4)</p> <p>55 “A team is truly of the highest importance. You can have the best idea, but if you don’t have a team that can execute it properly, you’ll get nowhere, and your idea is also worthless.” (EE1.2)</p>

	56	“People are everything [...] If you can put the right person at the right task, you’re already halfway there.” (TF5)
		Networking capability
Creating visibility and acknowledgement	57	“We first focused on airports only. [...] It’s not until we went to a military show in London, that we saw an opportunity to get into the marine-market, which was a completely new market for us. [...] that was the base for our first expansion [initiative].” (TF7)
	58	“It became apparent really quickly that we became some kind of ‘token’ of entrepreneurship in the high-tech world. So, banks really like that. That they can be named ‘your company’s bank’.” (TF5)
	59	“[Talks about networking activities] You should go with a clear idea about what you want to get out of it and aim to connect with the right people to accomplish that goal, immediately.” (TF3)
	60	“If you found a nice technical solution, that you personally really like, but you can still not communicate its relevance to the outside world (sell it to the customer), then you’ll get nowhere.” (TF1)
Developing relevant-to-the-firm connections (e.g., resource partners, human capital, external advisors, investors, customers)	61	“We organize such events for firms in the same range of income, so that they meet with people that have similar interests.” (EE6)
	62	“Many of our firms just go networking, but don’t really have a goal. Then, they’re coming to tell us, they’re just meeting people and not gaining anything from it. [...] They often don’t see the long-term value of connecting to certain people in the short run, with the benefit for the long-run.” (EE4.2)
	63	“It’s definitely interesting to talk to another entrepreneur, hear about their stories and how they managed to overcome particular hurdles throughout their start-up period. But when you’re becoming a more adolescent firm, it’s much more efficient, both cost and time [wise], to find experts to tell you what they know and asking them questions about specific operational aspects. [...] Because now that’s what matters when you want to scale.” (TF8)
	64	“They’re not networking in the right places, and thus not meeting the right people. [...] It’s mostly about getting your name out there. Which comes back to specifically knowing how to network and using the contacts you have as relationships rather than just thinking of a networking occasion as “will this person be able to provide value to me and my business or not, right now?”.” (EE4.2)
Leveraging your network (e.g., board of advisors, industry experts, media, customers)	65	“[About board of advisors] It’s really important, because these people are ambassadors for your company, all the while being people that help you. These people open doors, they give you advice. It really always helped me a lot.” (TF5)
	66	“Through my network and the activities that I undertook, I got to know my mentor, who [...] taught me a lot. [...] linked me to professionals who I could then easily connect to or ask for help when I needed advice or a reference.” (TF6)
	67	“I also employ [the use of a mentor], and I think that’s very important. One of the investors in [large firm name and investor name], I see him each month for one hour and that’s my sparring partner. [...] you need someone like that to share ideas, thoughts and potential doubts with. I have a lot of ideas, but I can’t share them with all of my colleagues because they’ll get nervous. I need to have someone that doesn’t have any personal interest in my company, but does know what their talking about, to reflect on this with me.” (TF4)
	68	“[...] we present [the customer’s] purchase [...] as [an opportunity of] becoming part of the development team which they can jump on board off. We keep them updated on further tweaks and quality improvement [...] [and] stay in close contact.” (TF1)

	69	"I outsourced a lot of things and worked with a lot of consultancy firms from the start if I didn't know how to do something. [...] It saved me so much time." (TF6)
Innovation capability		
Internally focused exploitation (i.e., process, approach, or management innovation by exploiting internally available resources, knowledge, and capabilities)	70	"After we decided what to do concerning outsourcing [due to lack of specialized skills and resources for hiring experts], we adapted [core elements of our business model and] made some internal decisions of process structure [changes]." (TF8)
	71	"We are constantly adapting, trying new things, bettering other aspects, changing again. It's a fast-paced, sometimes very flue process, but it's a requirement for scale-ups." (TF4)
	72	"Our market was pretty traditional, not very innovative or trending, [...] really costly, complex, and not very attractive to [...] operate in. [...] we saw an opportunity [...] to provide clients with the tools to do what they were already doing (or not doing) but at a lesser cost and a more efficient, effective, and user-friendly way. By providing [...] customers with [the right] tools, [...] [we] provided a less costly and less complex way of doing something they'd [...] already been doing." (TF3)
	73	"[...] we were constantly adapting procedures and approaches, that we tried and experimented with new ideas and processes." (TF4)
Active exploration of firm-and market-opportunities	74	"I was [experiencing a personal inefficiency] and assumed that other people will probably be facing similar problems right now. [...] A good alternative didn't exist. I had the knowledge and background [...] so, I started building something for myself, which I eventually commercialized into my current business." (TF6)
	75	"[...] we're still exploring [...] in more international markets as well because we want to see whether our products might have traction there too. So, we try experimenting with market demand as much as our budget allows." (TF8)
	76	"[The explorative orientation] that I had [helped the company grow] due to the fact that we always took on new projects and thus new people [to implement those projects]." (TF5)
	77	"Look at all the possible opportunities for your business [later refers to this as not only direct but also indirect competitors and potential alternatives that may be coming with the surge of advancing technologies]." (TF3)
	78	"Our company aimed to develop a new, innovative, product that hadn't been built before and that we had also never built before. [...], [it] was both new to the market as it was new to us. [...] the market we were going to serve, didn't exist yet, since the market didn't know they had a problem that could be solved. [...] we created a new market that was both new for the customers as it was new to us." (TF1)
	79	"[the product] was first operational in the real estate business, but then we noticed it could also be used in other industries [...] so after adaptations and a lot of trial-and-error, we found we could provide a lot of value within the harbour industry." (TF5)
Individual capabilities		
Managerial ambidexterity (e.g., balanced opportunity seeking and exploitation behaviour)	80	"[About reasons for firms' inability to grow] Some entrepreneurs start with an idea to develop a company that they want to standardize quickly, or they want to better the product they have as much as they can, but they neglect to try or to exploit, due to potential failures in the past or due to the willingness to grow fast. It's different for every firm, but you need someone at the reigns to manage such change and do it in the way that the firm needs it." (TF4)
	81	"[...] I for instance, am more the entrepreneurial type. I like starting things and I like it when it's new and exciting and also get bored

		quite easily, [...] I also prefer working with experts, because I don't have the patience to train people. My co-founder on the other hand, he's more the managerial type. He has more patience in that area and likes the process of training people, taking care of the organization on a more strategic level." (TF2)
	82	"Because I was always busy with the strategic side of things, we ended up moving much from one project-idea to the next. Because I always kept on seeing opportunities. And while we sometimes had fantastic ideas because of that, we often ended up not working any of them out until the point of true completion. This is also, why we missed some opportunities "business-wise", but technologically, we still built a lot and did a lot of different things." (TF5)
	83	"[...] mostly they use advisory boards that can guide them. Especially if they're unexperienced or they lack managerial background. [...] It's a crucial point for them because some of them are great tech-people, great entrepreneurs, but not necessarily great company managers. [...] not all of them want to become managers. But they don't always know that at the start. They find out as they go and with the guidance of their [advisory] boards." (EE6)
	84	"[...] you see that a lot, [...] that founders are being obliged to leave their positions as manager / CEO. [...] So, [...] it happens all the time in the start-up world, that investors say, it's done for you now as CEO, now that the company has to grow exponentially, you really need a born leader to step up the game, to take it to the next level." (EE1.2)
Strategic leadership (e.g., visioning, openness to change, communication, flexibility, decision-making, bridging)	85	"Vision, knowing of where you want to take the company, is of massive importance. Getting everyone on board with the vision, is also critical. This can be done through taking the time of strategically recapping the year and building a mutual vision." (TF7)
	86	"In order to grow successfully, the firm must contain effectiveness and proper conflict resolution, as well as represent an understanding culture." (TF4)
	87	"If you found a nice technical solution, that you personally really like, but you can still not communicate its relevance to the outside world (sell it to the customer), then you'll get nowhere. It's critical that a leader can communicate their vision clearly." (TF1)
	88	"The most important factor the founder should have, aside from passion, is a certain degree of emotional intelligence. Being able to read and anticipate people, [...] to trust [...] and hire the right people. But also, to retain people and being able to pick up signals in a timely manner from the team that surrounds you." (TF5)
Emotional intelligence (e.g., self-awareness, motivation, social skills)	89	"One of the reasons that start-up companies can't scale-up, is because they are led by an entrepreneur that doesn't contain the required competencies for managing a growing firm yet believes that he or she should still run the firm through its further development. If that person indeed does not want to see their strengths and weaknesses, this can end up being detrimental to the firm." (TF4)
	90	"The CEO needs to know whether he or she has the right skills and capabilities for leading their team through growth, and if not, they need to be able to make a right call to take on an actual professional manager or leader, that can take that responsibility instead of them." (TF3)
	91	"[...] Know your faults, act upon them and be ready to pay for the right advice [e.g., accountant, lawyer, HR, ...]." (TF8)
Resilience	92	"You need to be able to handle rejection and failure and require an optimistic mindset that won't get you demotivated" (TF1)
	93	"[About entrepreneurship and change in the firm] Key to all of this, is resilience. If you're not able to cope with rejection and with the

thought of potential failure, then you're in the wrong business."
(TF3)

Table 3 contains some illustrative quotes from our analysis supporting our analyzed findings.

* If the interview was not recorded, only actually annotated quotes were used. Descriptions of explanations can be found in the findings section.

Figure 1

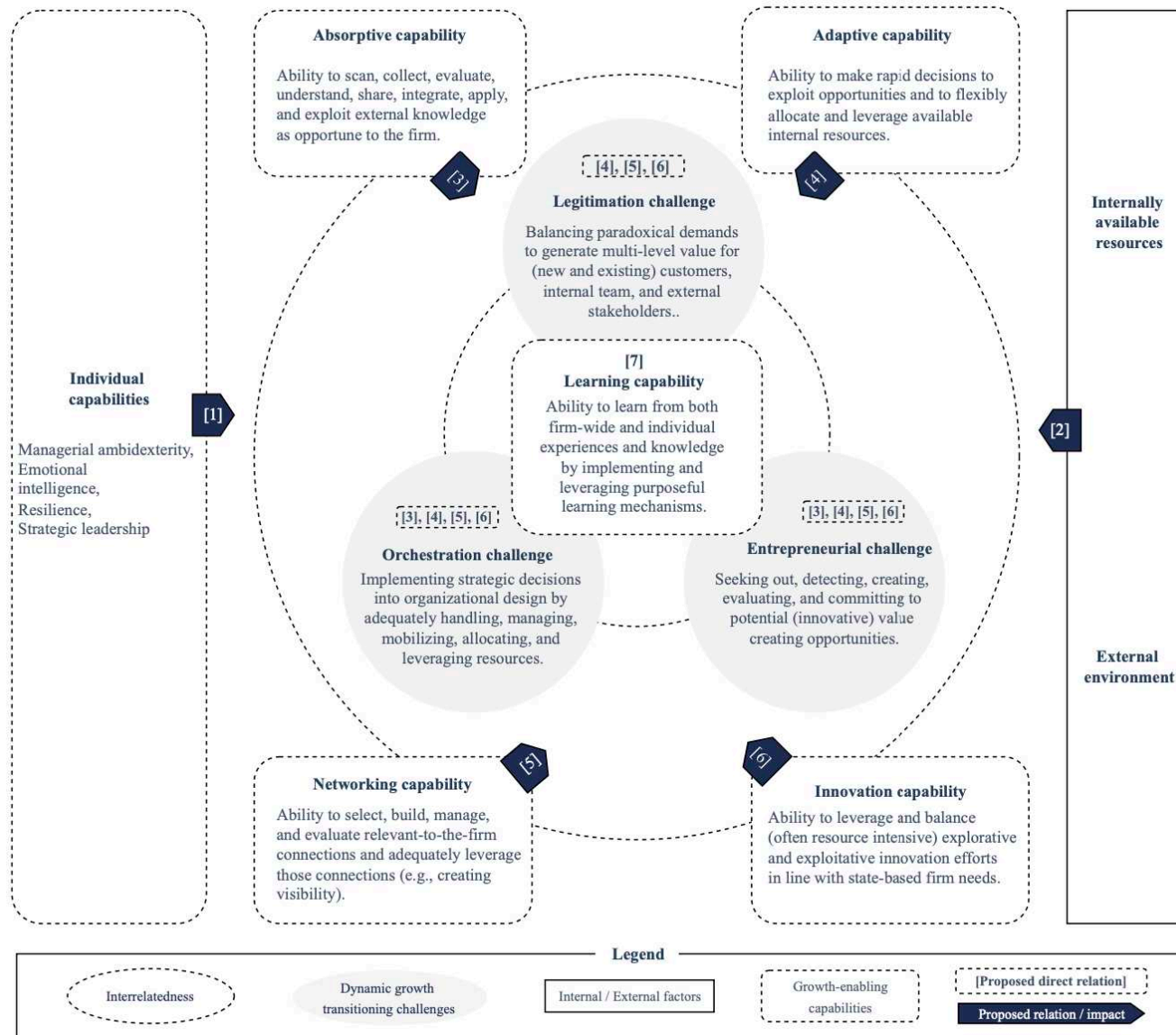


Figure 1 - Multilevel framework depicting the relation between dynamic growth transitioning challenges and growth-enabling capabilities in the context of YTBFs.

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