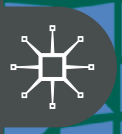

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Entrepreneurial Strategy

Starting, Managing, and Scaling New Ventures

Dean A. Shepherd
Holger Patzelt

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Dean would like to dedicate this book to his wife (Suzie) and children (Jack and Meg) who have displayed considerable resilience over the last year, to his mum (Leonie) and dad (John) who have always displayed resilience, and to his nephew (Henry) and niece (Olivia) who are still willing to talk to their uncle on FaceTime most weeks. But for the record, Oliva's assertion that I look like Humpty Dumpty are completely false.

Holger would like to dedicate this book to Silvia and Helen, for sparking his creativity, motivation, and endurance.

Preface

Founded in 2012, Kinexon is a Munich-based startup that develops and produces tracking devices for professional sports players, including those in the National Basketball Association and National Football League. Analysts initially used these devices for tracking players' movements to optimize training and improve television reporting. When the COVID-19 pandemic took off in early 2020, Kinexon's business model was severely hit by the shutdown of sports events and sports television broadcasts. However, the founders quickly analyzed the situation and identified an opportunity to apply the venture's core technology to track individuals' distances to prevent virus infections. Specifically, through interactions with potential customers and other stakeholders, the venture developed a wristband called Kinexon SafeZone, which measures the distance between individuals to prevent infections. Indeed, the founders realized that their technology is useful across many settings and thus developed a strategy for entering various sectors as diverse as manufacturing, public administration, and sports. As a result, Kinexon's founders were able to further scale the company's operations and continue its quick growth.

The Kinexon example unifies the topics that underlie the core of this book. This book is dedicated to different aspects of entrepreneurial strategy. We focus on explaining how entrepreneurs identify new business opportunities from environmental changes, how they engage communities of inquiry to develop these opportunities for the market, how they create new ventures, and how they manage and scale these new ventures

to ensure growth. To do so, we build directly on our recent studies (with coauthors) because the ideas in these studies have been tested and have passed the double-blind peer-review process. We believe (hope) that this book adds value over and above the published journal articles by bringing them together to provide a big picture of entrepreneurial strategy. We focus on our studies as the basis for these chapters because we feel freer to rely on them heavily and adapt where necessary (without upsetting the authors). We do not ignore other studies; relevant studies on new ventures are reviewed and cited. We acknowledge that we have not addressed all relevant topics nor provided all necessary details. Some oversights are due to our scholarly limitations, but some result from deliberate decisions about the scale, scope, and emphasis that we desired for this book.

Enough with the caveats and hedges and on to the topic of the book. This book is titled *Entrepreneurial Strategy: Starting, Managing, and Scaling New Ventures*. We focus on independent new ventures to distinguish this book's focus from the excellent research on corporate ventures. While some of the book's content likely applies to established organizations' new ventures, some may not. The differences between independent and corporate new ventures are sufficient to focus on independent new ventures. We used the word entrepreneurial in the title to emphasize the central role of potential opportunities (Shane & Venkataraman, 2020) and the goal of organizational growth (Brown et al., 2001). Finally, we use the terms starting, managing, and scaling in the title because these "ing"-word extensions highlight our emphasis on activities. Indeed, we focus on the activities of entrepreneurial strategy.

Hopefully, in explaining the key activities of entrepreneurial strategy, this book can help entrepreneurs find their way through this challenging process to create value for themselves and society. For entrepreneurship scholars, we hope this book offers a solid foundation in the literature from which to explore the associated phenomena and to create new knowledge published in outlets that impact how others think about the topics. Similarly for educators, we hope this book provides a body of knowledge to draw upon for lectures and discussions.

The rest of the book proceeds as follows:

Chapter 1: Attending to the External Environment to Identify Potential Opportunities

Building on a recent study (Shepherd et al., 2017), this chapter highlights the importance of noticingopportunities as an initial step toward new venture creation. Unsurprisingly, there has been considerable interest in the processes of allocating attention to notice potential opportunities arising from changes in the external environment. We know a great deal about the role of top-down (i.e., based on knowledge and experience) processes of allocating attention to the environment in forming opportunity beliefs worthy of entrepreneurial action. However, in this chapter, we illustrate how bottom-up processes, whereby environmental changes capture entrepreneurs' attention, shape opportunity identification. Building on the notion of guided attention, we detail an attention model of forming opportunity beliefs for entrepreneurial action that includes both top-down and bottom-up processes for allocating attention. This chapter explains how entrepreneurs can allocate their transient attention to identify potential opportunities from environmental changes. This chapter also describes how allocating sustained entrepreneurial attention influences belief formation about radical and incremental opportunities requiring entrepreneurial action.

Chapter 2: Co-constructing an Opportunity with a Community of Inquiry

Entrepreneurs can learn about potential opportunities through social interactions with communities of inquiry. However, how do entrepreneurs build such communities, and how do they engage community members over time to develop their potential opportunities? Building on a recent study of eight new ventures and their communities of inquiry over nine months (Shepherd et al., 2020), this chapter presents a social model of opportunity development. The chapter explains how entrepreneurial teams that progress well toward market launch consist of varied specialists who openly engage their communities of inquiry. This open engagement leads such teams to gather diverse information, generate multiple alternatives (technology and market), and test conjectures about their potential opportunities through disconfirmation. In contrast, unsuccessful entrepreneurial teams rely on focused engagement with their communities of inquiry. This focused engagement leads these

teams to gather specific information, generate a few related alternatives, and seek to confirm their opportunity conjectures. This chapter highlights new insights into entrepreneurial teams' engagement with communities of inquiry to explain opportunity development and, ultimately, new venture progress.

Chapter 3: A Lean Framework for Starting a New Venture

The lean startup framework is one of the most popular contributions in the practitioner-oriented entrepreneurship literature. This chapter builds on a recent paper (Shepherd & Gruber, 2020) to highlight new insights into how new ventures are started based on the lean startup framework. Specifically, we describe the origin of the lean startup framework and its five main building blocks—(1) identifying and evaluating market opportunities in startups, (2) designing business models, (3) engaging in validated learning (including customer development), (4) building minimum viable products, and (5) learning whether to persevere with or pivot from the current course of action. We organize these building blocks into a framework suggesting how considering the contextual characteristics of and the interdependencies between the building blocks can enrich our understanding of using the lean startup framework to start a new venture.

Chapter 4: Managing New Ventures

The creation of new ventures and growing them into well-established organizations is the key purpose of managing new ventures. This chapter explains the 10 most essential subtopics for managing new ventures (Shepherd et al., 2021): (1) lead founder, (2) founding team, (3) social relationships, (4) cognitions, (5) emergent organizing, (6) new venture strategy, (7) organizational emergence, (8) new venture legitimacy, (9) founder exit, and (10) entrepreneurial environment. This chapter ties these "managing" subtopics into the three major stages of the entrepreneurial process—co-creating, organizing, and performing. The framework provides a cohesive story of managing new ventures.

Chapter 5: Scaling New Ventures

Although scaling is a "hot topic" in the practitioner literature, it has mostly been ignored (at least explicitly) in the academic literature. Building on a recent editorial, this chapter highlights the importance of scaling for new venture growth. Scaling refers to spreading excellence within a venture as it grows (organically or through acquisition) from a new (and often small) organization to an established, large organization (Shepherd & Patzelt, 2020). In this chapter, we explore the drivers and consequences of scaling and explain how knowledge management facilitates scaling, how founder replacement impacts scaling, and how current scaling influences subsequent scaling.

Concluding Remarks

We close this book with concluding remarks on co-creating, scaling, and managing new ventures.

Notre Dame, USA — Dean A. Shepherd
Munich, Germany — Holger Patzelt

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References

Brown, T. E., Davidsson, P., & Wiklund, J. (2001). An operationalization of stevenson's conceptualization of entrepreneurship as opportunity-based firm behavior. *Strategic Management Journal, 22*(10), 953–968.

Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review, 25*(1), 217–226.

Shepherd, D. A., & Gruber, M. (2020). The lean startup framework: Closing the academic-practitioner divide. *Entrepreneurship Theory and Practice*. https://doi.org/10.1177/1042258719899415.

Shepherd, D. A., McMullen, J. S., & Ocasio, W. (2017). Is that an opportunity? An attention model of top managers' opportunity beliefs for strategic action. *Strategic Management Journal, 38*(3), 626–644.

Shepherd, D. A., & Patzelt, H. (2020). A call for research on the scaling of organizations and the scaling of social impact. *Entrepreneurship Theory and Practice*. https://doi.org/10.1177/1042258720950599.

Shepherd, D. A., Sattari, R., & Patzelt, H. (2020). A social model of opportunity development: Building and engaging communities of inquiry. *Journal of Business Venturing*, 106033.
Shepherd, D. A., Souitaris, V., & Gruber, M. (2021). Creating new ventures: A review and research agenda. *Journal of Management, 47*(1), 11–42.

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CHAPTER 1

Attending to the External Environment to Identify Potential Opportunities

Abstract Building on a recent study (Shepherd et al. in *Strategic Management Journal* 38:626–644, 2017), this chapter highlights the importance of noticing opportunities as an initial step toward new venture creation. Unsurprisingly, there has been considerable interest in the processes of allocating attention to notice potential opportunities arising from changes in the external environment. We know a great deal about the role of top-down (i.e., based on knowledge and experience) processes of allocating attention to the environment in forming opportunity beliefs worthy of entrepreneurial action. However, in this chapter, we illustrate how bottom-up processes, whereby environmental changes capture entrepreneurs' attention, shape opportunity identification. Building on the notion of guided attention, we detail an attention model of forming opportunity beliefs for entrepreneurial action that includes both top-down and bottom-up processes for allocating attention. This chapter explains how entrepreneurs can allocate their transient attention to identify potential opportunities from environmental changes. This chapter also describes how allocating sustained entrepreneurial attention influences belief formation about radical and incremental opportunities requiring entrepreneurial action.

This chapter is based on Shepherd et al. (2017). The assertions that we make in this chapter are justified, cited, and referenced in Shepherd et al. (2017).

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Cognition is critical to entrepreneurial action. Entrepreneurs' subjective representations of the environment help them identify potential opportunities, but entrepreneurs cannot form a complete understanding of the environment because of their cognitive limitations. As a result, entrepreneurs' attention determines which aspects of the environment they notice for interpretation and action. Because identifying and exploiting opportunities make up the essence of entrepreneurship, scholars have been interested in how entrepreneurs identify and interpret environmental signals as potential opportunities requiring entrepreneurial action. Opportunities can arise from changes in the environment and represent "courses of action that seek to derive benefits from these changes" (Grégoire et al., 2010, p. 415). Environmental changes that serve as a basis for identifying new opportunities include, for example, new technologies, emerging markets, societal trends (e.g., pro-environmental), and changes in legal regulations.

Existing entrepreneurial cognition studies have primarily focused on top-down processes for allocating attention to notice and interpret environmental-change signals of potential opportunities. Top-down processes rely on existing knowledge structures to direct entrepreneurial attention. Entrepreneurs use their knowledge structures to deductively interact with the environment to notice, interpret, and respond to changes in the environment that signal a potential opportunity. For example, entrepreneurs with knowledge about the pharmaceutical industry are likely to attend to environmental changes in this industry but less so to changes in other industries, such as the semiconductor or software industries. Therefore, a knowledge structure focuses attention on aspects of the environment that are expected to inform entrepreneurial action.

We know less about bottom-up processes of attention allocation. Bottom-up processes allow prominent aspects of environmental changes to draw attention. For example, a gist—a big-picture representation of the environment—can draw decision makers' attention to striking environmental changes (Shepherd et al., 2007). As another example, in disruptive-change contexts, individuals rely on Gestalt properties within the situation to perceive patterns and make sense of unfolding events. In contrast, relying on knowledge structures (i.e., top-down processing) directs attention to aspects that are expected to be important—these studies of bottom-up processes for allocating entrepreneurial attention act as a counterweight to studies on top-down processes. However, questions remain about how top-down and bottom-up processes work together to

allocate entrepreneurial attention to form opportunity beliefs. Therefore, it is crucial to understand how the allocation of entrepreneurial attention impacts entrepreneurs' ability to notice and discern different environmental changes to form beliefs about incremental and radical opportunities. Building on cognitive psychology theories, in this chapter, we describe an attentional model of opportunity beliefs for entrepreneurial action (see Shepherd et al., 2017) that offers three primary insights.

First, bottom-up processes for allocating attention are distinct from top-down processes, and to date, studies have primarily explored one or the other but not both concomitantly (Ocasio, 1997, 2011). This chapter describes the combination of top-down and bottom-up processes for allocating entrepreneurial attention and how the level of control that top-down processes exert on bottom-up processing influences opportunity-belief formation. By opportunity belief, we mean an entrepreneur's anticipation that exploiting a particular opportunity is both desirable and feasible.

Second, current knowledge of opportunity-belief formation is focused primarily on opportunities arising from incremental environmental changes (e.g., Benner & Tushman, 2003). Unfortunately, it is disruptive changes (rather than incremental changes) that people have substantial difficulty noticing (Tushman & O'Reilly, 1996). This difficulty in noticing disruptive changes is likely due to top-down processes for allocating attention to aspects of the environment that are expected to be important (Tripsas & Gavetti, 2000). Therefore, the difficulty in noticing disruptive changes to identify potential opportunities is at least partly related to processes for allocating entrepreneurial attention. In this chapter, we thus offer a deeper understanding of how entrepreneurs can notice disruptive environmental changes and identify and evaluate the radical opportunities that arise from such disruptions. Specifically, we explain how a greater reliance on the bottom-up allocation of transient attention helps entrepreneurs notice disruptive changes to identify potential opportunities and how sustained attention explains the formation of opportunity beliefs for entrepreneurial action.

Finally, the process underlying opportunity-belief formation involves two phases: the focal entrepreneur identifying what could be an opportunity for someone and then evaluating if the identified opportunity is personally worth acting on or not (McMullen & Shepherd, 2006). Entrepreneurship studies have generated considerable knowledge on the identification phase of opportunity-belief formation (e.g., Grégoire &

Shepherd, 2012) and the evaluation phase of opportunity-belief formation (Haynie et al., 2009) but not the link between the two. In this chapter, we explain how entrepreneurial cognition and the nature of environmental changes combine to influence opportunity-belief formation—that is, the identification and evaluation of potential opportunities desirable and feasible for entrepreneurial action.

Attending to the Environment to Form Opportunity Beliefs for Entrepreneurial Action

To explain the attention model of opportunity beliefs (Shepherd et al., 2017), we rely on research on the cognitive psychology of attention (e.g., Kahneman, 2003; Most et al., 2011). As illustrated in Fig. 1.1, attending to environmental changes for opportunity-belief formation comprises first allocating transient attention and then allocating sustained attention. For allocating transient attention, an entrepreneur's search strategy and job demands impact how they use top-down guidance of bottom-up processes for allocating entrepreneurial attention, which then impacts the entrepreneur's ability to notice incremental or disruptive environmental changes signaling potential opportunities. Allocating sustained attention begins with the identified potential opportunity (from the transient-attention phase). Depending on the entrepreneur's cognitive mode and immersion level, he or she believes that there is an incremental or radical opportunity worthy of entrepreneurial action.

Allocating Transient Attention to Identify a Potential Opportunity (for Someone)

Guided attention explains how top-down processes for allocating attention can work with bottom-up processes. Top-down processes can allocate attention to specific aspects of the environment that entrepreneurs expect to be important (based on the entrepreneurs' knowledge structures) but then allow bottom-up processes in which the prominence of environmental changes draws attention. Therefore, with guided attention, entrepreneurial attention is allocated to striking environmental changes *and* exhibits important properties as determined by entrepreneurs' knowledge structures. However, striking environmental changes that do not meet the importance threshold do not draw attention. Therefore,

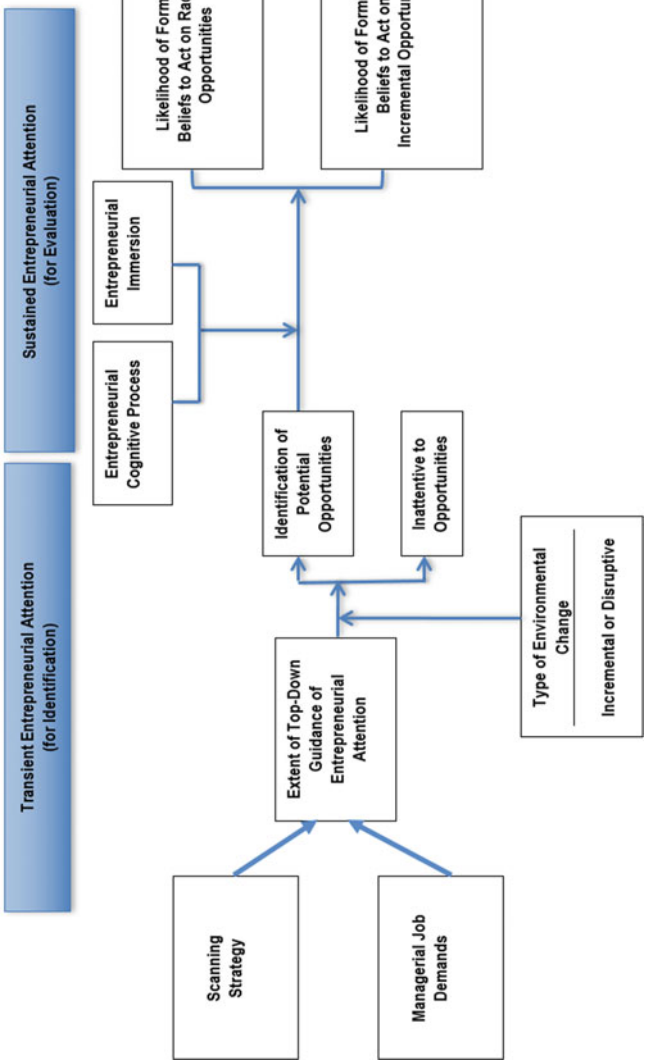

Fig. 1.1 An attention model of opportunity beliefs for entrepreneurial action (Adapted from Shepherd et al., 2017)

entrepreneurs can ready themselves to notice specific types of opportunities by setting the level of control that top-down processes have over bottom-up attention allocation.

Knowledge structures direct how top entrepreneurs deductively interact with the environment to notice, interpret, and respond to new stimuli. Although entrepreneurs tend to focus on just one environment-related knowledge structure at any given moment, entrepreneurs use numerous non-focal knowledge structures for cognitive processing, which they do not typically apply to the current environment. To the extent that these non-focal knowledge structures are "accessible" for bottom-up activation (i.e., have not been "tuned out" by top-down control), they enable entrepreneurs to be surprised and have their attention drawn to features of the environment that are not reflected in the focal knowledge structure.

As illustrated in Fig. 1.2, when entrepreneurs scan the environment, greater top-down guidance of entrepreneurial attention relies on a more

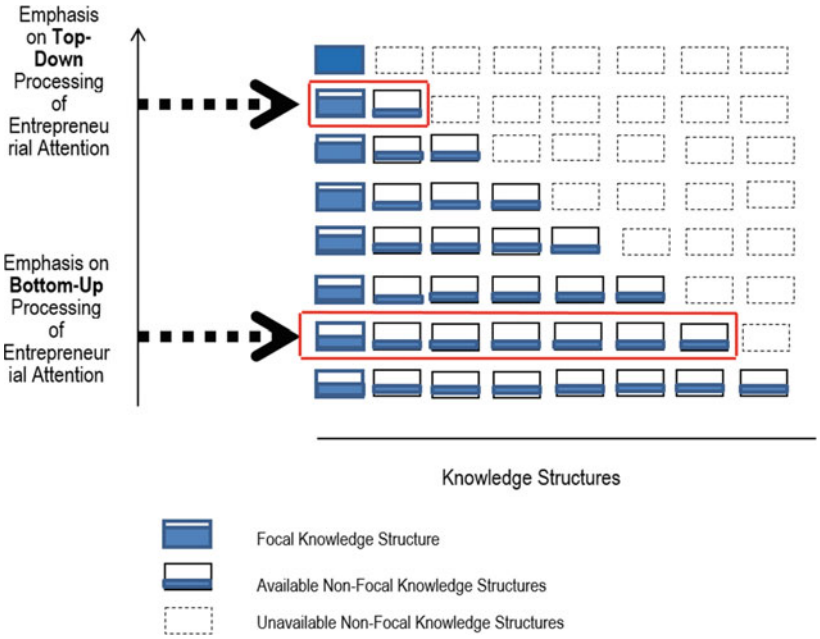

Fig. 1.2 Entrepreneurial attention and focal and non-focal knowledge structures

limited number of knowledge structures to direct attention to. For example, an entrepreneur may have his or her expert knowledge of an existing technology primarily direct his or her attention to how scientists and other researchers are improving this specific technology's performance in a given market. Less top-down guidance (i.e., more bottom-up processing) of attention relies less on a particular knowledge structure, which makes a larger set of alternate (non-focal) knowledge structures accessible to stimulation from environmental changes (although the focal knowledge structure leads the entrepreneur to consider such stimuli to be irrelevant). For example, the entrepreneur with knowledge of a particular technology may not allocate as much attention to the development of this technology for the given market but may instead allocate part of his or her attention to other potentially unrelated technologies or markets.

High Top-Down Guidance (Low Bottom-Up Processing) for Attending to the External Environment to Identify Potential Opportunities

Entrepreneurs' beliefs about the external environment drive top-down guidance of entrepreneurial attention. These beliefs about the external environment are based on learning from experience and are stored as knowledge structures. Top-down processes of allocating attention are highly effective for performing tasks efficiently, predictably, and reliably. For example, top-down decision making allocates attention to aspects of the external environment that entrepreneurs' knowledge and experience lead them to believe are likely to reveal potential opportunities. Given that attention is a limited resource, top-down processes also direct attention away from environmental aspects that entrepreneurs expect to be unimportant. Incremental changes to the environment—changes consistent with the current trajectories of technologies, consumers, competitors, and institutions—typically occur when and where entrepreneurs expect them to occur. Thus, entrepreneurs' allocation of attention to these aspects of the external environment is more transient when there is high top-down guidance in the allocation of entrepreneurial attention than low top-down guidance.

While high top-down guidance of entrepreneurial attention helps entrepreneurs notice incremental environmental changes to identify incremental potential opportunities, it also obstructs entrepreneurs from noticing unexpected changes in the external environment. Thus,

entrepreneurs are unlikely to identify potential opportunities from *disruptive changes* (i.e., changes involving new configurations of technologies, consumers, and competitors that generate new market categories and industries). Indeed, when people rely heavily on their focal knowledge structures, they are unlikely to attend to unexpected environmental changes, even striking environmental changes. For example, various experiments have revealed that when people are highly focused on performing a specific task, they are blind to unrelated information even when that information is highly prominent. Interestingly, when a task is considered less important, individuals are more likely to notice a prominent change in the environment (Neisser, 1976). It appears that when a *focal* task is less important, observers can "relax" top-down processes for allocating attention. This relaxation allows for the individual to engage more bottom-up processes to allocate transient attention to non-focal knowledge structures to notice and interpret unexpected environmental changes. In contrast, observers for whom a focal task is very important concentrate their attention on the focal knowledge structure relevant to the task, which starves non-focal knowledge structures of the transient attention needed to notice unexpected changes.

There is broad evidence in the business context indicating that the effects of high top-down guidance contribute to individuals' failure to notice disruptive changes. For example, Polaroid's managers used their past experience to focus attention on technology consumables rather than on hardware. As a result, they were blind to prominent changes in the imaging industry (Tripsas & Gavetti, 2000). Polaroid's managers attended to environmental aspects that they expected to be important (based on a continuation of current practices) but did not notice environmental changes that were inconsistent with their beliefs about the nature of the business. They relied too little on bottom-up processes that would allow their transient attention to be drawn to striking environmental changes through non-focal knowledge structures. Therefore, while high top-down guidance of attention helps entrepreneurs identify potential opportunities from *incremental* environmental changes, it obstructs entrepreneurs from identifying potential opportunities from *disruptive* environmental changes.

Low Top-Down Guidance (More Bottom-Up Processing) for Attending to the External Environment to Identify Potential Opportunities

In reducing the level of control of top-down processes for allocating attention, entrepreneurs rely more on bottom-up processes for making transient attention more accessible for non-focal knowledge structures. This availability of transient attention to be drawn to non-focal knowledge structures enables entrepreneurs to be surprised by prominent environmental changes and allocate attention to them. The most prominent environmental changes are the environmental aspects most likely to capture attention when there is lower top-down guidance of (or control over) bottom-up processes for allocating entrepreneurial attention. Therefore, greater reliance on bottom-up processes (less top-down guidance) enables entrepreneurial attention to be drawn to prominent unexpected environmental changes to identify potential opportunities. This greater reliance on bottom-up processes of allocating attention helps entrepreneurs identify potential opportunities for disruptive environmental changes.

However, because low top-down guidance means that entrepreneurs must approach the external environment with few preconceived expectations, we note that attention might be drawn to environmental changes that have little relevance to possible markets or technologies. Indeed, having their attention drawn to prominent environmental changes may lead individuals in the wrong direction and interfere with their cognition and decision-making processes. Furthermore, greater reliance on bottom-up processes for allocating attention reduces reliance on past experience, so entrepreneurs may "reinvent the wheel," or make the same mistakes again and inefficiently apply action repertoires to potential opportunities.

Therefore, the extent of top-down guidance of attention impacts entrepreneurs' identification of potential opportunities from different environmental changes. Specifically, greater top-down guidance of attention helps entrepreneurs identify potential opportunities from incremental environmental changes but potentially obstructs them from identifying potential opportunities from disruptive environmental changes. In contrast, greater reliance on bottom-up processes for allocating attention helps entrepreneurs identify potential opportunities from disruptive environmental changes but obstructs them from identifying potential opportunities from incremental environmental changes.

Search, Guided Attention, and the Identification of Potential Opportunities

Entrepreneurs' *searchstrategies* determine where they focus their attention to gain new information and knowledge. Search strategies differ based on the scope of the terrain covered to reveal potential information. *Narrow-scope search* involves covering local terrain for new information—that is, searching markets and technologies that are related, familiar, or similar to entrepreneurs' previous markets and technologies. In contrast, *broad-scope search* involves covering distant terrain for information—that is, searching markets and technologies that are unrelated, unfamiliar, or dissimilar to entrepreneurs' previous markets and technologies.

A narrow-scope search strategy likely triggers high top-down guidance of allocating entrepreneurial attention. That is, searching the neighborhood of operations in which they have prior experience, entrepreneurs will use this familiarity to engage their experience in this terrain—namely, to engage their knowledge structures for allocating attention. With top-down processes strongly allocating attention, entrepreneurs are more likely to identify potential opportunities from *incremental* environmental changes and are less likely to identify potential opportunities from *disruptive* environmental changes.

In contrast, *broad-scope search* refers to investing effort to seek information and knowledge that is unrelated to one's current knowledge base. This conscious effort to move away from one's most recent experiences relaxes top-down guidance and thereby increases the use of bottom-up processes for allocating entrepreneurial attention. Thus, distant search provides greater exposure to new information, such as disruptive environmental changes. This greater reliance on more bottom-up processes enables entrepreneurs' attention to be drawn to these changes to identify radical opportunities from them.

Therefore, the level of top-down guidance for allocating entrepreneurial attention mediates the relationship between an entrepreneur's search strategy and his or her ability to identify potential opportunities. Specifically, the more local the search strategy, the greater the top-down guidance for allocating entrepreneurial attention. Local search strategies help entrepreneurs identify potential opportunities from incremental environmental changes but obstruct them from identifying potential opportunities from disruptive changes. In contrast, more distant search strategies increase the bottom-up allocation of attention, which

helps entrepreneurs identify potential opportunities from disruptive changes but obstructs them from identifying potential opportunities from incremental changes.

Entrepreneurs' Job Demands, Guided Attention, and the Identification of Potential Opportunities

Entrepreneurs face numerous challenges in performing entrepreneurial tasks. Indeed, entrepreneurs often need to be jacks-of-all-trades because they need to perform many varied tasks, particularly in the early stage of venture development. For example, these tasks include seeking finance, acquiring new talent, identifying and building relationships with new customers and suppliers, developing new technologies and products, setting up an organizational structure, coordinating with the rest of the entrepreneurial team, etc.

These tasks can be even more demanding in some external environments. For example, hostile environments create many challenges that require entrepreneurial attention. Facing a hostile external environment, entrepreneurs may have to develop creative ways to conserve current resources, allocate attention externally to acquire information to appraise the nature of the focal threats, and form new strategies to address those threats (see Miller & Friesen, 1983). Similarly, more complex environments pose considerable challenges for entrepreneurs because they need to consider many factors and possible contingencies between those factors to gain an understanding of the environment. Furthermore, entrepreneurs of new ventures face the liabilities of newness and must therefore try to convince potential stakeholders to support their ventures despite these (potential) new ventures lacking legitimacy. Finally, the more dynamic the external environment, the more often entrepreneurs must change and adapt their tasks and the attention they allocate to different (aspects of) tasks. These challenging external environmental conditions place greater information-processing demands on entrepreneurs.

Facing more task-related demands produces greater strain on entrepreneurs' cognitive and attentional limitations. Therefore, they may turn to the efficiency provided by relying heavily on top-down processes for allocating attention. In contrast, entrepreneurs who face fewer job demands are likely to rely less heavily on top-down processes to allocate entrepreneurial attention. In other words, although entrepreneurs with

few job demands still depend on a focal knowledge structure, more transient attention is accessible for non-focal knowledge structures for the entrepreneur to notice and interpret unexpected environmental changes.

Therefore, Shepherd et al. (2017) suggested that the level of top-down guidance for allocating attention mediates the relationship between entrepreneurs' job demands and their ability to identify potential opportunities. Specifically, job demands increase top-down guidance of entrepreneurial attention, which helps entrepreneurs identify potential opportunities from incremental environmental changes but obstructs them from identifying potential opportunities from disruptive environmental changes. In contrast, lower job demands increase bottom-up processes for allocating entrepreneurial attention, which helps entrepreneurs identify potential opportunities from disruptive environmental changes but obstructs them from identifying potential opportunities from incremental changes.

Although attending to environmental changes (via transient attention) may help entrepreneurs identify potential opportunities, this identification is necessary but not sufficient for entrepreneurial action. Entrepreneurial action requires sustained attention to evaluate whether an opportunity for someone (third-person opportunity) represents an opportunity for the focal entrepreneur (i.e., an opportunity belief) that is worthy of entrepreneurial action (first-person opportunity). We now explain the allocation of sustained attention necessary for entrepreneurial action.

Sustained Entrepreneurial Attention for Acting on an Opportunity Belief

We can classify opportunities in terms of their proximity to current technological and market trajectories. On the one hand, *incremental opportunities* often arise from small changes in the technological trajectory and/or existing customer needs. The exploitation of such incremental opportunities typically builds on existing knowledge. For example, over the last decades, large automotive manufacturers have improved cars' combustion engines to consume less and less fuel. On the other hand, *radical opportunities* often arise from substantial changes to the technological trajectory or the creation of new markets. The exploitation of radical opportunities typically requires a departure from existing knowledge. For example, introducing electrical engines in cars requires

automotive manufacturers to build up their knowledge of battery production and new software development so they can connect all the electronic components of electric cars. Disruptive environmental changes (e.g., legal restrictions on carbon dioxide emissions for new cars) often provide the basis for the departures required for identifying radical opportunities. After identifying a potential opportunity (from an incremental or disruptive environmental change), an entrepreneur must evaluate the desirability and feasibility of this opportunity for him- or herself before forming an opportunity belief that requires entrepreneurial action.

As shown in Fig. 1.3, Shepherd et al. (2017) combined immersion and cognitive processes to explain how entrepreneurial attention forms opportunity beliefs for entrepreneurial action. *Immersion* is mindful engagement with the situation or task at hand. Being immersed in a task requires a significant amount of an individual's emotional, cognitive, and physical resources. There are two generic *cognitive processes*—intuition and deliberate reasoning. *Intuition* involves thoughts and feelings that are generated quickly and with little (if any) conscious reflection. Intuition allows an individual to make relatively automatic, rapid judgments. In contrast, *deliberate reasoning* is more likely to be consciously enacted and controlled and is thus typically more effortful and slower than intuition. This form of cognitive processing is relatively flexible and may be

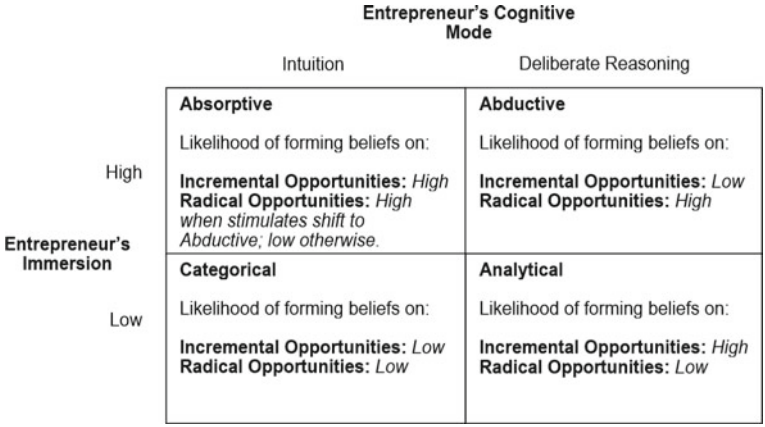

Fig. 1.3 Entrepreneurs' cognitive modes, immersion, and opportunity beliefs for entrepreneurial action (Adapted from Shepherd et al., 2017)

governed by rules. Combining immersion and cognitive processes leads to four different modes of discernment: (1) abductive, which involves high immersion and deliberate reasoning; (2) absorptive, which involves high immersion and intuition; (3) analytical, which involves low immersion and deliberate reasoning; and (4) heuristic, which involves low immersion and intuition (Shepherd et al., 2017). Each mode of *entrepreneurial discernment* is a means of allocating sustained attention to grasp and comprehend aspects of an *identified* potential opportunity to evaluate it to form an opportunity belief that informs entrepreneurial action.

Sustained Attention for Abductive Discernment and Opportunity-Belief Formation

Abduction refers to the creative construction of meaning (i.e., hypotheses) to explain surprising anomalies while experiencing a situation. Specifically, inquiry begins by engaging the world, and immersion facilitates this engagement with the world. Indeed, when immersed in tasks, entrepreneurs engage with the world, and the world has a way of speaking back. As entrepreneurs immerse themselves in entrepreneurial tasks, they find their way by applying their knowledge structures to understand their experiences. While using knowledge structures can help entrepreneurs make sense of their experiences while immersed in the environment, these knowledge structures can also force new experiences to conform to what is familiar, so entrepreneurs thus run the risk of failing to notice novel differences between the environment and their knowledge structures based on their interpretations of those new experiences. However, some anomalies are too difficult to "force fit" into existing knowledge structures. These anomalies that poke out of the nets of individuals' knowledge structures are breakdowns. Breakdowns involve anomalies that are made conspicuous (i.e., broken, absent, or obstructive) when individuals are immersed and engaged in activities with the current situation. Therefore, taking action while immersed in an activity or a situation can be a source of new information and understanding for entrepreneurs.

An entrepreneur may experience the identification of a potential opportunity as a surprising finding that requires further exploration to determine whether he or she should commit to creating a new venture to exploit the opportunity or not. Indeed, experiencing something as surprising triggers a reconsideration and revision of one's knowledge structures to understand the current situation. Experiencing such

a surprise also generates a sense of uneasiness and unsettledness felt in the body (Peirce, 1958). This irritation triggers the allocation of entrepreneurial attention to test a hypothesis about the fit between the potential opportunity and the focal entrepreneur's knowledge (e.g., skills, experience, abilities, and so on) and motivations (e.g., aspirations, goals, and so on). Compared to the other modes, abduction may constitute a relatively slow march from a guess to a fully developed opportunity (see Chapter 2). However, *any guess will do* for abduction to start the inquiry process; it frees entrepreneurs from their current expectations as they formulate opportunity conjectures and allocate attention based on those conjectures. This allocation of attention based on the freedom to explore unconventional potential opportunities enables entrepreneurs to allocate sufficient sustained attention to evaluate (and refine) potential radical opportunities.

However, forming a belief that one should act on a radical opportunity achieved through abduction does not provide the sort of focused attention necessary for evaluating an incremental opportunity. Indeed, abduction can be a highly inefficient process of exploration. This inefficiency is particularly problematic when an entrepreneur evaluates information that is not highly novel, such as with incremental opportunities. This inefficiency translates into slowness to grasp incremental potential opportunities, which more efficient entrepreneurs are able to grasp. In such cases, the window of opportunity is closed to entrepreneurs before they are willing and able to act.

Therefore, entrepreneurs using abductive discernment are likely to form the belief that an identified radical opportunity should be acted upon. In contrast, entrepreneurs using abductive discernment are unlikely to form the belief that an identified incremental opportunity should be acted upon.

Sustained Attention for Analytical Discernment and Opportunity-Belief Formation

Analytical discernment involves propositional statements (i.e., "if, then" statements) about the relationship between an input and an output for an individual's situation. These propositional statements help sustain entrepreneurial attention on potential incremental opportunities that fit entrepreneurs' knowledge and motivations. To make these propositional statements, entrepreneurs need to categorize potential opportunities.

Categorizing a potential opportunity imposes meaning on it based on the class of known opportunities to which it is now a member. By assigning meaning to potential opportunities, entrepreneurs' categorization of potential opportunities enables them to prioritize potential opportunities (and problems and other issues) to determine which potential opportunities require further attention and which do not.

Therefore, sustained attention for deliberate reasoning about an identified potential incremental opportunity can lead an entrepreneur to form the belief that it represents an opportunity for him or her to create a venture with a competitive advantage. Indeed, entrepreneurs sometimes use explicit rules that guide entrepreneurial attention toward specific identified potential opportunities and ignore others. For example, entrepreneurs may only focus on opportunities that are within their geographic home regions because they do not want to move or spend much time travelling, or they may set boundary conditions to accommodate their family situation (e.g., particular working hours, time of absence, minimal financial income). Alternatively, some entrepreneurs determine the maximum amount of effort and money they are willing to put at risk to pursue an opportunity. For example, when starting Virgin Airlines, entrepreneur Richard Branson set himself a limit of one year to determine whether he could transform his imagined concept of running an airline into a profitable business.

Entrepreneurs' knowledge structures inform their deliberate reasoning. Sustained entrepreneurial attention is focused on potential opportunities consistent with entrepreneurs' knowledge and motivations (i.e., incremental opportunities). This focus provides little scope to sustain entrepreneurial attention on non-local aspects of potential opportunities, thereby obstructing beliefs for radical opportunities. When deliberate reasoning is combined with low immersion in the task and environment, entrepreneurs find it difficult to label and interpret potential radical opportunities and are thus unlikely to exploit such opportunities.

Therefore, entrepreneurs using analytical discernment are likely to form the belief that an identified incremental opportunity should be acted upon. In contrast, entrepreneurs using analytical discernment are unlikely to form the belief that an identified potential radical opportunity should be acted upon.

Sustained Attention for Categorical Discernment and Opportunity-Belief Formation

Evaluating potential opportunities from the categorical-discernment mode is typically performed at an unconscious level. *Categorical discernment* refers to the grouping of objects, people, and situations and all the information that the focal individual associates with each of the categories (Macrae & Bodenhausen, 2000). Entrepreneurs use categories to evaluate the environment. Entrepreneurs' categories may include, for example, different (types of) industries, technologies, markets, and so on. Using categorical discernment, entrepreneurs' cognitive processing proceeds effortlessly to match problems with solutions. Although this assessment is quick, it can effectively match the current context with domain-specific knowledge.

By definition, incremental opportunities are those opportunities that represent changes (albeit small changes) in current technological or market trajectories. Still, entrepreneurs may categorize these changes as similar to a context stored in their knowledge structures despite differences. Therefore, when using categorical discernment, an entrepreneur is likely to distort novel, ambiguous signals such that they are consistent with the prototypical attributes of his or her environment category (i.e., force fit his or her perception to fit with the categorization), ignore information about the current situation that is inconsistent with the categorization, or discount inconsistent information by attributing it to unusual situational conditions. Indeed, people tend to engage a range of cognitive mechanisms to maintain the categorizations stored in their knowledge structures and are generally reluctant to update their categories. Indeed, categories become crystalized, making reclassifications of the external environment less likely. For example, one study found that individuals relied on an industry's old categories to attempt to navigate a new environment (Reger & Palmer, 1996). The study also found that even though the new environment was highly turbulent, the individuals' categorizations were highly resistant to updating. Overall, environmental changes appear to have a minimal immediate impact on entrepreneurs' current decisions and actions when they allocate sustained attention using categorical discernment.

With categorical discernment, potential radical opportunities are also unlikely to be allocated the sustained attention necessary for opportunity-belief formation. A radical opportunity is outside the parameters of the

environment's normal trajectory. Therefore, it is difficult to connect a radical potential opportunity to existing categories, so such opportunities are not easily connected to the repertoire of responses. Even experts have difficulty at this task. Experts can become cognitively entrenched, limiting their ability to process radical ideas. Therefore, when using categorical discernment for radical opportunities, an entrepreneur likely either applies a triggered category even though it does not match the focal potential opportunity or "explains away" the potential opportunity.

Therefore, entrepreneurs using categorical discernment are unlikely to form the belief that an identified potential opportunity (incremental or radical) should be acted upon. To illustrate this proposition, consider the classical industry categories of "automotive" and "software." Adhering to this categorization, managers of classical car manufacturers decided against building cars with software at the core of their technologies. Telsa, on the other hand, has realized the opportunity to develop the next generation of electric vehicles by moving beyond this categorization.

Sustained Attention for Absorptive Discernment and Opportunity-Belief Formation

Rapid unconscious responses to potential opportunities can also occur while individuals are deeply immersed in the environment. Heidegger (1962) referred to this immersion as "being in the world" in that individuals are absorbed in their current activities. Absorption in the environment facilitates adjustments to incremental changes in that environment. While absorbed in activities, entrepreneurs engage the environment, and the environment has a way of talking back. This backtalk does not involve deliberate reasoning. Rather, when entrepreneurs are absorbed in activities and receive backtalk, the environment is gradually disclosed to them. Entrepreneurs can learn and master this skill of thinking on their feet.

Absorption refers to an immediate response to one's environment that does not involve deliberate cognitive processing, enabling an individual to move forward by flexibly responding to changes in the situation he or she faces. These incremental adjustments occur in the moment while the individual is highly immersed in the focal activity. By incremental adjustments, we mean adjustments made in response to unsurprising changes congruent with past actions and experiences. Although some sufficiently minor changes may momentarily startle entrepreneurs, entrepreneurs tend to quickly shift to new forms of action to cope with

such changes. Entrepreneurs are likely to respond swiftly to potential incremental opportunities arising from their current activities. Therefore, through *absorptive discernment*, entrepreneurs can immediately (and unconsciously) respond to backtalk from their interactions with the environment and use their readily available tools to exploit the potential incremental opportunities they come across.

In contrast, for more surprising changes encountered while immersed in an activity—that is, breakdowns that interrupt the flow of an ongoing activity—entrepreneurs are surprised out of absorption into a more deliberate-reasoning mode of discernment (abductive or analytical, as described above). For example, an entrepreneur may develop a software solution for clients in the travel industry. As long as he or she is deeply immersed in this task, the entrepreneur is unlikely to notice that the software would also be useful for solving logistics problems in manufacturing. Once an external shock (e.g., COVID-19) hits the travel industry, the entrepreneur may allocate attention to alternative opportunities for developing and using the software, including in the manufacturing sector. Therefore, when relying on absorptive discernment, entrepreneurs are unlikely to allocate sustained attention to potential opportunities that do not interrupt their ongoing entrepreneurial activities—namely, those potential opportunities that interrupt entrepreneurial activities shift discernment to a deliberate mode (i.e., abductive or analytical). If the shift in sustained attention is to abductive discernment, then an entrepreneur is likely to form a belief that there is a radical opportunity worthy of entrepreneurial action.

Therefore, entrepreneurs using absorptive discernment are likely to form the belief that an identified incremental opportunity should be acted upon. In contrast, entrepreneurs using absorptive discernment are unlikely to form the belief that an identified potential radical opportunity should be acted upon unless there is a shift to the analytical-discernment mode.

An Attention Model of Opportunity-Belief Formation for Entrepreneurial Action

This chapter explained how the allocation of entrepreneurial attention influences the identification and evaluation of potential opportunities and how attentional processes differ for incremental as opposed to radical

opportunities. To address these questions, we employed an information-processing perspective to build a model about whether entrepreneurs form beliefs to act on radical opportunities or incremental opportunities. Building on the literatures on cognition and the psychology of attention, we described an attentional model of opportunity beliefs for entrepreneurial action (see Shepherd et al., 2017).

In describing this model, we distinguished between a transient phase and a sustained phase of attention allocation. In the transient-attention phase, entrepreneurs' knowledge structures impact the extent to which they notice incremental or disruptive environmental changes. Noticing an environmental change (or being blind to it) depends on the nature of the environmental change (incremental or disruptive) and the extent to which the focal entrepreneur relies on top-down guidance of bottom-up processes to allocate transient attention. The top-down guidance comes from entrepreneurs' knowledge structures. The extent of top-down guidance depends on entrepreneurs' job demands and search strategies (local or distant). This phase of allocating transient attention helps explain why (1) some entrepreneurs notice potential opportunities from incremental environmental changes but are blind to potential opportunities from disruptive environmental changes and (2) why some entrepreneurs notice potential opportunities from disruptive environmental changes but are blind to potential opportunities from incremental environmental changes.

Once an entrepreneur notices a potential opportunity from an incremental or disruptive environmental change, the entrepreneur enters the sustained-attention phase to discern whether he or she believes this identified potential opportunity for someone is worthy of personal entrepreneurial action. This evaluation of a potential opportunity depends on which discernment mode the entrepreneur uses for the evaluation process. The discernment mode ultimately used to evaluate an identified potential opportunity depends on both the extent to which the entrepreneur is immersed in his or her environment and his or her reliance on intuition or deliberate reasoning for information processing. Combining these dimensions produces four discernment modes that impact the likelihood that entrepreneurs will form a belief that there is an incremental or radical opportunity worthy of their entrepreneurial action. We believe that this model (Shepherd et al., 2017) provides at least three important insights.

First, the attentional model distinguishes between different types of opportunity beliefs, noting that the process for forming incremental

opportunity beliefs differs from that for forming radical opportunity beliefs. Although previous studies have explained how individuals notice incremental changes and subsequently recognize incremental opportunities from those changes, we focused on recognizing disruptive changes that are difficult to notice (Tushman & O'Reilly, 1996). Indeed, entrepreneurs are often blind to disruptive environmental changes, so they miss the chance to act on the corresponding radical opportunities. By describing entrepreneurial attention allocation and the conditions under which entrepreneurs notice disruptive as well as incremental changes, the attentional model is capable of explaining how entrepreneurs form *both* incremental and radical opportunity beliefs for entrepreneurial action based on their use of different modes of discernment.

Second, in this chapter, we highlighted four discernment modes that entrepreneurs can employ in forming opportunity beliefs for entrepreneurial action. The cognition literature has typically focused on either the cognitive-processing mode (e.g., Dutton, 1993) or the extent of immersion (Tsoukas & Chia, 2002). Furthermore, previous entrepreneurship studies have focused on the identification of opportunities in general or on one type of opportunity belief or the other (e.g., Bingham & Eisenhardt, 2011). In this chapter, we compared these discernment modes in terms of the likelihood of forming an opportunity belief about a potential incremental opportunity and the likelihood of forming an opportunity belief about a potential radical opportunity.

Further, this chapter highlighted the notion of transient attention from the psychology of attention and how it complements entrepreneurial cognition research on the effects of sustained attention (e.g., Bogner & Barr, 2000). Without transient attention enabling entrepreneurs to notice environmental changes to identify potential opportunities, the entrepreneur's sustained attention of discernment modes has little to focus on. We explained how the level of top-down guidance of bottom-up processes for allocating entrepreneurs' transient attention influences entrepreneurs' ability to notice environmental changes. We described several antecedents likely to influence the level of top-down guidance of bottom-up processes for allocating entrepreneurial attention. By explaining how top-down and bottom-up processes are combined, this chapter described how entrepreneurs can identify different types of potential opportunities from environmental changes. Failing to consider the combination of top-down and bottom-up processes for allocating entrepreneurial attention limits understanding of how entrepreneurs can

overcome constraints (cognitive and environmental) to identifying potential opportunities and form opportunity beliefs for their entrepreneurial action.

Finally, the attention model of opportunity-belief formation for entrepreneurial action (Shepherd et al., 2017) explicitly acknowledges two phases of attention allocation: (1) the transient-attention phase, which involves identifying a potential opportunity for someone, and (2) the sustained-attention phase, which involves evaluating whether the identified potential opportunity is worthy of one's personal entrepreneurial action. Indeed, identifying an environmental change that signals a potential opportunity will not yield an actual opportunity to believe in if the focal entrepreneur does not sustain enough attention to evaluate it.

Conclusion

Noticing a potential opportunity from an incremental or disruptive environmental change to form an incremental or radical opportunity belief is necessary for entrepreneurial action and challenging because entrepreneurs, as all people, have limited attentional and cognitive resources. All entrepreneurs experience a world of perpetually fluctuating data, some of which is relevant to them. However, entrepreneurs' challenges go well beyond the process of interpreting what these data mean. Limits on entrepreneurial attention can almost ensure that certain types of data will go completely unnoticed, preventing entrepreneurs from evaluating them as potential opportunities for entrepreneurial action. This chapter explained a model (Shepherd et al., 2017) that attempts to allocate some scholarly attention away from the almost exclusive focus on entrepreneurs' top-down attention-allocation processes and sustained attention toward entrepreneurs' bottom-up processes and transient attention. In a nutshell, this model suggests the following:

- Entrepreneurs with high top-down guidance of attention are more likely to notice incremental environmental changes to identify potential opportunities, while entrepreneurs with low top-down guidance of attention (high bottom-up processing) are more likely to notice disruptive environmental changes to identify potential opportunities.
- High job demands increase the top-down guidance of entrepreneurial attention.

- Entrepreneurs using abductive discernment are more likely to form the belief that an identified potential radical opportunity should be acted upon but are less likely to form the belief that an identified potential incremental opportunity should be acted upon.
- Entrepreneurs using analytical discernment are more likely to form the belief that an identified incremental opportunity should be acted upon but are less likely to form the belief that an identified potential radical opportunity should be acted upon.
- Entrepreneurs using categorical discernment are less likely to form the belief that an identified potential opportunity (incremental or radical) should be acted upon.
- Entrepreneurs using absorptive discernment are more likely to form the belief that an identified incremental opportunity should be acted upon but are less likely to form the belief that an identified potential radical opportunity should be acted upon unless there is a shift to the analytical-discernment mode.

References

Benner, M. J., & Tushman, M. L. (2003). Exploitation, exploration, and process management: The productivity dilemma revisited. *Academy of Management Review, 28*(2), 238–256.

Bingham, C. B., & Eisenhardt, K. M. (2011). Rational heuristics: The 'simple rules' that strategists learn from process experience. *Strategic Management Journal, 32*(13), 1437–1464.

Bogner, W. C., & Barr, P. S. (2000). Making sense in hypercompetitive environments: A cognitive explanation for the persistence of high velocity competition. *Organization Science, 11*(2), 212–226.

Dutton, J. E. (1993). Interpretations on automatic: A different view of strategic issue diagnosis. *Journal of Management Studies, 30*(3), 339–357.

Grégoire, D. A., Barr, P. S., & Shepherd, D. A. (2010). Cognitive processes of opportunity recognition: The role of structural alignment. *Organization Science, 21*(2), 413–431.

Grégoire, D. A., & Shepherd, D. A. (2012). Technology-market combinations and the identification of entrepreneurial opportunities: An investigation of the opportunity-individual nexus. *Academy of Management Journal, 55*(4), 753–785.

Haynie, J. M., Shepherd, D. A., & McMullen, J. S. (2009). An opportunity for me? The role of resources in opportunity evaluation decisions. *Journal of Management Studies, 46*(3), 337–361.

Heidegger, M. (1962). *Being and time*. Harper & Row.

Kahneman, D. (2003). A perspective on judgment and choice: Mapping bounded rationality. *American Psychologist, 58*(9), 697–720.

Macrae, C. N., & Bodenhausen, G. V. (2000). Social cognition: Thinking categorically about others. *Annual Review of Psychology, 51*(1), 93–120.

McMullen, J. S., & Shepherd, D. A. (2006). Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur. *Academy of Management Review, 31*(1), 132–152.

Miller, D., & Friesen, P. H. (1983). Strategy-making and environment: The third link. *Strategic Management Journal, 4*(3), 221–235.

Most, S. B., Kuvaldina, M., Dobson, K., & Kennedy, B. L. (2011). Prior perceptual decisions drive subsequent perceptual experience: Negative priming increases inattentional blindness. *Journal of Vision, 11*(11), 159–159.

Neisser, U. (1976). *Cognition and reality: Principles and implications of cognitive psychology*. WH Freeman/Times Books/Henry Holt & Co.

Ocasio, W. (1997). Towards an attention-based view of the firm. *Strategic Management Journal, 18*, 187–206.

Ocasio, W. (2011). Attention to attention. *Organization Science, 22*(5), 1286–1296.

Peirce, C. S. (1958). *The collected papers of Charles Sanders Peirce*. Harvard University Press.

Reger, R. K., & Palmer, T. B. (1996). Managerial categorization of competitors: Using old maps to navigate new environments. *Organization Science, 7*(1), 22–39.

Shepherd, D. A., McMullen, J. S., & Jennings, P. D. (2007). The formation of opportunity beliefs: Overcoming ignorance and reducing doubt. *Strategic Entrepreneurship Journal, 1*(1/2), 75–95.

Shepherd, D. A., McMullen, J. S., & Ocasio, W. (2017). Is that an opportunity? An attention model of top managers' opportunity beliefs for strategic action. *Strategic Management Journal, 38*(3), 626–644.

Tripsas, M., & Gavetti, G. (2000). Capabilities, cognition, and inertia: Evidence from digital imaging. *Strategic Management Journal, 21*(10/11), 1147–1161.

Tsoukas, H., & Chia, R. (2002). On organizational becoming: Rethinking organizational change. *Organization Science, 13*(5), 567–582.

Tushman, M., & O'Reilly, C. (1996). Ambidextrous organizations: Managing evolutionary and revolutionary change. *California Management Review, 38*, 8–30.

CHAPTER 2

Co-constructing an Opportunity with a Community of Inquiry

Abstract Entrepreneurs can learn about potential opportunities through social interactions with communities of inquiry. However, how do entrepreneurs build such communities, and how do they engage community members over time to develop their potential opportunities? Building on a recent study of eight new ventures and their communities of inquiry over nine months (Shepherd et al. in *Journal of Business Venturing*, 106033), this chapter presents a social model of opportunity development. The chapter explains how entrepreneurial teams that progress well toward market launch consist of varied specialists who openly engage their communities of inquiry. This open engagement leads such teams to gather diverse information, generate multiple alternatives (technology and market), and test conjectures about their potential opportunities through disconfirmation. In contrast, unsuccessful entrepreneurial teams rely on focused engagement with their communities of inquiry. This focused engagement leads these teams to gather specific information, generate a few related alternatives, and seek to confirm their opportunity conjectures. This chapter highlights new insights into entrepreneurial teams' engagement with communities of inquiry to explain opportunity development and, ultimately, new venture progress.

This chapter is based on Shepherd et al. (2020). The assertions that we make in this chapter are justified, cited, and referenced in Shepherd et al. (2020).

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In the previous chapter, we focused on how individuals notice a change in the external environment that indicates a potential opportunity. This chapter focuses on the social environment and how it can help entrepreneurs develop potential opportunities. Indeed, the entrepreneurship literature has long established the importance of entrepreneurs learning through interactions with others. This social learning is fundamental to recognizing and pursuing potential opportunities. A community of inquiry is a body of interested parties who promote social learning to develop a potential opportunity. In other words, a community of inquiry is the group of potential stakeholders who provide feedback to an entrepreneur regarding the veracity of his or her potential opportunity. Members of such communities include potential customers, mentors, investors, and technological experts.

The social learning that entrepreneurs engage in by interacting with communities of inquiry produces information that reduces the uncertainty typically surrounding entrepreneurs' opportunity decisions and actions. In turn, entrepreneurs use this information gained from social interactions to update their current opportunity beliefs. As opportunity development progresses, entrepreneurs have different information demands that they can satisfy by changing the nature of their communities of inquiry. Entrepreneurs can change their communities of inquiry by, for example, forming new relationships and terminating relationships that are no longer useful.

Although prior research has highlighted the importance of entrepreneurs updating their opportunity beliefs based on information from their communities of inquiry, there is a gap in the literature on how entrepreneurs engage their communities of inquiry. Building knowledge on entrepreneurs' ongoing (and changing) interactions with their communities of inquiry (which also change over time) is critical to advancing our understanding of opportunity development.

First, as opportunity development represents a process, entrepreneurs face different tasks and resource requirements over time (Greve & Salaff, 2003; Kazanjian, 1988). Entrepreneurs likely use their contacts and relationships to perform these tasks and satisfy these requirements as they arise. Given the importance of social learning to entrepreneurs for developing their potential opportunities, we can gain a great deal by investigating how entrepreneurs interact with communities of inquiry over time to refine their opportunities and make progress with the new ventures they create to exploit these opportunities. Second, actors'

current knowledge shapes their search for new information (Dosi, 1982; McFadyen & Cannella, 2004). The search for information and opportunity development can become mutually dependent. Therefore, understanding how entrepreneurs engage communities of inquiry can provide insights into opportunity development, and understanding how entrepreneurs develop potential opportunities can provide insights into entrepreneurs' community-of-inquiry engagement. Finally, the nature of opportunity development affects new venture progress and performance (Alvarez et al., 2015; Sarasvathy, 2001). Therefore, as we learn more about how entrepreneurs develop their opportunities, we can gain new insights into new venture progress.

Therefore, in this chapter, we ask (and hopefully address) the following question: *how do entrepreneurs engage communities of inquiryto develop opportunities?* We conducted a longitudinal inductive study of eight new ventures and their communities of inquiry over nine months (for specifics, see Shepherd et al., 2020) to address this research question. We offer a social model of opportunity development from this data-collection and analysis effort. We believe that this model makes three primary contributions to the entrepreneurship literature.

First, entrepreneurship research has investigated the social aspects of opportunity development by focusing on entrepreneurs' networks, social capital, and interactions with communities of inquiry (De Carolis & Saparito, 2006; Hoang & Antoncic, 2003). This chapter identifies entrepreneurs' different approaches to community engagement (open vs. focused) to explain how some entrepreneurs capture more value from communities of inquiry for opportunity development than other entrepreneurs.

Second, prior knowledge is critical for recognizing potential opportunities (Dencker et al., 2009; Grégoire et al., 2010). However, there are limitations to using prior knowledge to inform actions in an uncertain environment because it may not apply to that environment. In this chapter, we show how entrepreneurs' open engagement with their communities of inquiry when developing potential opportunities can overcome some of the limitations associated with using prior knowledge in uncertain environments. Thus, we extend theorizing on entrepreneurs' prior knowledge by highlighting a "social" learning approach to opportunity development.

Finally, previous research has indicated the importance of a community of inquiry for opportunity development (Autio et al., 2013; Shepherd,

2015). This chapter highlights how proposing that entrepreneurs merely interact with communities of inquiry is insufficient for elucidating the complexity of the social-learning process. Rather, opportunity development depends on the type of interaction entrepreneurs' have with their communities of inquiry. Therefore, we help explain why and how entrepreneurs differ in the ways they gather information, generate alternatives, and test opportunity conjectures. Thus, the social model of opportunity development (Shepherd et al., 2020) advances our understanding of the changes to a potential opportunity for venture progress by detailing entrepreneurs' critical social interactions with a community of inquiry.

Communities of Inquiry and Opportunity Development

We often think of opportunities as coming fully packaged at a single point in time. For example, scholars have defined opportunities as "situations in which new goods, services, raw materials, markets, and organizational methods can be introduced through the formation of new means, ends, or means-ends relationships" (Eckhardt & Shane, 2003, p. 336). However, to complement our understanding of opportunities at a point in time, more research is needed on the dynamic aspects by which opportunities advance toward highly developed opportunities as drivers of new venture progress. Therefore, we define opportunity development as a dynamic stream of ideas for a new product or service, which, when enacted, increase stakeholders' confidence in the viability of the focal potential opportunity. Potential opportunities develop as entrepreneurs generate new information through creative insights to probe an uncertain environment by interacting with members of a community of inquiry.

As potential opportunities are dynamic and uncertain, opportunity development is driven by entrepreneurs' conjectures about future possibilities. Specifically, entrepreneurs form beliefs about desired end states and preferred courses of action. These opportunity beliefs are future-focused "mental images or 'theories' about the potential reward for a particular action versus the cost of that action" (Wood et al., 2014, p. 253). Opportunity beliefs draw on founders' knowledge, motivation, and external information and guide action by organizing knowledge. While prior knowledge is important in forming opportunity beliefs, we know little about how opportunity beliefs change over time.

The small stream of research on *reevaluations* for opportunity development has focused on entrepreneurs' and other new venture members' learning. From this perspective, entrepreneurs' limited attention guides learning. Therefore, different attentional engagement modes explain differences in entrepreneurs' ability to notice, interpret, and use environmental signals to develop opportunity beliefs. Specifically, entrepreneurs engage in either top-down or bottom-up processes of allocating attention (see Chapter 1). Top-down information processing uses existing knowledge structures to direct attention to aspects of the environment that entrepreneurs expect to be relevant. Bottom-up processes rely on the environment's gestalt properties to enable entrepreneurs to identify patterns to make sense of the environment inductively. The choice of attentional mode influences how entrepreneurs *notice* and *evaluate* potential opportunities (see Chapter 1). However, to date, we know little about how entrepreneurs engage others to access and acquire further opportunity-related information. Filling this gap will advance our understanding of opportunity-development progress, yielding important implications for entrepreneurs, their stakeholders, and their ventures.

Progress in Opportunity Development

Our study (Shepherd et al., 2020) found that four of the eight ventures we studied had made substantial progress, while the others had made little progress. *Progress in opportunity development* refers to how the ventures' simple concepts that initially represented potential opportunities became more elaborate through improvements in the potential opportunities' fit with the internal and external environments. We used fictitious names starting with "P" to reflect this strong *progress* in opportunity development—Penn, Peppi, Philipinna, and Perahta. Illustrative of these ventures' progress, the coach of Peppi shared his assessment of the entrepreneurial team:

> This is really a dream team. I think when a team understands product and customer development and is open to feedback, then it doesn't matter which solution or technology they started with. I don't know if there will be more changes to Peppi's product, but they'll be able to do them if necessary. (p. 8)

One of Peppi's founders described how the team developed their opportunity:

> Two pivots later, we're personally involved in interactions with customers every day and have actually learned how customers make decisions, what features they value [and] how much. That has brought our product to even another level. We originally emphasized collaboration but shifted toward knowledge management because we have learned that it gives us easier market access. Our users have made lots of request toward it …, and it has landed us our first big paying client. (p. 8)

In contrast to Penn, Peppi, Philipinna, and Perahta, four ventures made only limited opportunity-development progress. We used names starting with "L" to denote their *lack* of progress—Lamar, Ludwig, Lorah, and Luete. Specifically, these ventures enacted very limited changes to their original ideas. For example, these unsuccessful ventures made only minimal changes to their prototypes over time. The entrepreneurs struggled to identify how they were going to try and improve their initial potential opportunities. Ultimately, these ventures did not make sufficient improvements to enable opportunity development. For example, the founder of Luete noted the following:

> There might have been signs that it isn't going anywhere. The others kept saying let's try this too and let's do that again from scratch, and I said we don't have the resources but go ahead if you think that's the right way. But I zoned out because I was unhappy. But we actually finished the first prototype now, and it works mechanically and electronically…. We just don't believe that the market is big enough anymore. So, we'll end it by publishing everything open source. (pp. 8–9)

These entrepreneurial teams realized quite late that there were some important questions about whether there would be sufficient demand for their proposed products. Lamar and Luete eventually realized that the prices customers were willing to pay were below production costs. As a result, Lamar and Lorah decided to pivot from the initial conceptualizations of their potential opportunities. In contrast, Ludwig and Luete terminated their projects (and the new ventures they created to exploit their potential opportunities) because of their limited progress.

Entrepreneurial Team Knowledge and Engaging a Community of Inquiry

Entrepreneurial teams differ in how they approach learning about their potential opportunities. These differences help explain why some ventures experience substantial progress in opportunity development while others do not. Entrepreneurial teams' prior knowledge helps explain why entrepreneurial teams differ from other entrepreneurial teams in learning new information.

Progress in Opportunity Development, Open Community Engagement, and Entrepreneurial Teams of Varied Specialists

In our study (Shepherd et al., 2020), the entrepreneurial teams that progressed well in opportunity development recognized the importance of capturing *unexpected* information about their potential opportunities. Specifically, these teams included members who had specialized knowledge (market and technological) that was mostly different from the other team members' specialized knowledge. For example, Penn's mentor lauded that one founder "brings customer experience from the industry… while the other founder's technical skills position the team extremely well." Similarly, one of the founders for Perahta explained, "It's not like we are developing a product for customers and problems we only vaguely know something about. We're from this field." Indeed, each team had at least one member who had experienced the focal problem firsthand and had searched for a solution to it, and some were lead users of the new ventures' products and services. Lead users included a nurse in Penn, a service technician in Philipinna, and a PhD student in Perahta.

The heterogeneity in members' prior knowledge meant that these teams were open minded about who they interacted with and how those interactions might draw their attention to new, unexpected information about their potential opportunities. Because of the differences in the members' knowledge expertise, these entrepreneurial teams were aware of the limitations of any one source of prior knowledge. These entrepreneurial teams knew that despite their knowledge sources' diversity, there were things they did not know about their potential opportunities. This awareness of their knowledge limitations drove these teams to focus on collecting and interpreting unexpected information to facilitate their learning about their potential opportunities. Specifically, in the teams of varied specialists, each member learned from the other members

that his or her own knowledge was not all encompassing. Thus, the team members realized that they could not solely rely on their own expectations about what was critical for opportunity development. These successful teams collectively engaged with their communities of inquiry to reveal information not covered by their prior knowledge. For example, a founder of Penn explained, "The nurses are our co-creators and real customers.... We have to listen to what they tell us they need the most, meaning the problems they have that have not been solved."

Therefore, because they were composed of diverse specialists, these teams approached their communities of inquiry with open engagement. By *open community engagement*, we mean that these entrepreneurial teams engaged their communities of inquiry to explore potentially surprising knowledge sources to inform their opportunity development. The Peppi coach noted how team members were "extremely open.... They don't decide themselves what they will do but let the customer decide. They just accept feedback on what could be critical and test it and go for what works best."

Lacking Progress in Opportunity Development, Focused Community Engagement, and Entrepreneurial Teams of Generalists

The ventures lacking progress in developing their potential opportunity had relatively homogenous entrepreneurial teams. That is, the team members had similar and somewhat general knowledge of technologies and markets. One of the entrepreneurs of Lamar believed that the team's general knowledge of technology and markets was a strength and that it was important that they focused on the team's strength. He stated, "Our strength lies in our innovativeness.... We know what we want, and how we achieve it is a function of our potential."

While generalist knowledge is often considered an advantage in running a new venture, entrepreneurs should be "jacks-of-all-trades." When it comes to engaging communities of inquiry to develop their potential opportunities, these teams' general knowledge led them to pay little attention to the specific gaps in their prior knowledge. Therefore, they did not focus on how community members could fill their knowledge gaps with new and unexpected information. Indeed, the entrepreneurial teams of (relatively homogenous) generalists believed they covered the terrain's scope sufficiently to identify specific (expected) problems and acquired specialized information to address these problems. For example, a member of Lamar told us the following: "From our research,

there's a huge unsaturated market.... Our idea *was* the solution. We didn't explore the problem more" (emphasis added). Similarly, a team member of Luete noted, "I've always found our product sexy, and that hasn't changed.... When the business guys wanted to take business plan sessions, I always said, 'We first have to prove that this works'." Thus, in attempts to engage members of their communities of inquiry, the unsuccessful entrepreneurial teams focused on addressing opportunity aspects they knew were problematic rather than focusing on accessing information about opportunity aspects that were unexpected yet potentially problematic.

Therefore, given their generalist composition, the unsuccessful entrepreneurial teams took a focused approach to engaging with their communities of inquiry. *Focused community engagement* refers to when entrepreneurial teams interact with their communities of inquiry to explore specific aspects of their potential opportunity they know they want to address and not to generate information entirely new to them. Over time, this type of engagement leads to highly incremental changes to opportunities.

Interacting with a Community of Inquiry for Opportunity Development

In our study (Shepherd et al., 2020), we found that the teams' ability to learn from their communities of inquiry for opportunity development depended on how they engaged with their communities of inquiry in gathering information, generating alternatives, and testing conjectures. *Gathering information* refers to investing time and other resources into exploring and collecting data about a potential opportunity. *Generating alternatives* refers to using novel insights from information-gathering efforts to formulate different action courses for consideration when developing a potential opportunity. *Testing conjectures* refers to using gathered information to assess the validity of a team's propositions that exploiting a potential focal opportunity is both desirable and feasible. Over time, the teams refined their beliefs about the nature of their potential opportunities. The successful entrepreneurial teams that more openly engaged with their communities of inquiry differed in these three activities from the unsuccessful entrepreneurial teams that had more focused engagement with their communities of inquiry.

Open Community Engagement and Gathering Diverse Information
The entrepreneurial teams that openly engaged with their communities of inquiry gathered new information about their potential opportunities from a wide range of community members. This open-engagement approach also led these entrepreneurial teams to add new groups to their communities of inquiry (i.e., the communities expanded and became more diverse). This new information from community members informed the teams' changes to their potential opportunities. For example, Perahta interacted with several "distributors who know the market and might be able to point out problems or optimization potentials." Similarly, both Philipinna and Perahta used their professional networks to access potential customers to generate information useful in opportunity development. However, these entrepreneurial teams also purposefully expanded beyond their current networks to increase the size and diversity of their communities of inquiry by, for example, adding potential customers and experts with whom they had no previous relationships. Adding new stakeholders to their communities of inquiry opened these entrepreneurial teams to new information about their potential opportunities. This new information included unexpected (based on team members' current knowledge) information useful for opportunity development.

From early in the opportunity-development process, these successful entrepreneurial teams used rudimentary prototypes to generate more information from their interactions with their communities of inquiry. Presenting prototypes to community members enabled the teams to "see" people's reactions to the current conceptualizations of their potential opportunities. In particular, potential customers provided critical feedback, but so did other community members. For example, Penn showed an early prototype to potential customers while acknowledging that it "looked extremely ugly at that point." Indeed, the team's mentor complimented them on their "level of proactivity in seeking out advice from different types of people, proving their high levels of self-reflection." The founders of Perahta also described their motivation for interacting with their community of inquiry as "repeatedly acquiring as much information from [the] target group as possible in short amounts of time." Indeed, the Philipinna founders emphasized "always showing the prototype or parts of it to get people hooked on the product." In each of these examples, the communities of inquiry reciprocated the teams' ongoing efforts to engage in conversation. Drawing on prototypes, the successful entrepreneurial teams benefited from systematic and continuous dialogue

with their community members, including potential customers, experts, coaches, and mentors. As a result, these teams expanded their webs of relationships to gather information about their potential opportunities and generate new knowledge to refine their potential opportunities.

Focused Community Engagement and Gathering Specific Information

The teams relying on focused engagement with their communities of inquiry (i.e., the unsuccessful entrepreneurial teams) directed their efforts toward engaging technical and market experts to resolve specific issues that had emerged during opportunity development. Thus, their interactions were primarily with small and specialized audiences within larger potential communities of inquiry. In contrast to the successful entrepreneurial teams, these entrepreneurial teams had few interactions with potential customers and thus did not acquire or integrate much information from these important members of their communities of inquiry. These teams seemed to engage in focused engagement with their communities of inquiry for several reasons. First, the team members lacked specialized expertise in various topics, so they were concerned that interacting with a broad range of community members would result in information that was inconsistent with their beliefs and desires about their technologies and target markets. For example, one of Ludwig's founders told us the following:

> We don't want to annoy them and waste everybody's time because … you need to have some results from technical prototype tests. That's why you better focus on the technical development, and then hopefully you'll receive the right results from the tests. Then you can then use that to make progress on the market side. And those results will also make you much more convinced about what to believe about all of this.

Furthermore, Lamar's coach expressed the belief that "the team didn't quite have the courage to step up to [interact with] their customers."

Second, when these unsuccessful teams did interact with members of their communities of inquiry who could provide new and unexpected information, they often did so because they felt they should, not because they wanted to acquire and learn from such information. As a result, these teams had few interactions with community members they believed were too distant from their current knowledge, potential opportunities,

and envisioned opportunities. For example, when these teams' engaged community members, they did so in a relatively superficial and abstract way (because they did not display prototypes). The interactions were also unidirectional; the teams failed to develop effective dialogue with community members (i.e., they did not engage in back-and-forth exchanges with community members). One potential customer described his interaction with Lamar after participating in the team's pilot study (which took place over a year into opportunity development): "I sent the team five pages full of feedback about three weeks ago, and they haven't gotten back to me on those points, apart from thanking me for taking part. So, I don't know what's going to happen now. I've stopped testing."

Finally, the unsuccessful entrepreneurial teams shared the conviction that "by no means should you ever show an unfinished product to potential customers" (one of Lorah's founders) or to other members of their communities of inquiry. As a result, they only presented prototypes to their communities of inquiry when they felt sufficiently confident about the prototypes' appearance, capabilities, and performance. That is, in the early stages of opportunity development, the teams' lack of confidence in their prototypes' technological performance and appearance obstructed them from seeking feedback on prototypes. Only late in opportunity development did the teams started to show rather "polished" prototypes to selected members of their communities of inquiry and, specifically, to potential customers.

Therefore, the successful entrepreneurial teams openly engaged with their communities of inquiry to gather diverse information to facilitate opportunity development. Furthermore, they expanded the size and diversity of their communities of inquiry through weak ties. They presented rudimentary prototypes early to engage in a dialogue with community members, especially potential customers. In contrast, the unsuccessful entrepreneurial teams focused their engagement with communities of inquiry to gather specific information for opportunity development. They engaged narrow communities of experts and others who could provide technical and market information, and they developed sophisticated prototypes before using them to interact with community members. Because these prototypes were already sophisticated and were only presented to the communities of inquiry late in the process, the feedback from these interactions was limited and had little impact on opportunity development.

Open Community Engagement and Generating Multiple Alternatives

After the successful entrepreneurial teams openly engaged with their communities of inquiry to gather new information, they explored multiple alternatives for improving the current state of their potential opportunities. These interactions allowed them to take the community members' perspectives when thinking about their potential opportunities, as one of Peppi's founders explained:

> We would always recommend asking from a problem perspective and going into interviews with an open mind. I mean, in the beginning, I always let them tell me whatever came to their mind about how they manage their daily information and knowledge management and how they collaborate as a team. And then it figuratively gushes out of them, and I try to write down as much as I can.

For these interactions to be effective, it was important for the entrepreneurial teams to withhold their own ideas for opportunity development to avoid priming community members toward the current approach and to ensure that all team members kept an open mind.

Engaging members of their communities of inquiry with prototypes of their potential opportunities early in the opportunity-development process (before even determining which functions these prototypes should entail) facilitated the joint exploration of solution alternatives between the entrepreneurial teams and various community members. For example, Peppi systematically gathered data at the beginning of opportunity development, carrying out surveys with many potential customers to explore the potential problems customers would experience and possible solutions to those problems. After the team members agreed upon a possible solution to a problem, they quickly presented a rudimentary prototype to explore potential customers' interest in buying a finished version of the product in the future. After interacting with potential customers, the Peppi team soon realized that "it would fail due to students' lack of willingness to pay for non-recreational services" (one of Peppi's founders). The team members came up with alternative features for their potential opportunity, a second solution involving a different customer group, and a different set of services. Still, they discarded

these alternatives based on feedback from experts and mentors in their community of inquiry. Ultimately, the team identified a third unexpected solution. This solution arose from a discussion with a potential customer group that had the highest buying power.

Focused Community Engagement and Generating Related Alternatives

Based on their information-gathering efforts, the unsuccessful entrepreneurial teams relied on a small set of members of their communities of inquiry with whom they could explore alternative solutions to particular development issues. They did not explore multiple alternative *markets* or different technology-market combinations. For example, considering how to protect their digital product from power outages, the Lamar team generated two alternative solutions. As one founder explained, this "seemingly small technicality [was] hugely important because it affects many parts of the whole concept." Both solutions offered advantages and came at similar costs, yet Lamar's team members prioritized the solution's features differently, so the team found it "difficult to come to a decision rationally" (one of Lamar' founders). However, rather than solving this issue by engaging with a broad range of community members, such as potential customers or distributors, the team redoubled its exploration of possible technological angles. These narrow efforts to resolve the issue caused the team to repeatedly engage the same set of technical experts. Thus, more and more time was "spent… discussing all the alternatives, going back and forth" (one of Lamar's founders). As this example illustrates, these unsuccessful entrepreneurial teams had few interactions with more diverse community members about different market alternatives to develop their potential opportunities.

Therefore, the successful entrepreneurial teams that openly engaged with their communities of inquiry generated many and varied ideas over time to improve their potential opportunities. In particular, they sought and relied heavily on users' perspectives to inform opportunity development. In contrast, the unsuccessful entrepreneurial teams using focused engagement with their communities of inquiry generated few ideas over time and often relied on experts' perspectives.

Open Community Engagement and Disconfirming Opportunity Conjectures

The successful entrepreneurial teams that openly engaged with their communities of inquiry tested their opportunity conjectures by interacting with community members in a manner that would *induce unexpected information (including negative feedback)*. Identifying unexpected information about their potential opportunities (e.g., current prototypes) early in the development process allowed these teams to make changes to their potential opportunities and increase the likelihood of new venture progress and success. For example, after interacting with potential customers over rudimentary prototypes, these teams sought in-depth feedback on unsatisfactory or unnecessary technological features of the proposed products and other potential problems with the prototypes. These efforts revealed unexpected information about the potential opportunities that the teams valued and learned from. A founder of Penn reflected this approach to using the venture's prototype:

> Once it's being used every day, you can see if it really stands the test. Whether it's effective or whether there's too much discharge … maybe the membranes snatch every five hours. We've already tested it ourselves, but you never know how it's going to be in real life: maybe patients stick their fingers into it or a spoon. Can you apply this concept in a clinic at all? That'll be exciting to find out.

However, over and above the desire to generate unexpected information about their potential opportunities, these successful teams sought and acquired both positive and negative feedback. For example, when conversations with community members were perceived as "uncomfortable because things come up that you wanted to suppress," the team members reminded themselves that "it's good that these things come up anyway" (one of Philipinna's founders). The teams pushed themselves to withhold their expectations to keep an open mind to the feedback generated from interactions with their communities of inquiry. Indeed, based on the unexpected information received from their communities of inquiry, these successful entrepreneurial teams developed their opportunities by analyzing the results of tests of their opportunity conjectures in an open-minded way. For example, a founder of Philipinna described the team's approach as follows:

> The "idea fit" is there when people pat you on the back and say, "Great idea, we want to try that." But when you notice that you can't actually manage to sell it, then you don't have a "product fit." You can only find that out when you build prototypes, give them to customers to play with and get a feeling for it, and then either systematically optimize certain features or kick them.

Beyond seeking feedback to generate unexpected information about their potential opportunities, the successful entrepreneurial teams observed customers as they used the prototypes. They paid particular attention to potential customers' unexpected behaviors to identify issues that the customers may have been unaware of and unable to verbalize. For example, one of Peppi's founders described this approach as follows:

> You try to read their initial reactions and just write them down without filtering anything. And you observe how they handle the product even if they're not saying anything. Like if someone takes ages to find a button, then you absolutely need to make a note of that. That's negative feedback in a way, but it's super important to do this.

Once these successful teams had gathered sufficient information, they adapted their opportunities to accommodate this new and unexpected information.

Overall, these successful entrepreneurial teams openly engaged with their communities of inquiry to generate new, unexpected information. This new, unexpected information *guided* the entrepreneurial teams to various community members, and the teams approached these external information sources with an open mind to inform opportunity development. Due to this open-engagement approach, these entrepreneurial teams could make fundamental and radical adaptations to their opportunities' technological and business-related aspects. Overall, these entrepreneurial teams enacted learning efforts early and often in the opportunity-development process.

Focused Community Engagement and Confirming Opportunity Conjectures

When the unsuccessful entrepreneurial teams interacted with members of their communities of inquiry to collect information, they sought feedback that they expected (given their current development paths) to be important for improving their potential opportunities. Although this feedback

seeking may have generated important information and led to incremental refinements of their opportunities, it did not generate information beyond the teams' expectations; that is, their feedback-seeing efforts did not generate unexpected information about their potential opportunities. For example, when observing Ludwig's multiple presentations of their potential opportunity to technical experts, we noticed a strong emphasis on the envisioned solution's projected technological benefits. However, as one of the founders noted, "We kind of always just automatically put a label on it—'reduces noise'—without actually knowing if it will end up working that way [laughs]. But in theory, we'll filter out all these effects, so our product should be quieter." In presenting their solutions, these teams did not test their opportunity conjectures. For example, they did not offer prototypes during the early stage of opportunity development to determine potential customers' reactions. Instead, these teams initially evaluated prototypes strictly within their ventures' boundaries.

Only when the prototypes were well established and "polished" did the teams show them to outsiders, but they only interacted with a small set of potential customers. They focused on obtaining feedback about their prototypes within the narrow constraints of the teams' expectations about the nature of their potential opportunities. For example, one of Lorah's founders remarked, "She [a potential customer] said she likes it. She was using it in a weird way. To be honest, we didn't really understand why. We did ask her, but it still didn't really make sense to us afterward." When we later interviewed this potential customer, it turned out that she found the prototype interfered with her work habits and stopped using it for the most part. Lorah's team members discounted the negative feedback by describing the potential customer's behavior as "weird." The team attributed blame to the potential customer, not to themselves or their technology, so there was nothing for them to learn and no need to make changes based on information from an "outlier." Indeed, during testing, the user expressed an overall positive evaluation of the product because she did not want to hurt the team's feelings. The team readily accepted the positive superficial feedback while discounting and ignoring the negative feedback from the potential customer's behavior as she tried to use the product. Other community members also found that these teams reacted "defensively" (Lamar customer) to any unexpected or negative feedback about their potential opportunities. Indeed, Lorah's mentor noted, "When I give them more detailed feedback, they go into the mindset of 'We know it better anyway'." The unsuccessful entrepreneurial

teams decided not to act on feedback whenever the suggested solutions or prototypes received ambiguous feedback (i.e., outside the teams' knowledge, expectations, or interests). They perceived such information as tangential to opportunity development. Instead, these entrepreneurial teams attended to feedback (and subsequently returned to issues) related to improving their potential opportunities' existing features and capabilities and ignored or discounted information that signaled the need to replace or add substantially new features and capabilities.

Therefore, the successful entrepreneurial teams openly engaged with their communities of inquiry to generate and use unexpected information about their potential opportunities. To generate such information, they observed many users early in the opportunity-development process. In contrast, the unsuccessful entrepreneurial teams used focused engagement with their communities of inquiry to seek feedback consistent with the current trajectories of their potential opportunities, and they observed few users. Even when their communities of inquiry provided opportunity feedback that was both consistent and inconsistent with expectations, these teams focused on consistent feedback as motivation for further improvements to their potential opportunities and mostly ignored inconsistent feedback (i.e., confirmation bias [Nickerson, 1998]).

A Social Model of Opportunity Development

Figure 2.1 illustrates our social model of opportunity development (detailed in Shepherd et al., 2020). In the top panel of Fig. 2.1, we illustrate the successful entrepreneurial teams' model—teams composed of varied specialists that openly engaged with their communities of inquiry. During opportunity development, this engagement with their community members involved generating diverse information, multiple alternatives (technology and market) through co-creation, and consistent and inconsistent (vis-à-vis expectations) information to develop their potential opportunities. In the bottom panel, we show the unsuccessful entrepreneurial teams' model—teams composed of generalists that focused their engagement with their communities of inquiry. These teams gathered specific information from experts that they expected would be sufficient for opportunity development, generated few alternatives for developing their potential opportunities, emphasized feedback suggesting that their potential opportunities were on the "right" development path,

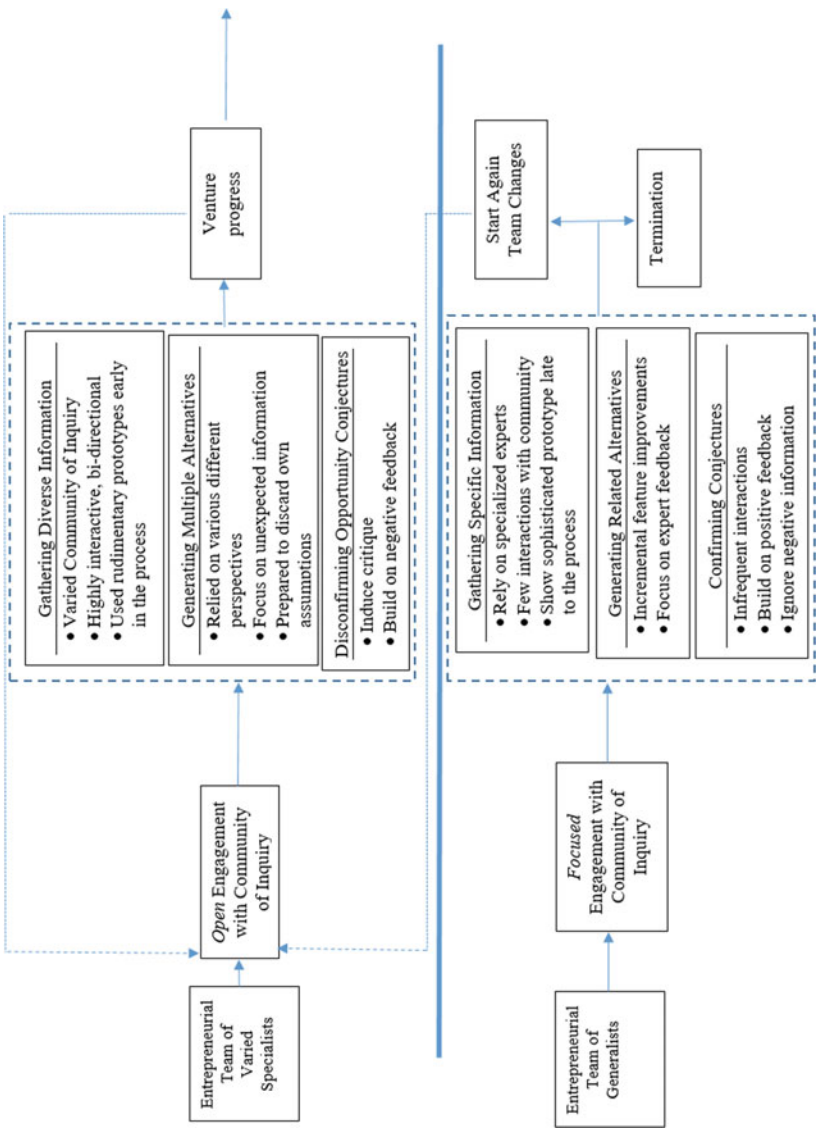

Fig. 2.1 A social model of opportunity development (Adapted from Shepherd et al., 2020)

and discounted or ignored information suggesting they needed to make major changes.

This chapter explained how access to resources is necessary but not sufficient for progress in opportunity development. Some of the teams we studied made more of their communities of inquiry by openly engaging them in the opportunity-development process. These teams iterated dynamically during opportunity development. In contrast, the unsuccessful teams gathered specific information from experts who they expected to be important in opportunity development, generated few alternatives, and tested opportunity conjectures by seeking confirmation. These teams' focused engagement with their communities of inquiry led to little opportunity development and, ultimately, to either a major pivot away from the focal team's initial potential opportunity or the termination of the entrepreneurial endeavor altogether.

This chapter explained how entrepreneurial teams engage communities of inquiry for opportunity development and, ultimately, venture progress. The social model of opportunity development highlights how an entrepreneurial team's knowledge influences their approach to engaging with its community of inquiry for opportunity development. In doing so, the model makes important contributions to the literature on opportunity development and, specifically, to research on social learning in the entrepreneurial context. Although there is considerable research on recognizing fully formed opportunities, there is also research (mostly conceptual and philosophical) on the co-construction of opportunities. The model described in this chapter offers new insights into opportunity development's social process of co-construction.

The social model of opportunity development (Shepherd et al., 2020) described in this chapter offers three primary theoretical implications. First, research on the development of opportunities explains the social aspects of such development in terms of networks, social capital, and interactions with communities of inquiry (Hoang & Antoncic, 2003; Seyb et al., 2019). The current model extends this research stream by offering new insights into how entrepreneurial teams differ in their engagement with their communities of inquiry and how these differences impact opportunity development. The successful entrepreneurial teams we studied (i.e., those whose ventures were progressing well) openly engaged with their communities of inquiry for opportunity development, whereas the unsuccessful entrepreneurial teams relied on focused engagement. The successful entrepreneurial teams also differed from

the unsuccessful teams in the timing of their specific actions (e.g., showing prototypes to community members early vs. late), their information collection (diverse vs. specific), and their generation of alternatives (multiple vs. related) with community members.

Second, research on the process of constructing opportunities has highlighted the uncertainty surrounding potential opportunities and the importance of both information processing and action (Sarasvathy, 2001; Wood & McKinley, 2010) for learning to develop potential opportunities. However, there has been little exploration of how and what information entrepreneurs use for opportunity development, what actions entrepreneurs take to engage others in the opportunity-development process, and why entrepreneurial teams differ in the benefits they derive from social interactions when developing opportunities. While founders' prior knowledge explains learning in new domains (Corbett, 2007; Grégoire et al., 2010), there are limits to using prior knowledge to direct activities in uncertain environments. Although the successful teams relied on their members' prior knowledge, these teams still openly engaged with their communities of inquiry to generate and use new information. This open engagement reflects a reluctance to rely solely on prior knowledge. It demonstrates the importance of unexpected information (vis-à-vis the founders' shared knowledge structures [see Chapter 1]) for opportunity development. Therefore, while relying on prior knowledge can lead to cognitive blindness (Tripsas, 2009; Tripsas & Gavetti, 2000), entrepreneurial teams can avoid (or minimize) this cognitive blindness by openly engaging their communities of inquiry in the opportunity-development process. Thus, this model extends theorizing on the role of prior knowledge in opportunity development by revealing a "social" way whereby prior knowledge guides opportunity development while minimizing cognitive blindness—namely, through influencing the use of various means of engaging communities of inquiry.

Finally, it seems obvious to highlight the importance of collecting information on the potential markets and technologies for a potential opportunity before fully exploiting it (e.g., Choi & Shepherd, 2004; Hmieleski & Baron, 2008). Indeed, as we described in this chapter, the social model of opportunity development provides new theoretical insights into the role of a community of inquiry and the different mechanisms for engaging community members. Linked to differences in how founders engage with their communities of inquiry, we highlighted how entrepreneurial teams differ in gathering information (i.e., diverse

or specific), generating alternatives (multiple or related), and testing opportunity conjectures (disconfirmation or conformation). These differences in social learning influence opportunity development. Specifically, entrepreneurial teams lack progress when they use a focused-engagement approach, gather information from a narrow group of community-of-inquiry members, generate a limited set of incremental alternatives, and use information consistent with their prior opportunity beliefs. This chapter makes explicit the critical factors that explain how entrepreneurs can effectively engage their communities of inquiry (as well as the mechanisms of engaging communities of inquiry that are likely to lead to limited opportunity development and unsuccessful venture performance).

Based on the social model of opportunity development, we tentatively offer the following practical advice to potential founders: First, create teams of members with various specialist knowledge domains. Second, openly engage a community of inquiry to gather diverse information by maintaining an open mind when interacting with the broad and diverse community of inquiry, including displaying prototypes early. Third, co-create multiple alternatives with many community members to reveal and learn from unexpected information about the potential opportunity. Finally, seek to disconfirm opportunity conjectures by inducing critique from the community of inquiry and avoid ignoring or discounting information that fails to confirm their opportunity conjectures.

Conclusion

This chapter explained a social model of opportunity development (Shepherd et al., 2020). The model proposes that successful entrepreneurial teams consist of varied specialists who openly engage their communities of inquiry. By openly engaging communities of inquiry, entrepreneurial teams can gather diverse information, generate multiple alternatives, and test conjectures about their potential opportunities through disconfirmation. In contrast, unsuccessful entrepreneurial teams consist of generalists who rely on focused engagement with their communities of inquiry. Focused engagement leads these teams to gather specific and expected information from experts in narrow domains, generate few alternatives, and test opportunity conjectures by seeking and using information that confirms these conjectures. This social model offers new insights into entrepreneurial teams' engagement with their communities of inquiry for opportunity development and, ultimately, new venture progress.

References

Alvarez, S. A., Young, S. L., & Woolley, J. L. (2015). Opportunities and institutions: A co-creation story of the king crab industry. *Journal of Business Venturing, 30*(1), 95–112.

Autio, E., Dahlander, L., & Frederiksen, L. (2013). Information exposure, opportunity evaluation, and entrepreneurial action: An investigation of an online user community. *Academy of Management Journal, 56*(5), 1348–1371.

Choi, Y. R., & Shepherd, D. A. (2004). Entrepreneurs' decisions to exploit opportunities. *Journal of Management, 30*(3), 377–395.

Corbett, A. C. (2007). Learning asymmetries and the discovery of entrepreneurial opportunities. *Journal of Business Venturing, 22*(1), 97–118.

De Carolis, D. M., & Saparito, P. (2006). Social capital, cognition, and entrepreneurial opportunities: A theoretical framework. *Entrepreneurship Theory and Practice, 30*(1), 41–56.

Dencker, J. C., Gruber, M., & Shah, S. K. (2009). Pre-entry knowledge, learning, and the survival of new firms. *Organization Science, 20*(3), 516–537.

Dosi, G. (1982). Technological paradigms and technological trajectories. *Research Policy, 2*(3), I47-162.

Eckhardt, J. T., & Shane, S. A. (2003). Opportunities and entrepreneurship. *Journal of Management, 29*(3), 333–349.

Grégoire, D. A., Barr, P. S., & Shepherd, D. A. (2010). Cognitive processes of opportunity recognition: The role of structural alignment. *Organization Science, 21*(2), 413–431.

Greve, A., & Salaff, J. W. (2003). Social networks and entrepreneurship. *Entrepreneurship Theory and Practice, 28*(1), 1–22.

Hmieleski, K. M., & Baron, R. A. (2008). Regulatory focus and new venture performance: A study of entrepreneurial opportunity exploitation under conditions of risk versus uncertainty. *Strategic Entrepreneurship Journal, 2*(4), 285–299.

Hoang, H., & Antoncic, B. (2003). Network-based research in entrepreneurship: A critical review. *Journal of Business Venturing, 18*(2), 165–187.

Kazanjian, R. K. (1988). Relation of dominant problems to stages of growth in technology-based new ventures. *Academy of Management Journal, 31*(2), 257–279.

McFadyen, M. A., & Cannella, A. A. (2004). Social capital and knowledge creation: Diminishing returns of the number and strength of exchange relationships. *Academy of Management Journal, 47*(5), 735–746.

Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. *Review of General Psychology, 2*(2), 175–220.

Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review, 26*(2), 243–263.

Seyb, S. K., Shepherd, D. A., & Williams, T. A. (2019). Exoskeletons, entrepreneurs, and communities: A model of co-constructing a potential opportunity. *Journal of Business Venturing, 34*(6), 105947.

Shepherd, D. A. (2015). Party on! A call for entrepreneurship research that is more interactive, activity based, cognitively hot, compassionate, and prosocial. *Journal of Business Venturing, 30*(4), 489–507.

Shepherd, D. A., Sattari, R., & Patzelt, H. (2020). A social model of opportunity development: Building and engaging communities of inquiry. *Journal of Business Venturing*, 106033.

Tripsas, M. (2009). Technology, identity, and inertia through the lens of "The Digital Photography Company." *Organization Science, 20*(2), 441–460.

Tripsas, M., & Gavetti, G. (2000). Capabilities, cognition, and inertia: Evidence from digital imaging. *Strategic Management Journal, 21*(10/11), 1147–1161.

Wood, M. S., McKelvie, A., & Haynie, J. M. (2014). Making it personal: Opportunity individuation and the shaping of opportunity beliefs. *Journal of Business Venturing, 29*(2), 252–272.

Wood, M. S., & McKinley, W. (2010). The production of entrepreneurial opportunity: A constructivist perspective. *Strategic Entrepreneurship Journal, 4*(1), 66–84.

CHAPTER 3

A Lean Framework for Starting a New Venture

Abstract The lean startup framework is one of the most popular contributions in the practitioner-oriented entrepreneurship literature. This chapter builds on a recent paper (Shepherd & Gruber in *Entrepreneurship Theory and Practice*. https://doi.org/10.1177/1042258719899415, 2020) to highlight new insights into how new ventures are started based on the lean startup framework. Specifically, we describe the origin of the lean startup framework and its five main building blocks—(1) identifying and evaluating market opportunities in startups, (2) designing business models, (3) engaging in validated learning (including customer development), (4) building minimum viable products, and (5) learning whether to persevere with or pivot from the current course of action. We organize these building blocks into a framework suggesting how considering the contextual characteristics of and the interdependencies between the building blocks can enrich our understanding of using the lean startup framework to start a new venture.

The lean startup framework has captured (aspiring) entrepreneurs' interest. This chapter describes the lean startup framework's main building blocks (i.e., a practitioner perspective), enriching it with existing

This chapter is based on Shepherd and Gruber (2020). The assertions that we make in this chapter are justified, cited, and referenced in Shepherd and Gruber (2020).

D. A. Shepherd and H. Patzelt, *Entrepreneurial Strategy*,
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research insights. The current chapter builds on the lean startup framework to organize current research on startups and a recent study (Shepherd & Gruber, 2020) to bridge the academic-practice divide. Bridging this divide will (1) help academics by offering a foundation of knowledge upon which future research can build to address questions that are of interest to both academics and practitioners, (2) help practitioners by "putting meat on the bones of the framework" from academic research, and (3) help educators by integrating academic knowledge with practitioner interests to inform students' knowledge of new venture startup.

Moreover, substantial research on new ventures has increased our understanding of organizations' strategies, networks, and performance (e.g., Cooper et al., 1994; McDougall et al., 1992; see also Chapter 4). However, before entrepreneurs can craft a new venture strategy, they must deal with numerous processes, activities, and outcomes associated with new venture creation. Indeed, practitioner research has referred to scaling as the process of growing a venture after startup (see Chapter 5). Therefore, with a deeper understanding of startups, we can connect the dots between identifying (Chapter 1) and co-constructing potential opportunities (Chapter 2) and starting new ventures (this chapter). We can also connect the dots between the startup of new ventures and new ventures' operations (Chapter 4) and scaling (Chapter 5).

The Lean Startup Framework: Its Origins, Core Ideas, and Roots in Research

Steve Blank started the notion of the lean startup framework. Blank was a successful serial entrepreneur and investor who focused on reducing the risk associated with the new venture–startup process. Blank was highly critical of the many startups that begin the startup process with an already well-established product idea. He was also critical of entrepreneurs' inward-looking approach, in which they focus their time, effort, and other resources on perfecting a product idea without knowing whether customers need the product or would be willing to pay for it or whether the newly created venture could make sufficient revenues. Therefore, he proposed that entrepreneurs should adopt an outward-looking mindset to learn and adapt. He argued that entrepreneurs should develop opportunity conjectures about their startups' key elements with an outward-looking learning mindset, move out of their offices, test

these conjectures, and then adapt their potential opportunities until the process yielded a viable business model. Blank offered the first set of tools (customer development, agile engineering, and minimum viable product) to help entrepreneurs accomplish their search, learning, and validation activities (Blank, 2013; Shepherd & Gruber, 2020).

Osterwalder and Pigneur (2010) also contributed to the lean startup framework. Specifically, they positioned the startup process in a design-science framework based on the scientific method. This approach led to the "Business Model Canvas." This tool aims to help entrepreneurs design a business model and formulate and test hypotheses about that business model. The Business Model Canvas assumes that every business model can be broken down into nine different building blocks that founders must define for their ventures. These building blocks capture (1) the venture's value proposition, (2) the customer segments the venture aims to target, (3) the relationships the venture has to build with its customers, (4) the channels through which the venture reaches its customers, (5) the revenue streams the venture expects from customers, (6) the key activities the venture has to perform, (7) the resources the venture needs to perform these activities, (8) the key partnerships required for performing the activities, and (9) the cost arising from the venture's activities. In a graphical illustration, the Business Model Canvas arranges these building blocks in the form of a tool that founders can use to gain a comprehensive overview of their ventures' business models and adapt the building blocks based on feedback from (potential) customers, investors, or other stakeholders.

Eric Ries made the next significant contribution to the lean startup framework. Ries was an entrepreneur and student of Steve Blank. He identified critical similarities between the startup process's goals (as proposed by Blank and Osterwalder and Pigneur) and the lean manufacturing approach. Ries dubbed the combination of customer development and the iterative agile techniques as the "Lean Startup." Specifically, he argued that:

> the Lean Startup method [allows for] constant adjustments with a steering wheel called the Build-Measure-Learn feedback loop. Through this process of steering, we can learn when and if it's time to make a sharp turn called a pivot or whether we should persevere along our current path. Once we have an engine that's revved up, the Lean Startup offers methods to scale and grow the business with maximum acceleration. (Ries, 2011, p. 22)

Finally, the most recent addition to the lean startup framework is the "Market Opportunity Navigator" developed by Marc Gruber and Sharon Tal (2017). As Blank (2013, n.p.) pointed out, the lean startup tools discussed above (customer development, agile engineering, Business Model Canvas):

> tell you how to rapidly find product/market fit inside a market, and how to pivot when your hypotheses are incorrect. However, they don't help you figure out where to start the search for your new business. A new tool—the Market Opportunity Navigator—helps do just that. It provides a wide-lens perspective to find different potential market domains for your innovation, before you zoom in and design the business model or test your minimal viable products.

This tool enables entrepreneurs to identify and choose the most promising starting position for the startup process (Shepherd & Gruber, 2020). A series of studies on startups' market choices form the basis for the Market Opportunity Navigator tool (e.g., Gruber et al., 2008).

Building Blocks of the Lean Startup Framework

The lean startup framework has five primary building blocks: (1) identifying and evaluating market opportunities in startups, (2) designing business models, (3) engaging in validated learning (including customer development), (4) building minimum viable products, and (5) learning whether to persevere with or pivot from the current course of action (Shepherd & Gruber, 2020). In Fig. 3.1, we illustrate the connection between the various building blocks and how they work together as a framework to help entrepreneurs reduce some of the uncertainty and risks associated with the startup process. In the following subsection, we explain each of the building blocks of the lean startup framework.

Building Block 1: Identifying and Evaluating Market Opportunities

The potential opportunity an entrepreneur seeks to exploit defines the domain in which he or she wants to create a viable new venture that creates value. Therefore, identifying and evaluating potential opportunities (see Chapters 1 and 2) profoundly affect the chances for any startup's success. However, entrepreneurs are often too optimistic and confident

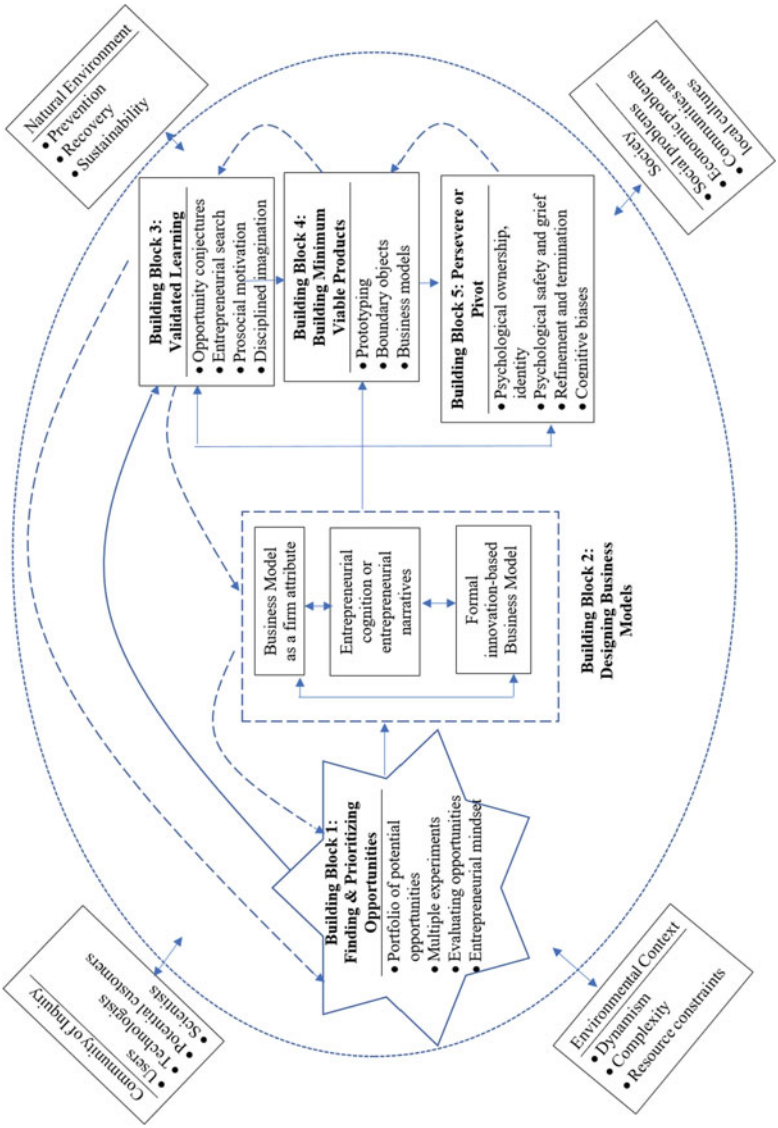

Fig. 3.1 Building a startup model by combining practitioner knowledge with current and future academic research (Adapted from Shepherd & Gruber, 2020)

about the attractiveness of the potential opportunity at the center of the startup process. This overoptimism and overconfidence often lead entrepreneurs to make mistakes that require a challenging "restart" in an alternative market domain (Blank, 2013). Indeed, one estimation is that 70% of all new ventures have to perform such a pivot (Tal-Itzkovitch et al., 2012). This emphasis on the importance of finding and prioritizing opportunities reflects how many startups explore multiple market opportunities before deciding on their target market. Those startups that identify many potential opportunities before choosing to exploit one tend to perform better than those that identify fewer potential opportunities. The Market Opportunity Navigator provides an important contribution to the initial stage of the lean startup process by enabling an entrepreneur to generate a portfolio of potential opportunities. The entrepreneur then chooses the most promising potential opportunity upon which he or she designs a business model, as depicted in Fig. 4.1.

While scholars have explored aspects of the Market Opportunity Navigator, we still need to address several remaining issues. Although we have vital insights into opportunity identification (see Chapter 1), many important questions arise from recognizing that entrepreneurs identify a set of opportunities, learn in parallel, and select the "best" opportunity from the consideration set. In particular, after identifying multiple opportunities, entrepreneurs may seek to understand the relative attractiveness of these opportunities and consider the different levels of uncertainty associated with each opportunity. When entrepreneurs exploit multiple market opportunities, their early decisions can enhance their ventures' agility later (Gruber & Tal, 2017). The early decisions that can enhance agility include picking a brand name that could fit several markets, hiring employees with more flexible human capital, and so on.

Furthermore, identifying a portfolio of opportunities allows entrepreneurs to engage in multiple experiments simultaneously. Indeed, in highly uncertain contexts, entrepreneurs need to generate multiple opportunities to probe the future. To learn from multiple simultaneous experiments in an uncertain environment, entrepreneurs make many relatively small investments in each potential opportunity (i.e., each probe or real option). This collection of small investments limits the downside loss from potential opportunities that do not pan out but provide considerable upside for the potential opportunities that show promise. Entrepreneurs stage investments in these potential opportunities (in their portfolios) so they can terminate those that do not show

promise (from hypothesis testing) and redeploy resources to promising potential opportunities (based on hypothesis testing). Although it is easier to imagine this portfolio of potential opportunities approach (i.e., a real options reasoning approach) in established firms, entrepreneurs may need to consider developing and using a portfolio of opportunities in their independent startups. This approach can facilitate adaptation to the external environment. For example, startups with broader portfolios of customers engage in more business-model changes and changes of a greater degree (Denoo et al., 2018). These business-model changes are often critical for startup performance in highly uncertain environments.

An essential step in the Market Opportunity Navigator is to evaluate the focal consideration set's potential opportunities and choose the most promising one. This choice depends on entrepreneurs' assessments of opportunity attractiveness, and entrepreneurs' assessments of opportunity attractiveness depend on their experience. Therefore, entrepreneurs with different backgrounds are likely to conduct different types of experiments to test their portfolios of potential opportunities.

Finally, in addressing the "where to play" question, the Market Opportunity Navigator is consistent with the notion of "entrepreneurial mindset." For example, Hitt et al. (2001, p. 488) explained that "those with an entrepreneurial mindset passionately seek new opportunities (entrepreneurship). However, they also pursue only the best opportunities and then pursue those with discipline (strategic management)." Therefore, by understanding how startups use the Market Opportunity Navigator to engage in lean learning cycles, we gain a deeper understanding of the entrepreneurial mindset and strategic entrepreneurship and how entrepreneurs can develop their cognitive flexibility to adapt their startups to external environmental changes.

Building Block 2: Designing Business Models

While the Market Opportunity Navigator helps entrepreneurs determine *where* to play, to develop viable new ventures, entrepreneurs also need to understand *how* to play in their current context. Designing a business model is a crucial steppingstone in the startup process. A business model makes explicit assumptions about the respective startup in the form of a framework. This framework provides the basis for entrepreneurs to form venture-creation hypotheses that they can then test. Indeed, the design of a business model presents a "leap of faith," a leap of faith that

the respective startup can solve the focal customer problem by offering a product or service that delivers value to customers (Osterwalder & Pigneur, 2010) and other stakeholders, including the startup's owners. From this leap of faith, entrepreneurs employ the lean startup framework's validated-learning process to rapidly and cheaply test hypotheses and use the information from these tests to refine or substantially change their business models (Blank, 2013).

Therefore, business models are an integral aspect of the startup process for a number of reasons. First, from the perspective that business models represent an attribute of the firm (e.g., Baden-Fuller & Haefliger, 2013), such as Osterwalder and Pigneur's (2010) Business Model Canvas, business models can help to explain to audiences (and self) how and why the startups' activities create value. The business model likely impacts the schema entrepreneurs use when attending to, interpreting, and narrating business models and vice versa, to which we now turn.

Second, from a cognitive perspective, business models involve the "cognitive structures that consist of concepts and relations among them that organize managerial understanding about the design of activities and exchanges that reflect the critical inter-dependencies and value-creation relations in their [entrepreneurs'] firms' exchange networks" (Martins et al., 2015, p. 105). These cognitive imprints of the initial business model of the startup explain how business-model innovation emerges and persists over time. Of course, a cognitive perspective of business models is not restricted to a single entrepreneur's mind but can involve founding teams, early employees, and other stakeholders. This collective cognition can have a major impact on the development of opportunities (Chapter 2) and the startup of a new venture (this chapter).

Third, it is important to consider a narrative perspective of business models. *Narratives* are stories that offer "temporally sequenced accounts of interrelated events or actions undertaken by characters" (Martens et al., 2007, p. 1108). Narratives help entrepreneurs acquire resources, make sense of failure, and influence potential customers' narratives. Understanding business models' narratives provides insights into the sensemaking process, the identification of potential stakeholders, and the development of potential opportunities tied to business-model co-construction by entrepreneurs and potential stakeholders.

Finally, business-model innovation can enhance startup progress (Denoo et al., 2018) and performance (Cucculelli & Bettinelli, 2015; Zott & Amit, 2007). Business-model innovation refers to innovating "a

company's system of interconnected and interdependent activities that determines the way the company 'does business' with its customers, partners and vendors" (Amit & Zott, 2012, p. 42). From a cognitive perspective, analogical reasoning and conceptual combinations can lead to business-model innovation. Analogical reasoning involves applying existing knowledge structures from a familiar domain to a new domain, which can enhance business-model innovation by reconceptualizing the familiar so that new relationships and interdependencies between the elements of a business model emerge (Martins et al., 2015). Entrepreneurs can also use combinations of existing business-model concepts to alter the focal concept's attributes, which can lead to business-model innovation through "incorporating attributes or structures from a wide range of concepts to modify a target concept, so that fundamentally new attributes, unavailable in either preexisting concept, can emerge" (Martins et al., 2015, p. 112).

Building Block 3: Engaging in Validated Learning

A startup's initial business model represents a series of hypotheses that the focal entrepreneur needs to test and validate. Entrepreneurs can apply the validated-learning approach to nine key elements of startups. The validated-learning approach is "the process of demonstrating empirically that a team has discovered valuable truths about a startup's present and future prospects" (Ries, 2011, p. 38). Therefore, entrepreneurs need to follow the scientific method by explicitly stating their hypotheses about their business models and then use experiments to test these hypotheses as part of the validated-learning process. The scientific method requires that entrepreneurs to be open to the possibility that their experiments will disconfirm their hypotheses. Entrepreneurs can then use the information from disconfirmed hypotheses to develop new hypotheses for subsequent testing. Building on the importance of an opportunity's market attractiveness, learning involves testing the assumptions about a new venture's value proposition, customer segments, and channels to reach customers. Specifically, entrepreneurs engage in testing to primarily address the following four questions: "(1) Do customers recognize that they have a problem you are trying to solve? (2) If there was a solution, would they buy it? (3) Would they buy it [the solution] from us? (4) Can we build a solution for that problem" (Ries, 2011). The validated-learning approach

ensures that entrepreneurs do not skip Questions 1–3 to focus solely on building a solution (Question 4).

These notions of experimenting for validated learning require us to think more deeply about several issues. First, entrepreneurs can form hypotheses and test them, but they must be able to interpret the results. However, they face several challenges with interpreting test results. Specifically, while entrepreneurs form hypotheses about their potential opportunities, they (as all people) tend to engage in confirmatory search (e.g., see Chapter 2). The problem with entrepreneurs engaging in confirmatory search is that it often leads to poor decision making. Indeed, adherence to the scientific method helps entrepreneurs counter confirmation bias. To overcome confirmation bias, entrepreneurs need a mindset toward skepticism (i.e., to hold doubt) about their hypotheses' veracity until empirical testing either erodes sufficient doubt such that a hypothesis can be accepted or provides information sufficient to reject it. However, we note that avoiding confirmation bias is easier said than done.

There could be (a few) circumstances in which a belief model of hypothesis testing may have advantages over the scientific method's skepticism. For example, individuals may only be able to pursue radical opportunities by having faith in their conjectures. This confirmation approach to hypothesis testing is more a process of sensemaking than the scientific method. Sensemaking involves "the ongoing retrospective development of plausible images that rationalize what people are doing" (Weick et al., 2005, p. 409). Unlike the scientific method, which focuses on revealing the truth, the belief model of hypothesis testing (for startups) is about enabling entrepreneurs to build an account of their experiences in a way that informs subsequent actions. Therefore, through this belief model of hypothesis testing, a startup (i.e., its business model) becomes more plausible as the focal entrepreneur takes actions and makes sense of those actions. Indeed, startups become more plausible when "they tap into an ongoing sense of the current climate, are consistent with other data, facilitate ongoing projects, reduce equivocally, provide an aura of accuracy and offer a potentially exciting future" (Weick et al., 2005, p. 415). Indeed, we already know that narratives impact sensemaking (and vice versa).

Second, entrepreneurs' empathic judgment can inform more instructive hypotheses about their startups and test these hypotheses more effectively. Indeed, entrepreneurs form hypotheses to test potential stakeholders' responses to the current problems and solutions that underlie

their startups' business models. Entrepreneurs with greater empathic accuracy are likely more effective at noticing social problems and generating possible solutions to those problems by formulating and testing hypotheses than entrepreneurs lower in empathic accuracy (McMullen, 2015). *Empathetic accuracy* refers to entrepreneurs' capability to estimate others' preferences to form accurate expectations of how various stakeholders will respond to their business models. In this way, entrepreneurs with high empathetic accuracy (vis-à-vis those with low empathic accuracy) likely differ in their generation of hypotheses, search for information, approach to hypothesis testing (belief or skepticism), and interpretation of the results from their hypothesis tests. Similarly, detecting human suffering or environmental degradation can stimulate entrepreneurs' prosocial motivation—the desire to help others—and impact their startups' business models. Differences in entrepreneurs' prosocial motivation likely impact the validated-learning process by directing attention and resources to those issues that have the greatest potential to help others.

Third, as described above, there is likely heterogeneity in how entrepreneurs form hypotheses about the veracity of their startups' business models and how they test those hypotheses. Indeed, entrepreneurs likely vary in their engagement of disciplined imagination to form and test hypotheses about their startups. The *discipline* aspect of disciplined imagination involves the consistent application of selection criteria to test a hypothesis. The *imagination* aspect introduces diversity to problem statements, thought experiments, and selection criteria for learning about the veracity of a startup's business model. Recognizing the use of disciplined imagination in forming and testing business-model hypotheses, we challenge the notion that entrepreneurs' hypothesis testing is only possible through interactions with the external world. Abstract hypothetical scenarios that serve as imaginary experiments can be a cheap and rapid means of testing entrepreneurs' hypotheses to improve their startups' business models.

Building Block 4: Building Minimum Viable Products

As detailed above, experiments are central to the lean startup framework. An experiment is "more than just a theoretical inquiry; it is also a first product" (Ries, 2011, p. 63) (see Fig. 4.1). That is, for hypothesis testing, an entrepreneur may need to develop and present his or her startup's first product. An important question for entrepreneurs is how

much time, energy, and other resources should be invested in building this product for hypothesis testing? The lean startup framework's answer is "just enough" investment to offer a product that facilitates exchange and learning. Specifically, entrepreneurs need to build minimum viable products (MVPs). An MVP is a "version of the product that enables a full turn of the build-measure-learn loop with a minimum amount of effort and the least amount of development time" (Ries, 2011, p. 77). Therefore, an entrepreneur should build and present a first product that has only what he or she hypothesizes to be the critical features of the envisioned product and is sufficient to test that hypothesis quickly. This minimalist approach to experimenting is appropriate because under conditions of high uncertainty, "no amount of design can anticipate the many complexities of bringing a product to life in the real world" (Ries, 2011, p. 90). With an MVP, an entrepreneur aims to learn and use that learning to improve his or her startup's business model. Therefore, adding features to an MVP that do not facilitate learning is a waste of resources. Although there are some challenges with building an MVP—for example, legal issues, fears about competitors, branding risks, and impact on morale—MVPs are critical to reducing the risks associated with starting a new venture.

The notion of prototyping can provide insights into the *minimum* element of MVPs. Prototyping refers to "designers' visualization and materialization skills, which they use to make intangible insights, ideas, and concepts tangible, sharable and understandable" (Calabretta & Kleinsmann, 2017, p. 293). A prototype is below the minimum of an MVP when it fails to make intangible insights, ideas, and concepts tangible, sharable, and understandable to hypothesized stakeholders. In contrast, when a prototype makes a potential opportunity tangible, sharable, and understandable to stakeholders, then the prototype is an MVP and has served its purpose as a vehicle for learning. Although we often think of MVPs as three-dimensional objects, they can include sketches, simulations, and thought experiments. However, entrepreneurs need to recognize that what is sharable and understandable to one stakeholder group may not be so for a different stakeholder group. Therefore, entrepreneurs may need to create different versions of their MVPs for different target audiences.

MVPs are boundary objects. Recognizing MVPs' role as boundary objects can help entrepreneurs formulate and make the most of their MVPs. This role as a boundary object is important because it can be difficult to transfer knowledge across boundaries, such as the boundary

between an emerging startup and its stakeholder groups (e.g., potential customers). A *boundary object* is an artifact that provides a bridge connecting facilitating the flow of information to enhance learning. Boundary objects can take many different forms but include software programs, strategy tools, and narratives. Boundary objects likely facilitate validated learning when they (1) provide a shared language for two parties to exchange information with each other, (2) help both parties learn about their differences, and (3) provide a means for the parties to work together to transform knowledge (Carlile, 2002). That is, entrepreneurs can use boundary objects across the borders between startups and their various community of inquiry members (e.g., potential stakeholders; see also Chapter 2).

Finally, while entrepreneurs can use their MVPs as boundary objects, they can also use their business models as boundary objects. Entrepreneurs can use their business models as boundary objects to facilitate communication and learning from outsiders. For example, a business model can act as a market device—"the material and discursive assemblage that intervenes in the construction of markets" (Muniesa et al., 2007, p. 2). In doing so, the business model can provide a flexible mix of narratives to communicate with different stakeholders but is sufficiently robust to represent a common source of information and knowledge across boundaries. Indeed, formal statements about a startup's plans provide a boundary object to establish a common language across potential stakeholders to learn what the different stakeholder groups understand. This representation of stakeholder knowledge enables entrepreneurs to learn about differences between potential stakeholder groups. This information also allows potential stakeholders to transform their knowledge (consistent with a boundary object). Therefore, entrepreneurs can use MVPs as boundary objects to learn and thereby advance their startups.

Building Block 5: Learning Whether to Persevere with or Pivot from the Current Course of Action

Entrepreneurs engage in the validated-learning process. This process involves forming hypotheses, experimenting to test those hypotheses, and learning from hypothesis testing to form subsequent hypotheses about a startup. This trial-and-error process of learning involves mostly local search and leads to incremental changes (see Chapters 1 and 2). While an entrepreneur can persevere with his or her startup's current business

model by making incremental changes to improve it, the entrepreneur may learn (or come to suspect) that these incremental changes are not sufficient to advance the startup. When incremental changes do not seem to be providing adequate progress, the entrepreneur may decide to pivot (see Fig. 4.1). In the lean startup framework, a pivot is a deliberate, designed course correction representing a fundamentally new business model with substantially different hypotheses about the focal startup's products, strategies, and growth drivers (Ries, 2011). A successful pivot allows a startup to head in a new direction to reach a sustainable, repeatable business model that will enable the new venture to grow (see Chapter 5). The important question facing entrepreneurs engaged in the startup process is whether they should pivot or persevere. Answering this question is particularly challenging given that this decision is shrouded in uncertainty.

To determine whether to persevere or pivot, an entrepreneur can set learning milestones as triggers for accumulating information to inform this decision. These milestones test the assumptions the entrepreneur made explicit at the beginning of the startup process (e.g., feedback on a first prototype). Again, the persevere-or-pivot decision is not easy because the greater the entrepreneur's investment of creative energy and other resources into a particular business model for his or her startup, the greater the entrepreneur's sunk costs. Sunk costs make perseverance more likely and make deciding to pivot more difficult. Indeed, the lean startup framework emphasizes that entrepreneurs need courage to decide to pivot. Some entrepreneurs may be reluctant to pivot because they focus on vanity metrics (i.e., metrics that make them look good but do not reflect startup progress). Therefore, these entrepreneurs may not be aware of the need to pivot or are reluctant to do so because they are afraid they will fail and lower employee morale and stakeholder support. Indeed, Ries (2011) argued that the decision to pivot is so difficult that many entrepreneurs fail to do it to the detriment of their startups. To overcome some of these challenges, entrepreneurs can set up persevere-or-pivot meetings in advance, i.e., help entrepreneurs overcome biases associated with sunk costs and the status quo. To the extent that entrepreneurs are willing and able to pivot, they provide their startups greater resilience to mistakes, environmental uncertainty, and substantial changes in the external environment.

There are several additional challenges to making the persevere-or-pivot decision. First, information indicating the need for a pivot may

simultaneously trigger resistance to a pivot. For example, entrepreneurs likely develop psychological ownership over their startups' business models. With feelings of high psychological ownership over their startups' creative ideas, these entrepreneurs are likely highly reluctant to accept information indicating the need to pivot. Indeed, one estimation claims that less than 40% of new ventures change their business models over 10 years (Denoo et al., 2018). Overcoming this reluctance to pivot appears to require reappraising one's psychological ownership—only by detaching themselves from their current business-model formulations can entrepreneurs create the necessary space to consider and enact a pivot to a new business model.

Second, we offer caution in our discussion of the decision between persevering and pivoting. It seems that the lean startup framework's emphasis on one or the other represents a potential anti-failure bias. For example, in addition to preserving or pivoting, there is the option to terminate a venture project (some new ventures detailed in Chapter 2 chose this option). Indeed, "fail fast, fail cheaply" is part of the entrepreneurial mindset's underlying logic for managing uncertainty. Perhaps if entrepreneurs pivot enough using MVPs to test hypotheses with well-designed experiments, they will eventually "come across" a winning business model. However, to do so, they need a sufficient runway. Here, runway refers to "the amount of time remaining in which a startup must either achieve lift off or fail" (Ries, 2011, p. 63). In this way, entrepreneurs do not necessarily decide to terminate; this decision is made for them by the length of their startups' runways. Therefore, the longer the runway, the greater the stakes—that is, the greater the likelihood that a pivot will lead to a viable business model. If it does not, then the costs of failure will likely be greater (consistent with the consequences of an anti-failure bias). We need more research that considers the termination of a particular startup as a decision alternative to pivoting or persevering.

Third, scheduling persevere-or-pivot meetings informed by relevant information does not mean entrepreneurs will decide to pivot when appropriate. Indeed, entrepreneurs often persevere with a losing course of action even when confronted with information that highlights the costs of this losing course of action. Effective persevere-or-pivot meetings can provide a mechanism for entrepreneurs to reappraise their psychological ownership of their startups' creative ideas, work through needed

changes to their identities, and involve a broad and diverse array of stakeholders in the pivot decision (see Chapter 2). The cultures of emerging ventures and their entrepreneurial teams likely impact the effectiveness of these persevere-or-pivot meetings. For example, when there is a feeling of psychological safety in a venture or within an entrepreneurial team—namely, "a shared belief held by members of the team that the team is safe for inter-personal risk taking" (Edmondson, 1999, p. 354)—meeting participants are less likely to have biased decision making (e.g., less need to justify past decisions to avoid blame). Therefore, they are more likely to decide to pivot the focal new venture.

Finally, startups have different runways, and these differences can have important implications for starting up a new venture. As detailed above, Ries (2011) defined a runway as both "the number of pivots it [a startup] can still make" (p. 160) and "the amount of time remaining in which a startup must either achieve lift off or fail" (p. 160), and the runway can be extended by gaining the "same amount of validated learning at a lower cost or in a shorter time" (p. 161). When runway refers to the number of pivots that a startup can still make, then the number of pivots remaining is likely influenced by (1) the extent of refinement in each pivot; (2) the type of pivot; (3) the quality and results of hypothesis testing; (4) the cost of a pivot (including the startup's agility and past decisions that may make pivoting more costly); (5) the capacity of stakeholders to absorb pivots; (6) the number of pivots already performed; (7) the focal entrepreneur's capacity, skills, and ability to conduct and absorb pivots; and (8) the startup's on-hand resources and recommitments by stakeholders (Shepherd & Gruber, 2020). While a longer runway increases the likelihood of liftoff, it also increases the losses from that startup attempt if failure occurs.

An Overarching Perspective on the Lean Startup Framework

In the preceding sections, we discussed each of the five building blocks of the lean startup framework. From an overarching perspective, there is more for us to understand about the lean startup framework, such as the performance implications of using the lean startup framework and the contingencies (including external context) that may condition the lean startup framework's applicability and performance. However, there is some evidence on the performance benefits of the lean startup

framework and its contingencies. Specifically, one study found that a scientific approach to venture startup—consistent with the lean startup framework—leads to more successful ventures than an approach that relies on unguided activities and entrepreneurs' intuition (Gambardella et al., 2020). The lean startup framework's effectiveness appears to come from its ability to decrease the likelihood that entrepreneurs will pursue unviable business models. Indeed, a study of web-based startups found that a learning-focused, agile approach to startup creation (again, consistent with the lean startup framework) leads to relatively more successful ventures (Marmer et al., 2012).

Furthermore, it is important to understand when applying the lean startup framework may lead to worse outcomes. Several internal and external contingency factors seem relevant. For instance, Blank (2013) suggested that ample funding for a startup may decrease the need for the lean startup framework. Specifically, he noted that "when capital for startups is readily available at scale, it makes more sense to go big, fast and make mistakes than it does to search for product/market fit" (Blank, 2013, n.p.). If the availability of financial resources dampens the relationship between the lean startup approach and performance, perhaps entrepreneurs can better apply the "traditional" innovation approach to their startups. The major point is that the lean startup approach may not be highly effective for startups with high resource slack. Still, given that most startups of independent ventures (vis-à-vis startups of corporate ventures) occur in the face of resource scarcity (and even adversity), the lean startup approach is likely to be appropriate for a large number of ventures.

Beyond these internal contingency factors, we propose some conditions external to ventures. The first is that of a community of inquiry. A community of inquiry is an informal group of stakeholders that can help an entrepreneur evaluate and develop a potential opportunity (see Chapter 2). For example, one study showed how communities of inquiry help entrepreneurs develop and refine their emerging ventures through interactions involved in prototype testing (Seyb et al., 2019). The lean startup approach relies heavily on "external" participants for testing (and reformulating) hypotheses using MVPs. These community members may include potential customers, technologists, scientists, and so on. Given the importance of a community of inquiry for the emergence of a startup (see Chapter 2), differences in the groups that make up a community of inquiry likely substantially impact the startup process.

Moreover, the lean startup framework offers a way for entrepreneurs to learn under conditions of uncertainty. Although startups are typically embedded in dynamic or high-velocity environments, these environmental conditions vary on a continuum (vis-à-vis a dichotomy). Therefore, rather than assuming all startups face the same environmental conditions (because they involve entrepreneurial action), entrepreneurs need to be aware of how different environmental dimensions—more or less dynamism, more or less complexity, more or less hostility, more or less velocity—influence the lean startup process. For example, the lean startup framework is likely less effective for starting up a new venture in an environment with low uncertainty (e.g., a potential opportunity in a stable, munificent environment). Indeed, in less dynamic environments, entrepreneurs appear to be "better off pursuing a munificent approach to planning" (Gruber, 2007, p. 782).

Conclusion

This chapter discussed the building blocks of the lean startup framework. In particular, we focused on open questions regarding its application and the potential boundary conditions for making each building block more or less effective in developing a startup. In summary, our discussion suggests that our understanding of when and how the lean startup framework is best applied can be enhanced by academic research addressing the following broad topics, as summarized in Fig. 4.1:

- Future studies can investigate how startups' communities of inquiry, specifically users, technologists, potential customers, and scientists, influence the five building blocks of the lean startup framework and the outcomes of applying these building blocks for startups.
- Future studies can investigate how the environmental/industry context, the state of the natural environment, and societal developments influence the five building blocks of the lean startup framework and the application of these building blocks for startups.
- Future studies can investigate how important behavioral (e.g., entrepreneurial search, use of boundary objects, use of narratives) and cognitive (e.g., entrepreneurial mindset, empathy, prosocial motivation, psychological ownership, biases) characteristics of entrepreneurs influence the five building blocks of the lean startup

framework and the outcomes of applying these building blocks for startups.

- Future studies can investigate the interrelationships between the five building blocks of the lean startup framework and the outcomes of the interdependencies between these building blocks for startups (e.g., when entrepreneurship should move from one building block forward to the next or back to the previous).

References

Amit, R., & Zott, C. (2012). Creating value through business model innovation. *MIT Sloan Management Review, 53*(3), 41–44.

Baden-Fuller, C., & Haefliger, S. (2013). Business models and technological innovation. *Long Range Planning, 46*(6), 419–426.

Blank, S. (2013). Why the lean startup changes everything. *Harvard Business Review, 91*(5), 63–72.

Calabretta, G., & Kleinsmann, M. (2017). Technology-driven evolution of design practices: Envisioning the role of design in the digital era. *Journal of Marketing Management, 33*(3/4), 292–304.

Carlile, P. R. (2002). A pragmatic view of knowledge and boundaries: Boundary objects in new product development. *Organization Science, 13*(4), 442–455.

Cooper, A. C., Gimeno-Gascon, F. J., & Woo, C. Y. (1994). Initial human and financial capital as predictors of new venture performance. *Journal of Business Venturing, 9*(5), 371–395.

Cucculelli, M., & Bettinelli, C. (2015). Business models, intangibles and firm performance: Evidence on corporate entrepreneurship from Italian manufacturing SMEs. *Small Business Economics, 45*(2), 329–350.

Denoo, L., Yli-Renko, H., & Clarysse, B. (2018). Tweaks and pivots: The impact of customer ties on young firms' business model adaptation in an emerging industry. *Academy of Management Global Proceedings* (2018), 30.

Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly, 44*(2), 350–383.

Gambardella, A., Camuffo, A., Cordova, A., & Spina, C. (2020). A scientific approach to entrepreneurial decision making: Evidence from a randomized control trial. *Management Science, 66*(2), 564–586.

Gruber, M. (2007). Uncovering the value of planning in new venture creation: A process and contingency perspective. *Journal of Business Venturing, 22*(6), 782–807.

Gruber, M., MacMillan, I. C., & Thompson, J. D. (2008). Look before you leap: Market opportunity identification in emerging technology firms. *Management Science, 54*(9), 1652–1665.

Gruber, M., & Tal, S. (2017). *Where to play: 3 steps for discovering your most valuable market opportunities*. Pearson.

Hitt, M. A., Ireland, R. D., Camp, S. M., & Sexton, D. L. (2001). Strategic entrepreneurship: Entrepreneurial strategies for wealth creation. *Strategic Management Journal, 22*(6–7), 479–491.

Marmer, M., Hermann, B. L., Dogrultan, E., & Berman, R. (2012). *Startup genome report: A new framework for understanding why startups succeed* (Report). http://blog.startupcompass.co/pages/startup-genome-report-1. Accessed June 18, 2019.

Martens, M. L., Jennings, J. E., & Jennings, P. D. (2007). Do the stories they tell get them the money they need? The role of entrepreneurial narratives in resource acquisition. *Academy of Management Journal, 50*(5), 1107–1132.

Martins, L. L., Rindova, V. P., & Greenbaum, B. E. (2015). Unlocking the hidden value of concepts: A cognitive approach to business model innovation. *Strategic Entrepreneurship Journal, 9*(1), 99–117.

McDougall, P. P., Robinson, R. B., Jr., & DeNisi, A. S. (1992). Modeling new venture performance: An analysis of new venture strategy, industry structure, and venture origin. *Journal of Business Venturing, 7*(4), 267–289.

McMullen, J. S. (2015). Entrepreneurial judgment as empathic accuracy: A sequential decision-making approach to entrepreneurial action. *Journal of Institutional Economics, 11*(3), 651–681.

Muniesa, F., Milo, Y., & Callon, M. (2007). An introduction to market devices. *Sociological Review, 55*, 1–12.

Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: A handbook for visionaries, game changers, and challengers*. Wiley.

Ries, E. (2011). *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*. Crown Books.

Seyb, S. K., Shepherd, D. A., & Williams, T. A. (2019). Exoskeletons, entrepreneurs, and communities: A model of co-constructing a potential opportunity. *Journal of Business Venturing, 34*(6), 105947.

Shepherd, D. A., & Gruber, M. (2020). The lean startup framework: Closing the academic-practitioner divide. *Entrepreneurship Theory and Practice*. https://doi.org/10.1177/1042258719899415.

Tal-Itzkovitch, S., Gruber, M., & De Haan, U. (2012). From snipers to scanners: Market entry decisions in emerging organizations. In *Academy of Management Proceedings* (Vol. 2012, pp. 13679). Academy of Management.

Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (2005). Organizing and the process of sensemaking. *Organization Science, 16*(4), 409–421.

Zott, C., & Amit, R. (2007). Business model design and the performance of entrepreneurial firms. *Organization Science, 18*(2), 181–199.

CHAPTER 4

Managing New Ventures

Abstract The creation of new ventures and growing them into well-established organizations is the key purpose of managing new ventures. This chapter explains the 10 most essential subtopics for managing new ventures (Shepherd et al. in *Journal of Management* 47:11–42, 2021): (1) lead founder, (2) founding team, (3) social relationships, (4) cognitions, (5) emergent organizing, (6) new venture strategy, (7) organizational emergence, (8) new venture legitimacy, (9) founder exit, and (10) entrepreneurial environment. This chapter ties these "managing" subtopics into the three major stages of the entrepreneurial process—co-creating, organizing, and performing. The framework provides a cohesive story of managing new ventures.

Once an entrepreneur forms an opportunity belief (Chapter 1), the entrepreneur can exploit the potential opportunity through an existing organization or create a new organization. In this chapter (and the book more generally), we are focused on new venture creation. New venture creation is important. New ventures (1) are the source of most new jobs generated in an economy; (2) create new industries and markets; (3) develop and introduce innovative products and services; and (4) provide new solutions to economic, social, and environmental problems.

This chapter is based on Shepherd et al. (2021). The assertions that we make in this chapter are justified, cited, and referenced in Shepherd et al. (2021).

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However, most management research has assumed a well-established organization as the starting point of their theorizing. This management research has focused on explaining differences among organizations regarding various attributes, forms, and outcomes. Research on new venture creation and management to produce well-established organizations has increased our understanding of the antecedents of many assumptions prevalent in extant management research.

However, current research does not provide an accumulated body of knowledge to connect the creation of new ventures to their development into well-established organizations. Therefore, this chapter builds on a review paper on starting a new organization, which organizes the information on this process provided by extant research into an overarching framework (Shepherd et al., 2021). In conducting a systematic review of the literature, Shepherd et al. (2021) inductively categorized papers primarily on the topic of new ventures into 10 categories: (1) lead founder, (2) founding team, (3) social relationships, (4) cognitions, (5) emergent organizing, (6) new venture strategy, (7) organizational emergence, (8) new venture legitimacy, (9) founder exit, and (10) entrepreneurial environment. We present these categories as an overarching framework in Fig. 5.1.

As illustrated in Fig. 4.1, the major stages of the overarching framework are (1) co-creating a startup, (2) organizing a startup, and (3) performing a startup. The *co-creating stage* is typically initiated by a lead entrepreneur forming a founding team. The lead entrepreneur and the entrepreneurial team use social relationships and cognitions to co-construct the new venture's potential opportunity with its community of inquiry (see Chapters 2 and 3). The community of inquiry is an informal body of (potential) stakeholders with a shared interest in the new venture's potential opportunity. The *organizing stage* involves the new venture establishing operations as well as formulating and enacting a strategy. In this stage, the entrepreneur attempts to establish processes and systems that can facilitate legitimacy, organizational emergence, and founder exit. The *performing stage* builds on the previous stages to generate outcomes. These new venture outcomes feed back into the other stages of the model. All stages of the new venture–management process are influenced by and influence the external environment.

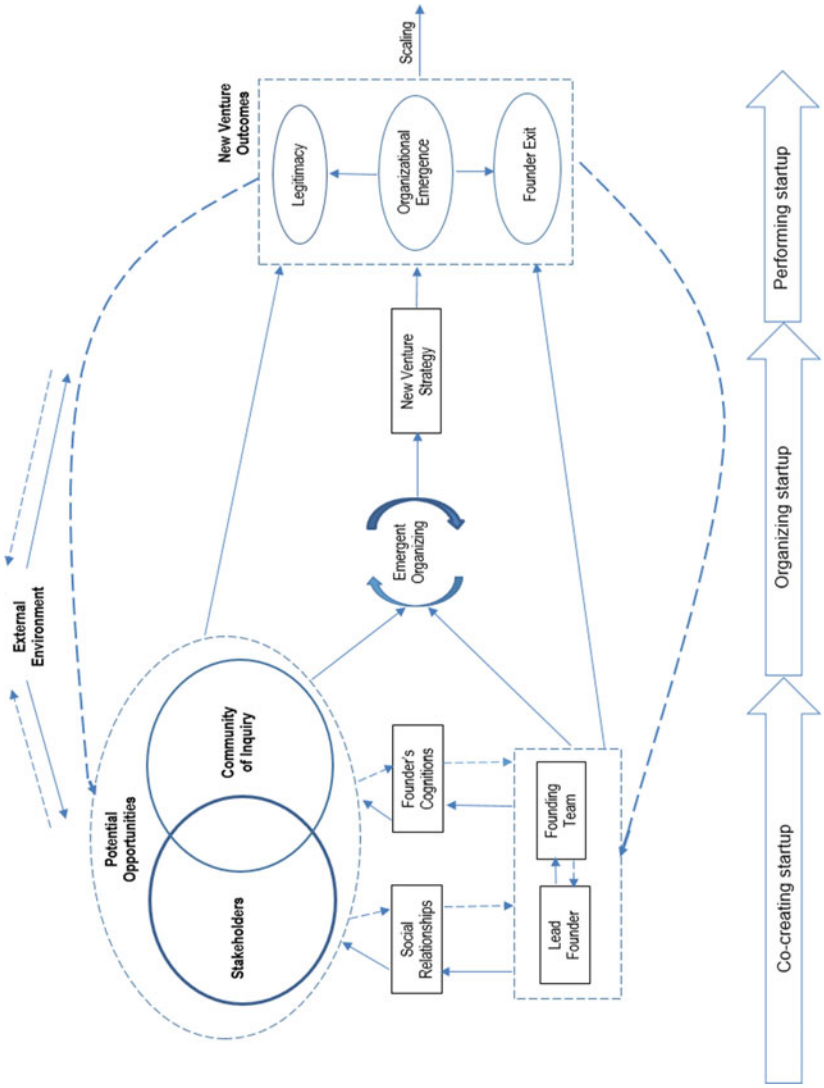

Fig. 4.1 Illustration of prior and proposed research on starting a new venture (Adapted from Shepherd et al., 2021)

Co-creating a Startup Venture

Lead Founder and Starting a New Venture

A *founder* is a person who creates a new venture—that is, brings into existence a new organization. Even in a new venture created by a team, individual founder attributes are important for explaining new venture creation. The lead founder is the founding team member most responsible for managing the startup process (if there is only one person, he or she is solely responsible for the early stages of new venture creation; there is also the possibility of two or more lead entrepreneurs in a venture). Founders differ in their experience, employment positions before new venture creation, entrepreneurial imaginativeness, motivation, emotional responses, and enduring characteristics. These differences among founders influence new venture creation.

First, founders vary in their experience, which impacts the startup process. Specifically, a founder with *managerial experience*—a founder who previously operated a business—has an advantage in new venture creation, especially in pursuing opportunities in highly dynamic external environments. In contrast, a founder with industry experience—a founder who previously worked in the same industry as his or her new venture—has an advantage in pursuing opportunities in less dynamic external environments. Entrepreneurial experience—when a founder has previously founded one or several ventures—is important in contexts where entrepreneurs need to make quick decisions to commit their ventures to action. More generally, new ventures created by founders with more entrepreneurial experience perform better than those created by founders with less entrepreneurial experience. Interestingly, prior entrepreneurial experience benefits new ventures regardless of whether that experience was a success or a failure.

However, a founder's experience is not always a blessing for his or her new venture. For example, a founder's experience with a particular product market, geographic market, or resource can focus his or her attention on those domains, causing cognitive or attentional blindness to other opportunities and threats sourced beyond those domains (see Chapter 1). Similarly, while individuals returning from another country to their home country to start a business have different experience from those who have never left their home country, entrepreneurs with this experience abroad tend to complete the first stage of the entrepreneurial process more slowly. That is, those with experience abroad advance from

conceptualizing a potential idea to launching a new venture more slowly than individuals without such experience (Qin et al., 2017).

Second, employees can create new ventures. Employee entrepreneurship involves "the intra-industry founding of a new venture by an individual who previously worked for an incumbent firm [a firm in the same industry as the new venture]" (Ganco, 2013, p. 666). A new venture can benefit from employee entrepreneurship when there is considerable overlap between the knowledge its founder acquired from his or her previous employer and the new venture's knowledge domain. It seems that the greater the overlap, the more knowledge the entrepreneur can transfer to the new venture. For example, the entrepreneur may transfer effective routines and draw on knowledge gained at his or her previous employer to recognize subsequent potential opportunities. However, although it seems that star performers would leave their jobs to found new ventures as a means to make the most of their human capital, it is not so simple. The creation of a new venture by a star performer depends on the star's compensation at work. High-earning individuals are less likely to leave their jobs than low earners. Still, they are more likely to leave when their employers have low compensation-dispersion systems. If they leave their current jobs, these star performers are more likely to start a new venture, whereas non–star workers are more likely to seek employment elsewhere (Campbell et al., 2012; Carnahan et al., 2012). Furthermore, those leaving employment are more likely to start a new venture than seek employment elsewhere when they have more complex knowledge (Ganco, 2013). Knowledge is complex when there are many interdependencies between its components.

Third, people with entrepreneurial imaginativeness are more likely to create a new venture. Entrepreneurial imaginativeness refers to "a cognitive skill that combines the ability of imagination with the knowledge needed to stimulate various task-related scenarios in entrepreneurship" (Kier & McMullen, 2018, p. 2266). This cognitive skill is useful in new venture creation because it stimulates the creativity necessary to identify or construct potential opportunities. Potential opportunities can then be tested and refined as the basis for a new venture (see Chapters 2 and 3). Some of the knowledge needed to create various entrepreneurial-imaginativeness scenarios likely comes from the managerial, industry, entrepreneurial, and employment experience detailed above.

Fourth, an individual needs to be motivated to create a new venture. This motivation for new venture creation can be manifest in a founder's

identity and passion. Founders with a higher entrepreneurial identity aspiration—"a possible but unrealized future entrepreneurial self"—engage in more nascent entrepreneurial behaviors, particularly founders who have prior startup experience compared to those who lack such experience (Farmer et al., 2011, p. 246). There are three ideal types of entrepreneurial social identity, which help explain those who create new ventures (Fauchart & Gruber, 2011):

> (a) The *Darwinian identity* reflects founders who consider themselves unique, put their self-interest at the core of the new venture, pursue private goals, and use a conventional business logic to run the new venture; (b) the *Communitarian identity* reflects founders who focus their actions based on a proximal social group and have a community-driven logic; and (c) the *Missionary identity* reflects founders who have a highly inclusive notion of stakeholders, focus on the society-at-large, and have a mission-driven logic. (Shepherd et al., 2021, pp. 15–16)

Founders can also have passion that motivates new venture creation. Entrepreneurial passion is an "intense positive inclination towards entrepreneurial activities salient to an individual's identity.... Passion [is not conceptualized] as a trait but rather as an affective and motivational phenomenon that an entrepreneur experiences when engaging in identity relevant activities" (Murnieks et al., 2016, p. 470). This passion motivates an individual to perform new venture–creation tasks. Indeed, entrepreneurial passion can increase an individual's entrepreneurial self-efficacy, strengthening his or her intention to start a new venture.

Fifth, positive affect can positively influence an individual to new venture creation. Specifically, positive dispositional affect facilitates creativity, and creativity generates innovative activities useful in the new venture–creation process. The positive relationships between positive affect and creativity and between creativity and innovation radicalness are strengthened in more dynamic environments (Baron & Tang, 2011). *Positive dispositional affect* refers to a founder's general tendency to experience positive emotions, such as enthusiasm and excitement. Dispositional affect is different from state affect; state affect is influenced by current conditions. Dispositional affect is relatively stable across time, contexts, and situations. However, a founder's positive dispositional affect may not always lead to positive venture outcomes. For example, one study proposed that while increases in positive dispositional affect

improve entrepreneurs' opportunity recognition, opportunity evaluation, and entrepreneurial decision making, they only do so to a certain point, after which further increases in positive dispositional affect may hamper performance on these activities (Baron et al., 2012).

Finally, individuals' personalities influence who starts up a new venture. Specifically, the positive psychological traits of hope, optimism, and resilience are positively associated with founders' transformational leadership, which in turn facilitates new venture performance. The positive psychological trait of *hope* refers to the belief that one has a path to a desired outcome and believes one has the agency to progress down that path. *Optimism* refers to a generalized belief that positive outcomes will materialize. *Resilience* refers to maintaining positive functioning while facing adverse events. These positive psychological traits can lead to *transformational leadership*, which can in turn enhance new venture performance through the following mechanisms: (1) *idealized influence*, or when a founder provides an example that followers try to emulate; (2) *inspirational motivation*, or when a founder provides a clear vision of a positive future that motivates followers; (3) *intellectual stimulation*, or when a founder helps followers make the most of their potential; and (4) *individualized consideration*, or when a founder supports followers' needs for personal growth (Peterson et al., 2009). Bundling founders' personalities with their resources and the environment helps explain the new venture–creation process. For example, founders' tendencies to value "change, the new, and the different" (i.e., novelty) can enhance new venture performance, especially for ventures that are younger and smaller (Ling et al., 2007, p. 679).

Founding Team and Starting a New Venture

A *founding team* is a collective that creates a new venture. Founding teams differ in their experience, diversity, presence of prior shared experience, and structural form, which impact new venture management.

First, founding teams differ in the level and nature of their experience. Founding teams' experience can influence new venture performance. For example, for newly created venture capital firms, founding teams that are more experienced in venture capital, senior management, and consulting are more successful than their more inexperienced counterparts (Walske & Zacharakis, 2009). Moreover, in assessing new venture teams, senior venture capitalists emphasize, in order of importance, teams' industry

experience, management education, and leadership experience (Franke et al., 2006). Indeed, founding teams' entrepreneurial and management experience are important because they enable these teams to identify more opportunities. Additionally, teams with greater competence in *financial management*—namely, skills, experience, and ability to manage monetary constraints—are better able to create and grow new ventures. Furthermore, new venture teams with greater *technological experience* make the most of their diverse industry-experience and external sources of knowledge to identify a greater variety of potential opportunities.

Second, founding teams' diversity facilitates new venture creation. For example, teams diverse in educational backgrounds benefit new ventures. Indeed, venture capitalists value educational heterogeneity, with the proviso that at least one of the members on a team has an education in management. Despite the importance of diversity within founding teams, it appears that founders' biased decision making (e.g., overoptimism and self-serving attributions) leads them to choose cofounders similar to themselves, thus creating relatively homogenous founding teams. However, we also note that more diversity in founding teams might not always benefit new ventures. For example, the dispersion of a founding team's cognitive ability has an inverted U-shaped relationship with startup performance. That is, teams with members of both high and low ability outperform teams in which all members have low ability or all members have high ability because some entrepreneurial tasks require high ability (e.g., opportunity recognition and problem solving) while other tasks are better performed by lower-ability team members (e.g., execution-oriented tasks) (Hoogendoorn et al., 2017). While diversity enhances performance in competitive contexts, it does not appear to do so in cooperative contexts or in pursuit of innovation strategies. In contexts that reward cooperation and innovation, technically focused management teams perform better than functionally diverse teams (Eesley et al., 2014).

Finally, founding team members with prior shared experience can manage more of the challenges in new ventures. Teams in which some of the members have previously worked together in the same company have shared knowledge. This shared knowledge promotes a shared understanding that facilitates implementation speed and enhances new venture performance. However, this benefit from prior shared experience within a founding team is diminished when that shared experience is for a task or industry different from those of the new venture. Moreover, the benefits of teams' prior shared experience diminish over time as founding

teams begin to generate their own shared experience in their current new ventures. Relatedly, founding teams with shared prior experience can create more internally consistent human-resource value systems for their new ventures that facilitate shared collective perceptions, attitudes, and behaviors among new venture members. Founding teams with prior shared experience are also more likely to pursue exploration strategies. At the same time, those with members who have worked in diverse companies are more likely to engage in explorative activities. However, research has also shown that teams with prior shared experience and heterogeneous experience show the highest growth (Beckman, 2006).

One potential mechanism underlying the benefits of a team's prior shared experience is a transactive memory system. A *transactive memory system* is a shared understanding of which team members have specific expertise that the team can call on when needed—that is, knowing "who knows what" (Zheng, 2012). A founding team's transactive memory system can enhance new venture performance, especially when there is *task similarity*, task relatedness related, and *intrateam trust*. A founding team's transactive memory system can also lead the new venture to develop an entrepreneurial orientation. *Entrepreneurial orientation* refers to a new venture's strategic orientation involving the propensity to be innovative, risk taking, and proactive. The trust between founding team members, the organizational structure's organic nature, and the environment's dynamism magnify the positive relationship between a founding team's transactive memory system and the respective venture's entrepreneurial orientation.

Social Relationships and Starting a New Venture

A *social relationship* is a positive interpersonal relationship between two or more people. Social relationships are reflected in (1) a founder's social network, (2) a founder's social capital, (3) a founder's use of his or her network to access intangible resources, and (4) a new venture's interpersonal interactions.

First, founders' relationships are embedded in social networks, which vary across founders and founding teams. Founders' networks involve *referrers*—individuals or organizations that connect entrepreneurs to potential resource providers. Potential resource providers are the owners of resources that new ventures need. Specifically, a venture is more likely to obtain the resources it needs when (1) there is a strong relationship

between the referrer and the resource owner, especially when there is a strong relationship between the founder and the referrer, and (2) both the referrer and the resource owner have considerable prior knowledge of the venture's technology or product. Interestingly, the resource owner's prior knowledge of the venture's technology or product compensates for weak relationships between the founder and the referrer and between the referrer and the resource owner—the relationship facilitates action.

It is possible to consider entrepreneurial networking as more than just a facilitator of entrepreneurial action. Specifically, entrepreneurial networking is intentional behavior under high uncertainty. It includes assessing the use of one's existing network of relationships, negotiating precommitments with stakeholders, and continually changing the set of relationships supporting the focal venture. Although it would seem that the larger a founder's network, the better it is for his or her venture, there are diminishing returns to accessing funding, information, and business contacts from increases in network size. Over and above a network's size, relationship quality, trust, and commitment help a new venture access resources under favorable terms. Indeed, both the size of a social network and the strength of the relationship between founders and potential funders relate positively to progress in new venture creation. Also, founders' networks that are heterogeneous and high in status generate benefits for their new ventures. A *heterogeneous network* is a set of relationships that provides a new venture access to diverse information and varied resources. A *high-status network* is a set of relationships that signals a new venture's quality to others.

Second, new ventures can benefit from their founders' social capital. This social capital can have a variety of sources. *Social capital* refers to the goodwill created through social relationships, and some founders have more social capital than other founders. For example, founders who are returning migrants or have experience with multinational enterprises typically have higher social capital than founders without such global-market experience. Moreover, entrepreneurs have higher social capital with their families than with other groups and individuals. Therefore, family involvement in the governance of early-stage new ventures is associated with a higher probability of raising debt funding and with increasing the amount of funding founders can obtain. However, founders often seek initial funding from their families rather than from other investors when they anticipate low family interference in their businesses. This funding strategy shows that there are benefits (e.g., easier access to capital) and costs (e.g.,

potential interference) that arise from relying on family relationships when creating a new venture. Indeed, when entrepreneurs involve their families to gain financial capital, the scope of their startup activities is narrowed. In contrast, when entrepreneurs involve their families to access social capital, the scope of their startup activities is broadened, and even more so when their families are highly cohesive (Edelman et al., 2016).

Third, founders' social relationships can provide new ventures intangible resources. Close relationships can provide founders entrepreneurial inspiration, thereby enhancing new ventures' chances of survival. This benefit of founders' entrepreneurial inspiration is magnified for those who take over an existing business, invest considerable time in their ventures, and/or have low entrepreneurship experience. Social relationships can also be a source of *guidance* as founders often use outsiders' assistance when starting their ventures. This guidance increases long-term growth to a point, after which more guided preparation reduces long-term growth. A similar form of guidance is when venture advocates help founders. Venture advocates are local potential stakeholders who assist founders in their new ventures' developmental stages, facilitating new ventures' launch and increasing their survival chances.

Finally, boards of directors can generate benefits for new ventures. Specifically, a new venture can establish a diverse alliance portfolio more quickly when its board of directors is heterogeneous (i.e., directors' backgrounds and networks are diverse), multiplex (i.e., directors have multiple types of relationships), and symmetrical (i.e., there is an even distribution of influence within the board of directors) (Beckman et al., 2014). Moreover, a new venture can benefit from its board of directors expanding the founding team's network. This enhanced network of the board and founding team can generate relational pluralism. *Relational pluralism* refers to a new venture's reliance on others to derive meaning and the impetus for action. However, when central investors dominate a board, the benefits of board members' social relationships for the focal new venture are undermined.

Cognitions and Starting a New Venture

Founders' cognitions are the mental processes underlying the co-construction of potential opportunities to start and manage a new venture. Founders' cognitions can be driven by their enduring characteristics and by their current situation. In turn, these cognitions can lead

to biased decision making, enhanced identification of potential opportunities, and increased intentions to engage in entrepreneurial action.

First, founders' enduring characteristics drive their cognitions about their new ventures. One enduring characteristic of founders is the intelligence critical for new venture success, called *successful intelligence*. When combined with entrepreneurial self-efficacy, successful intelligence can lead to quick decisions and actions that promote new venture performance. This intelligence for new venture progress involves three different types of intelligence: (1) practical intelligence relates to founders' skills, dispositions, and tacit knowledge and the application of them to solve everyday problems; (2) analytical intelligence is founders' capacity to learn quickly, remember, and retrieve information; and (3) creative intelligence is reflected in founders' generation of high-quality novel ideas to meet current needs (Baum & Bird, 2010).

Cognitive style is another enduring attribute of founders that influences their cognitions about their new ventures. *Cognitive style* is a "higher-order heuristic that individuals employ when they approach, frame and solve problems" (Brigham et al., 2007, p. 31). People with different cognitive styles are better suited for different entrepreneurial tasks. Founders with a more intuitive cognitive style are more likely to observe signals and process information synthetically and holistically. These intuitive entrepreneurs report high confidence in identifying and recognizing opportunities. In contrast, founders with an analytical cognitive style process information in a more linear and sequential way. Those with an analytical cognitive style have greater confidence in assessing, evaluating, planning, and marshaling a new venture's resources (Kickul et al., 2009).

Second, founders' thinking about the future to plan the next steps for the new venture can enhance venture performance. Founders who engage in formal business planning facilitate entrepreneurial judgment because doing so helps founders (1) be more selective in their decision making to focus on a smaller set of new venture–success factors, (2) become more decisive to quickly make venturing decisions, and (3) have a greater conviction in their entrepreneurial judgment.

Third, founders' cognitions can lead to biased decision making. Specifically, new venture managers who are founders are likely to be more overconfident than non-founder new venture managers. *Overconfidence* refers to an individual's overestimation of his or her ability to deliver positive outcomes and is often based on this individual not knowing what he

or she does not know. Founders' overconfidence can be detrimental to new venture progress. Founders are also often overly optimistic when forecasting their ventures' survival chances. While confidence in one's capabilities to successfully perform entrepreneurial tasks helps explain who creates new ventures, it can also lead to ventures' downfall.

Founders can also *escalate commitment* (through additional investments of money, time, and other resources) to a venture on a failing course of action, which is a biased decision. For example, while fear leads founding teams to quit their failing ventures, hope drives founding teams to escalate their commitment to such ventures. Interestingly, when founders feel both hope and fear, hope seems to "trump" fear, leading founding teams to escalate commitment to failing ventures. Escalating commitment to a failing venture can make failure more costly for the founder (and other stakeholders) than it needs to be.

Fourth, identification of potential opportunities is a key application of entrepreneurial cognitions. Without a perception of an opportunity, an individual is unlikely to start a new venture regardless of the external environment's objective attractiveness. Perceptions of opportunities involve the following stages (of a structuration process): (1) opportunity emergence, in which an opportunity forms through the interaction of an entrepreneur and a community of inquiry (see Chapter 2); (2) opportunity objectification, in which the entrepreneur begins to see the opportunity idea as an entity outside his or her mind; (3) opportunity enactment, in which a new venture is established, such as when a new venture emerges to deliver its first product or service; and (4) opportunity abandonment, in which the entrepreneur decides to terminate the potential opportunity.

This structuration approach to a potential opportunity depends on others' inputs into the new venture process (see Chapter 2). Who those others are likely impacts the cognitive process. For example, socially isolated founders tend to perceive potential opportunities more abstractly. When founders perceive potential opportunities more abstractly, they are less likely to create a new venture. Of course, founders perceive not only opportunities but also threats to their new ventures. Threats can cause stress, leading founders to engage in avoidance or active coping. *Avoidance coping* involves temporarily withdrawing from a situation appraised as threatening. *Active coping* involves directly addressing a threat through problem solving. Avoidance coping by itself or with active coping can help founders improve their psychological well-being (Uy et al., 2013).

Finally, individuals' cognitions can involve the intention to start a new venture. An *entrepreneurial intention* involves an individual's commitment to new venture–creation activities, which drives his or her investments of time, effort, and other resources into startup activities. Founders' attitudes toward new venture creation drive their entrepreneurial intentions. These attitudes are perceptions of the desirability of taking action, the perceived feasibility of successfully undertaking the action, and subjective norms (i.e., the opinions of important social others about the focal action).

Individuals use their attitudes to interpret information about the environment to determine their entrepreneurial intentions. For example, attending an entrepreneurship program raises science and engineering students' intentions to start a new venture (Souitaris et al., 2007). Additionally, as founders perceive greater market heterogeneity, their entrepreneurial intentions strengthen because broader and more diverse markets provide potential opportunities for those who have a strong entrepreneurial orientation toward creating value. Indeed, founders' belief that they will achieve new venture success increases for those with a strong motivation to start a new venture, which is reinforced by decision-making expertise. While founders' motivation for starting a new venture can lead to new venture success, prosocial motivation appears to slow venture emergence through obstructing the assembly of critical resources, delaying the new venture's first sale, and making it more difficult to raise equity funding, and so on. Prosocial motivation is the desire to expend effort and other resources to pursue potential opportunities to help others.

Organizing the Startup of a New Venture

Emergent Organizing

Emergent organizing involves developing processes for engaging in activities and making connections to enhance ventures' operational reliability and effectiveness. Emergent organizing involves improvisation and engagement as well as different organizing modes, and it reflects founders' decision-making logic.

First, founders engage in actions to create new ventures, such as improvisation. *Improvisation* involves the fusion of design (e.g., planning) and novel action and may provide the initial inspiration for a new venture.

One study found that founders' improvisational behaviors enhance new venture performance for those with high entrepreneurial self-efficacy but dampen new venture performance for those with low entrepreneurial self-efficacy. Over and above improvisation, there are other important activities involved in the startup process focused on four key business functions: (1) human relations, (2) marketing (including sales and public relations), (3) administration, and (4) environmental monitoring. One study found that founders allocate a significant amount of their time to exchanging information and opinions (36 percent of their work time) and engaging in more analytical and conceptual work (26 percent of their work time) (Mueller et al., 2012).

Second, different modes of organizing facilitate organizational emergence. There are three general modes of organizing: (1) vision for identifying potential opportunities, (2) strategic organizing for making major decisions, and (3) tactical organizing for implementing behaviors. Interestingly, an emergence event is initiated by a change in tactical organizing, which stimulates strategic organizing and generates a shift in vision (Lichtenstein et al., 2006).

Finally, founders' logic can influence organizational emergence. Specifically, expert founders appear to use an effectual logic. There are four primary principles of an effectual logic: (1) The *affordable loss principle* highlights how entrepreneurs evaluate opportunity pursuit based on how much they can afford to lose by taking this entrepreneurial action. (2) The *alliance principle* highlights how founders enter into strategic alliances to gain new stakeholders' precommitments. (3) The *contingency principle* highlights how founders remain open to unexpected events and exploit them as an opportunity. (4) The *control principle* highlights how founders take stock of what they have and create possible ends from these known means (Sarasvathy, 2001). These effectuation principles represent founders' responses to the recognition that while there is environmental uncertainty, they control their new ventures' ability to respond to external changes. Founders are more likely to use the principles of an effectual logic when they come from a career that involved investing and when they are experts than when they have less investing experience and are novices.

Moreover, effectuation involves taking action to secure the precommitments of potential stakeholders. These stakeholder commitments provide new ventures with resources and legitimacy. To gain the precommitments of stakeholders, founders can use boundary objects (see Chapter 3).

Boundary objects are material artifacts that symbolize a founder's beliefs and values (e.g., an engineering drawing or a project timeline) and the basis for shared practice between the founder and his or her community of inquiry (Chapter 3). Boundary objects help founders connect loosely coupled potential stakeholders across multiple domains for their new ventures' benefit. Therefore, founders' creation and use of boundary objects to share, frame, and interact with potential stakeholders are critical for new venture emergence.

Crafting a New Venture Strategy

New venture strategy refers to the formulation, decision, and enactment of a particular vision and position within the competitive landscape. A new venture strategy is reflected in a venture's *business model*, which describes the envisioned venture and its functioning to achieve its goals. A new venture strategy involves planning, diversification, entry mode, and innovativeness.

First, planning impacts the success of starting up of new ventures. Completing a formal plan improves new venture performance in terms of early-stage profitability, employment growth, and survival (when the plan is formed before the focal venture engages with potential stakeholders and conducts other organizing activities). Founders who are better educated and oriented toward growth, innovation, and external finance are more likely to plan. The benefits of different types of planning depend on the nature of a new venture's external environment. Specifically, in highly dynamic environments, new ventures benefit from planning that is selective and quick. In contrast, in less dynamic environments, new ventures benefit from taking more time to complete the planning task.

Also, not all plans are formal. For example, founders' use of action plans magnifies the impact of entrepreneurial-goal intentions (i.e., what founders intend for their new ventures) on venture creation (Gielnik et al., 2014). *Action plans* are mental maps of the steps needed to move from the current situation to the desired goal. These action plans can dampen the negative impact of unfounded imagined futures on venture creation by compensating for the motivational drain of such positive fantasies.

Second, diversification can affect new venture survival and efficiency. For example, one study found that the diversification of nonprofit new ventures through a broad scope of products and services within and across industries (Tanriverdi & Lee, 2008) increases these ventures' chances of

survival. However, these increased survival chances can come at the cost of lower organizational efficiency.

Third, a founder can pursue subsequent opportunities via one of two entry modes—within his or her existing venture (de alio venture) or with a new venture (de novo venture). Both de alio and de novo ventures represent entrepreneurial action, but only the latter leads to a new independent venture. *Habitual founders*—founders with prior startup experience—are more likely to create a new independent venture to pursue new opportunities. In contrast, *novice founders*, or founders with no prior startup experience, are more likely to pursue potential opportunities within their existing ventures. *Portfolio entrepreneurs* are founders who concurrently pursue two or more opportunities. Founders who are more educated, have more relationships with government support agencies, more frequently use their business networks, and have prior startup experience are more likely to become portfolio entrepreneurs. Founders who are more educated, younger, have greater risk-taking prosperity, and are more inventive are more likely to enter a new market by starting an independent venture (than by acquiring an existing firm).

Finally, a new venture strategy can promote innovativeness, thereby impacting new venture performance. The nature of the relationship between a new venture strategy, innovation, and performance is not initially obvious. On the one hand, we would expect a new venture's innovativeness to generate benefits for the venture, such as market power, cost efficiency, and capabilities like absorptive capacity. On the other hand, a new venture's innovativeness increases the liabilities associated with newness, which increase its chances of failure. Indeed, in a study of Finnish startups, innovativeness reduced new ventures' survival chances, and founders' preferences for risk magnified this negative relationship (Hyytinen et al., 2015).

Furthermore, new ventures can tap into external knowledge as a source of innovation. Indeed, open innovation is about "harnessing knowledge flows across firm boundaries" (Greul et al., 2018, p. 392). New ventures can benefit from open innovation by using such knowledge flows to build their capabilities. Still, they need to recognize that there are risks associated with such openness to the crowd. Interestingly, user entrepreneurs are more likely to allow knowledge flows outside of their ventures without being compensated for this knowledge. *User entrepreneurs* have personal experience and derive personal benefits from using the products or services that their new ventures offer. Some individuals who create a

new venture are called accidental entrepreneurs. *Accidental entrepreneurs* happen upon an idea for a new venture due to their personal use of a product or service. Like user entrepreneurs, accidental entrepreneurs are more likely to allow knowledge to flow outside their new ventures to others without collecting revenues.

Facilitating Organizational Emergence

Organizational emergence refers to progress in the steps toward creating a new organization. Organizational emergence arises from the completion of new venture–creation activities. A new venture emerges along with four properties: (1) intentionality, which is the founder's purposeful investment of resources for creating a new venture; (2) resources, which combine as the building blocks of an organization; (3) boundary, which creates a formalized space for the new venture that separates it from other entities; and (4) exchange, which involves exchanging information and other resources across the emerging new venture's boundary (Katz & Gartner, 1988). By engaging in activities that facilitate these emergence properties, founders can establish new ventures with capabilities and stakeholder support to deal with the ventures' liabilities of newness. Counterintuitively, one study found that founders who were able to quickly perform new venture–creation activities were more likely to terminate the pursuit of their potential opportunities (Brush et al., 2008).

Promoting New Venture Legitimacy

New ventures suffer from the liabilities of newness. Founders need to establish legitimacy for their new ventures to enhance new venture performance. *New venture legitimacy* refers to audiences' assessments that a new venture and its actions are desirable, acceptable, and appropriate. Founders attempt to achieve legitimacy for their new ventures by seeking endorsement, promoting legitimacy, and securing human and financial capital.

First, founders often seek some form of endorsement to increase new venture legitimacy. Potential stakeholders are typically uncertain about a new venture. Founders can reduce potential stakeholders' uncertainty over their new ventures by signaling the ventures' quality and credibility to external audiences. For example, founders can build new venture

legitimacy by highlighting their experience. The benefits of experience in establishing new venture legitimacy are magnified when a new venture can gain third-party endorsements and third-party affiliations. Indeed, one study found that positive signals—namely, having a founder with managerial experience, having at least one product in the market, and operating from a commercial property—are more impactful for raising external funding when a new venture affiliates with an incubator (Plummer et al., 2016).

Similarly, new ventures can establish legitimacy through several mechanisms: (1) *identity mechanisms* affect how a venture is portrayed to others to enhance its legitimacy, (2) *associative mechanisms* establish legitimacy through communicating a new venture's link to other entities, and (3) *organizational mechanisms* communicate a new venture's attributes and achievements (Fisher et al., 2017). For example, these mechanisms can lead to certification. *Certification* occurs when an authoritative or high-status entity formally acknowledges that a new venture has met current standards. This certification can help the founder transition the new venture from a plan to an operational venture, particularly in low-legitimacy sectors.

Second, as implied above, founders can influence new venture legitimacy. Founders seek legitimacy for their new ventures by (1) establishing what matters to them based on their values and beliefs, (2) focusing attention on what matters to their audiences, and (3) finding a balance between what matters to them and what matters to their new ventures' potential stakeholders. Therefore, founders need to reflect on themselves and their potential stakeholders to engage in legitimacy work targeted at their audiences' expectations but only in a way in which the founders do not feel like they have overly compromised their values and beliefs.

Also, (potential) stakeholders judge a new venture more favorably when it communicates a *legitimately distinctive* identity. New ventures communicate their identities through *legitimizing claims* (i.e., aligning ventures with institutional rules and expectations) and *distinctiveness claims* (i.e., meaningfully distancing ventures from institutional rules and expectations). The appropriate balance of legitimizing and distinctiveness claims depends on the environment. For example, when entering a new market, founders' are likely to emphasize distinctiveness from established markets. In contrast, when new ventures need legitimacy (more than distinctiveness), founders are likely to highlight their credentials (including their education, experience, and status) to signal to potential

stakeholders that their new ventures align with norms and stakeholder expectations. Founders can also increase audiences' positive evaluations of their new ventures by engaging in impression management to communicate certain aspects of their new ventures to (potential) stakeholders and disguise others. However, some efforts to establish legitimacy may break moral codes, such as when founders tell legitimacy lies. Founders tell legitimacy lies when they intentionally misrepresent the facts about their new ventures to deceive (potential) stakeholders.

Third, legitimacy can impact access to human capital, which is of critical importance to new ventures. New ventures can attract potential employees by finding the right balance between distinctive-employment claims (e.g., a highly innovative work environment) and new venture-legitimacy claims. In a study of job seekers, founders' claims about their new ventures' distinctiveness were more important than claims about these ventures' legitimacy in attracting employees to work for new ventures (Moser et al., 2017). More specifically, this study showed that highly innovative employees are attracted to new ventures that have a distinct *ideology*—committed to a cause—and new ventures with highly legitimate founders (i.e., founders who were educated at a prestigious university and had professional experience at a renowned firm) (Moser et al., 2017).

Finally, establishing new venture legitimacy involves a process over time. This process is dynamic and entails a new venture's status and reputation. Reputation is an economic concept reflecting past performance that signals quality and merit. Status is a sociological concept of social rank that signals privilege. A new venture can build its status through its reputation (more so for older firms and through big hits [e.g., a blockbuster initial public offering for venture capital firms]) (Pollock et al., 2015). Moreover, a new venture's current status can influence its future status (in a path-dependent or imprinting way) but less so the older the venture. Similarly, a new venture's first partner's reputation has an immediate and ongoing impact on the venture's status. A critical element of establishing a new venture's legitimacy is enrolling stakeholders to commit resources to the new venture. *Stakeholder enrollment* is the process by which founders (and new ventures) develop and strengthen their psychological bonds with (potential) stakeholders.

Founder Exit

Founder exit refers to when an individual involved in creating a venture leaves the role of owner/manager of that venture. Founders have different exit strategies and modes of exit.

First, there is heterogeneity in the likelihood of founder exit. Founder exit is more likely to occur in older and larger ventures. As ventures age and grow, their tasks shift from more entrepreneurial tasks to more managerial tasks. Given this shift in the nature of new venture tasks, replacing a founder with a professional manager can benefit a venture. Some founder exits are forced upon founders by investors/owners. Founders are less likely to be forced to exit their ventures when they had success at their previous firms, had prior relationships with the other founding team members (i.e., before starting their ventures), and have prior startup experience. High environmental uncertainty magnifies these founder-persistence effects.

Counterintuitively, there is a founders' dilemma in which founders who are most successful in growing their new ventures are those who are most likely to be replaced by stockholders. This dilemma is explained by the fact that success in growing a new venture increases the venture's reliance on external funding. These equity investors acquire greater ownership in the venture and use this control to replace the founder with a professional manager. Generally, founder-CEOs are more likely to be replaced when their ventures perform either among the worst or the best in their respective industries. Therefore, the mismatch between the focal business's quality and its founder's ability drives founder displacement. Interestingly, while ventures that replace their founder-CEOs are more likely to fail, those that survive grow faster and have more positive investor reactions at their initial public offerings. Indeed, when investors replace founders with professional managers, venture performance typically increases.

Second, founders may choose to exit their ventures voluntarily. Founders may voluntarily exit their ventures for several reasons. For example, founders may voluntarily exit to avoid racking up additional personal losses (i.e., overcome the bias that causes founders to be reluctant to exit their ventures despite a losing course of action). Founders also voluntarily exit their ventures when they become frustrated by losing control over their ventures' direction. Therefore, founder exit can be full

(exit management and ownership) or partial (exit management or ownership). For example, some founders may have a harvest strategy whereby they voluntarily exit their ventures to "pull money" out of their ventures based on the value they have created.

Starting New Ventures in Different Environments

A new venture's external environment is the context beyond the boundaries of the emergent venture. The external environment can impact a new venture through its imprinting effect. This imprinting effect differs depending on the specific environmental dimensions and the government influences of the environmental context.

First, the external environment can imprint new ventures. Imprinting explains how founders and ventures develop characteristics based on venture creation that persist despite environmental changes. Founders can be imprinted by their (1) families and friends to pursue multiple unrelated ventures, (2) hobbies to focus on user communities to make product or service improvements without a primary focus on financial rewards, or (3) prior work experience to focus on markets and industries expected to be important (see Chapter 1). Moreover, the initial mode of organizing can have a persistent impact on a new venture. For example, founders who initially engage in *organizational knowledge brokering*—effectively transferring knowledge from one technical field to innovate in another technical field—can enhance the benefits of search for new venture performance (Hsu & Lim, 2013). The masculinity or femininity of the industry in which a founder creates a new venture can also imprint on the new venture. For example, new ventures based on female-identity claims in a male-dominated industry can face the liability of differentiation (Micelotta et al., 2018). The *liability of differentiation* is the disadvantage of a new venture offering a gender identity different from the gender of competitors and the focal industry.

Second, the different dimensions of the environment can have different influences on new venture creation and performance. New ventures are more innovative in more competitive and munificent environments and in environments that are less manufacturing intensive and with a smaller market size. New digital technologies can also influence new venture creation through several enabling mechanisms that impact the new venture–creation process. Differences in the external environment can also occur across countries. For example, the benefits of founders'

resources for starting a new venture are magnified in countries that have a more entrepreneurially oriented financial system, a more established educational system, and a culture that is more trusting but less hierarchal and less communal (De Clercq et al., 2013). A country's culture is less hierarchical when its citizens lack a strong desire for the power-structure status quo and is less communal when its citizens perceive themselves as autonomous.

Finally, the government can influence a new venture's context. One study in Israel found that government subsidies for research and development seemed to stimulate external investment, foster innovation, and improve the likelihood of new firm survival (Conti, 2018). Another form of subsidy is the government providing advice, education, and other information to founders and their new ventures. While governments can provide an environment in which founders and their new ventures can benefit, governments can also "throw sand in the wheels of efficiency." For example, to access resources and services from governments, founders may feel obliged to pay bribes to government officials to receive those resources or services promptly. The payment of these bribes is an illegal activity. A study in China found that nascent entrepreneurs are more likely to offer bribes to government officials when the local economic conditions are declining, especially entrepreneurs who see themselves as underdogs (Baron et al., 2018). An underdog identity refers to founders' beliefs that members of society perceive them as low in social status and that it is difficult to change society's perception of them.

Conclusion

New venture creation—namely, the phenomenon of starting a new organization—is at the core of the field of entrepreneurship and is also informative to the broader field of management. The literature on new venture creation has rapidly evolved in the past two decades. Hence, in this chapter, we described how entrepreneurs move through the stages of co-creating, organizing, and performing startups. The summarizing model in Fig. 5.1 suggests the following:

- During the co-creating stage, the cognitions and social relationships of lead founders or founding teams shape how they acquire stakeholders and build communities of inquiry to start exploiting new business opportunities.

- During the organizing stage, lead founders or founding teams develop processes for engaging in activities and improving operational effectiveness. They craft strategies and develop their ventures' business models.
- During the performing stage, lead founders or founding teams execute on their ventures' strategies to scale the ventures, which includes enhancing the ventures' legitimacy and, potentially, replacing founders.
- Ventures' external environment shapes the processes of co-creating, organizing, and performing through imprinting lead founders or founding teams and setting the boundaries, including industry characteristics, access to resources, and institutional frameworks.

References

Baron, R. A., Hmieleski, K. M., & Henry, R. A. (2012). Entrepreneurs' dispositional positive affect: The potential benefits—And potential costs—Of being "up." *Journal of Business Venturing, 27*(3), 310–324.

Baron, R. A., & Tang, J. (2011). The role of entrepreneurs in firm-level innovation: Joint effects of positive affect, creativity, and environmental dynamism. *Journal of Business Venturing, 26*(1), 49–60.

Baron, R. A., Tang, J., Tang, Z., & Zhang, Y. (2018). Bribes as entrepreneurial actions: Why underdog entrepreneurs feel compelled to use them. *Journal of Business Venturing, 33*(6), 679–690.

Baum, J. R., & Bird, B. J. (2010). The successful intelligence of high-growth entrepreneurs: Links to new venture growth. *Organization Science, 21*(2), 397–412.

Beckman, C. M. (2006). The influence of founding team company affiliations on firm behavior. *Academy of Management Journal, 49*(4), 741–758.

Beckman, C. M., Schoonhoven, C. B., Rottner, R. M., & Kim, S. J. (2014). Relational pluralism in de novo organizations: Boards of directors as bridges or barriers to diverse alliance portfolios? *Academy of Management Journal, 57*(2), 460–483.

Brigham, K. H., De Castro, J. O., & Shepherd, D. A. (2007). A person-organization fit model of owner-managers' cognitive style and organizational demands. *Entrepreneurship Theory and Practice, 31*(1), 29–51.

Brush, C. G., Manolova, T. S., & Edelman, L. F. (2008). Properties of emerging organizations: An empirical test. *Journal of Business Venturing, 23*(5), 547–566.

Campbell, B. A., Ganco, M., Franco, A. M., & Agarwal, R. (2012). Who leaves, where to, and why worry? Employee mobility, entrepreneurship and effects on source firm performance. *Strategic Management Journal, 33*(1), 65–87.

Carnahan, S., Agarwal, R., & Campbell, B. A. (2012). Heterogeneity in turnover: The effect of relative compensation dispersion of firms on the mobility and entrepreneurship of extreme performers. *Strategic Management Journal, 22*(12), 1411–1430.

Conti, A. (2018). Entrepreneurial finance and the effects of restrictions on government R&D subsidies. *Organization Science, 29*(1), 134–153.

De Clercq, D., Lim, D. S., & Oh, C. H. (2013). Individual-level resources and new business activity: The contingent role of institutional context. *Entrepreneurship Theory and Practice, 37*(2), 303–330.

Edelman, L. F., Manolova, T., Shirokova, G., & Tsukanova, T. (2016). The impact of family support on young entrepreneurs' startup activities. *Journal of Business Venturing, 31*(4), 428–448.

Eesley, C. E., Hsu, D. H., & Roberts, E. B. (2014). The contingent effects of top management teams on venture performance: Aligning founding team composition with innovation strategy and commercialization environment. *Strategic Management Journal, 35*(12), 1798–1817.

Farmer, S. M., Yao, X., & Kung-Mcintyre, K. (2011). The behavioral impact of entrepreneur identity aspiration and prior entrepreneurial experience. *Entrepreneurship Theory and Practice, 35*(2), 245–273.

Fauchart, E., & Gruber, M. (2011). Darwinians, communitarians, and missionaries: The role of founder identity in entrepreneurship. *Academy of Management Journal, 54*(5), 935–957.

Fisher, G., Kuratko, D. F., Bloodgood, J. M., & Hornsby, J. S. (2017). Legitimate to whom? The challenge of audience diversity and new venture legitimacy. *Journal of Business Venturing, 32*(1), 52–71.

Franke, N., Gruber, M., Harhoff, D., & Henkel, J. (2006). What you are is what you like—Similarity biases in venture capitalists' evaluations of startup teams. *Journal of Business Venturing, 21*(6), 802–826.

Ganco, M. (2013). Cutting the Gordian knot: The effect of knowledge complexity on employee mobility and entrepreneurship. *Strategic Management Journal, 34*(6), 666–686.

Gielnik, M. M., Barabas, S., Frese, M., Namatovu-Dawa, R., Scholz, F. A., Metzger, J. R., & Walter, T. (2014). A temporal analysis of how entrepreneurial goal intentions, positive fantasies, and action planning affect starting a new venture and when the effects wear off. *Journal of Business Venturing, 29*(6), 755–772.

Greul, A., West, J., & Bock, S. (2018). Open at birth? Why new firms do (or don't) use open innovation. *Strategic Entrepreneurship Journal, 12*(3), 392–420.

Hoogendoorn, S., Parker, S. C., & Van Praag, M. (2017). Smart or diverse startup teams? Evidence from a field experiment. *Organization Science, 28*(6), 1010–1028.

Hsu, D. H., & Lim, K. (2013). Knowledge brokering and organizational innovation: Founder imprinting effects. *Organization Science, 25*(4), 1134–1153.

Hyytinen, A., Pajarinen, M., & Rouvinen, P. (2015). Does innovativeness reduce startup survival rates? *Journal of Business Venturing, 30*(4), 564–581.

Katz, J., & Gartner, W. B. (1988). Properties of emerging organizations. *Academy of Management Review, 13*(3), 429–441.

Kickul, J., Gundry, L. K., Barbosa, S. D., & Whitcanack, L. (2009). Intuition versus analysis? Testing differential models of cognitive style on entrepreneurial self-efficacy and the new venture creation process. *Entrepreneurship Theory and Practice, 33*(2), 439–453.

Kier, A. S., & McMullen, J. S. (2018). Entrepreneurial imaginativeness in new venture ideation. *Academy of Management Journal, 61*(6), 2265–2295.

Lichtenstein, B. B., Dooley, K. J., & Lumpkin, G. T. (2006). Measuring emergence in the dynamics of new venture creation. *Journal of Business Venturing, 21*(2), 153–175.

Ling, Y., Zhao, H., & Baron, R. A. (2007). Influence of founder-CEOs' personal values on firm performance: Moderating effects of firm age and size. *Journal of Management, 33*(5), 673–696.

Micelotta, E., Washington, M., & Docekalova, I. (2018). Industry gender imprinting and new venture creation: The liabilities of women's leagues in the sports industry. *Entrepreneurship Theory and Practice, 42*(1), 94–128.

Moser, K. J., Tumasjan, A., & Welpe, I. M. (2017). Small but attractive: Dimensions of new venture employer attractiveness and the moderating role of applicants' entrepreneurial behaviors. *Journal of Business Venturing, 32*(5), 588–610.

Mueller, S., Volery, T., & Von Siemens, B. (2012). What do entrepreneurs actually do? An observational study of entrepreneurs' everyday behavior in the start–up and growth stages. *Entrepreneurship Theory and Practice, 36*(5), 995–1017.

Murnieks, C. Y., Cardon, M. S., Sudek, R., White, T. D., & Brooks, W. T. (2016). Drawn to the fire: The role of passion, tenacity and inspirational leadership in angel investing. *Journal of Business Venturing, 31*(4), 468–484.

Peterson, S. J., Walumbwa, F. O., Byron, K., & Myrowitz, J. (2009). CEO positive psychological traits, transformational leadership, and firm performance in high-technology startup and established firms. *Journal of Management, 35*(2), 348–368.

Plummer, L. A., Allison, T. H., & Connelly, B. L. (2016). Better together? Signaling interactions in new venture pursuit of initial external capital. *Academy of Management Journal, 59*(5), 1585–1604.

Pollock, T. G., Lee, P. M., Jin, K., & Lashley, K. (2015). (Un)tangled: Exploring the asymmetric coevolution of new venture capital firms' reputation and status. *Administrative Science Quarterly, 60*(3), 482–517.

Qin, F., Wright, M., & Gao, J. (2017). Are 'sea turtles' slower? Returnee entrepreneurs, venture resources and speed of entrepreneurial entry. *Journal of Business Venturing, 32*(6), 694–706.

Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review, 26*(2), 243–263.

Shepherd, D. A., Souitaris, V., & Gruber, M. (2021). Creating new ventures: A review and research agenda. *Journal of Management, 47*(1), 11–42.

Souitaris, V., Zerbinati, S., & Al-Laham, A. (2007). Do entrepreneurship programmes raise entrepreneurial intentions of science and engineering students? The effects of learning, inspiration and resources. *Journal of Business Venturing, 22*(4), 566–591.

Tanriverdi, H., & Lee, C. H. (2008). Within-industry diversification and firm performance in the presence of network externalities: Evidence from the software industry. *Academy of Management Journal, 51*(2), 381–397.

Uy, M. A., Foo, M. D., & Song, Z. (2013). Joint effects of prior start-up experience and coping strategies on entrepreneurs' psychological well-being. *Journal of Business Venturing, 28*(5), 583–597.

Walske, J. M., & Zacharakis, A. (2009). Genetically engineered: Why some venture capital firms are more successful than others. *Entrepreneurship Theory and Practice, 33*(1), 297–318.

Zheng, Y. (2012). Unlocking founding team prior shared experience: A transactive memory system perspective. *Journal of Business Venturing, 27*(5), 577–591.

CHAPTER 5

Scaling New Ventures

Abstract Although scaling is a "hot topic" in the practitioner literature, it has mostly been ignored (at least explicitly) in the academic literature. Building on a recent editorial, this chapter highlights the importance of scaling for new venture growth. Scaling refers to spreading excellence within a venture as it grows (organically or through acquisition) from a new (and often small) organization to an established, large organization (Shepherd & Patzelt in *Entrepreneurship Theory and Practice*, https://doi.org/10.1177/1042258720950599, 2020). In this chapter, we explore the drivers and consequences of scaling and explain how knowledge management facilitates scaling, how founder replacement impacts scaling, and how current scaling influences subsequent scaling.

Research on new venture growth has primarily focused on explaining how some organizations grow faster than others. *Growth* refers to an increase in a venture's size (e.g., sales, employees, profit) over a particular period. Growth drivers include a venture's positioning in an attractive market, resource endowments, and relationship networks. However, 10 years ago, McKelvie and Wiklund (2010, p. 261) concluded that the "development of firm growth research has been notably slow.... A major reason for this lack of development is the impatience of researchers to prematurely address the question of 'how much?' before adequately providing answers

This chapter is based on Shepherd and Patzelt (2020).

D. A. Shepherd and H. Patzelt, *Entrepreneurial Strategy*,
https://doi.org/10.1007/978-3-030-78935-0_5

to the question 'how?'" In particular, for ventures that grow organically (i.e., not through external acquisitions), addressing the question of how is critical because doing so can provide entrepreneurs a roadmap of the actions necessary to expand their operations quickly. This topic's importance is echoed in the practitioner literature, which prominently uses the term "scaling" to describe how ventures can quickly grow their internal operations. *Scaling* refers to spreading excellence within an organization as it grows.

This chapter builds on the organizational-learning and knowledge-transfer literatures and a recent call for scaling research (Shepherd & Patzelt, 2020) to develop a knowledge-based framework to organize our thinking about scaling. We focus on knowledge as a critical resource for scaling because knowledge plays a crucial role in recognizing potential new business opportunities (see Chapters 1 and 2) as drivers of growth as well as in creating (Chapter 3) and managing (Chapter 4) new ventures. Moreover, based on years of discussions with entrepreneurs involved in scaling their ventures, Rao and Sutton (2014, p. 1) indicated that scaling involves "spreading constructive beliefs and behaviors from the few to the many"—that is, "build[ing] and uncover[ing] pockets of exemplary performance, spread[ing] those splendid deeds, and as an organization grows bigger and older recharge[ing] it with better ways of doing the work." Therefore, next to founders' intentions to grow their ventures, knowledge and its distribution throughout new ventures seem to be prerequisites for new ventures' effective scaling.

In explaining this knowledge-based scaling framework (see also Shepherd & Patzelt, 2020), we offer the following key insights. First, while the entrepreneurship literature has primarily focused on explaining how much new ventures grow, the how of growth is poorly understood (McKelvie & Wiklund, 2010). Thus, we suggest a focus on scaling as a way to explain *how* new ventures grow. Second, in this chapter, we begin to explore how knowledge can be transferred throughout an organization through scaling. That is, rather than focusing on prior knowledge (Shane, 2000) or even the acquisition of knowledge (Bresman et al., 1999), this chapter focuses on exploring the mechanisms of intraorganizational knowledge transfer that promote organizational scaling.

A Knowledge-Transfer Perspective on Organizational Scaling

An essential aspect of spreading excellence within an organization is transferring knowledge from the few initial organizational members to those added to the organization (i.e., from individual to individual) and to the organization itself (i.e., from members to the organization). *Knowledge transfer* refers to the purposeful exchange of information between two entities (individuals or ventures) such that at least one of the entities becomes more knowledgeable (Kumar & Ganesh, 2009). While there is a common misconception that knowledge transfer is costless and instantaneous, the stickiness of information means that knowledge transfer is typically effortful and time consuming. Thus, we note that scaling a new venture is an effortful and time-consuming process for the focal entrepreneur and the new venture's members and other stakeholders.

In Fig. 5.1, we present the knowledge-transfer framework of scaling (see Shepherd & Patzelt, 2020) as a basis for advancing our understanding of how new ventures scale. In the center of the model is *scaling*—spreading excellence within an organization as it grows. The drivers of scaling (solid boxes and solid arrows) include (1) *accumulating* knowledge, especially tacit knowledge, from learning by doing and learning by observing; (2) *communicating* knowledge by articulating, codifying, and otherwise disseminating knowledge to organizational members; (3) *relocating* knowledge repositories, such as people, tasks, tools, and templates; and (4) *connecting* knowledge based on social capital, formalization, and improvisation. Founders play a central role in the scaling process for several reasons. For example, founders make key strategic decisions related to knowledge-transfer activities within organizations, which are essential to scaling new ventures. However, we note that as the knowledge demands of new ventures change during the scaling process, stakeholders may replace founders with professional managers who possess the knowledge required for scaling.

Accumulating Knowledge to Scale a New Venture

Discussions of organizational learning and knowledge transfer often start with experience, mainly how "organizational experience interacts with context to create knowledge" (Argote & Miron-Spektor, 2011, p. 1123). Organizational learning results in a positive change in this knowledge

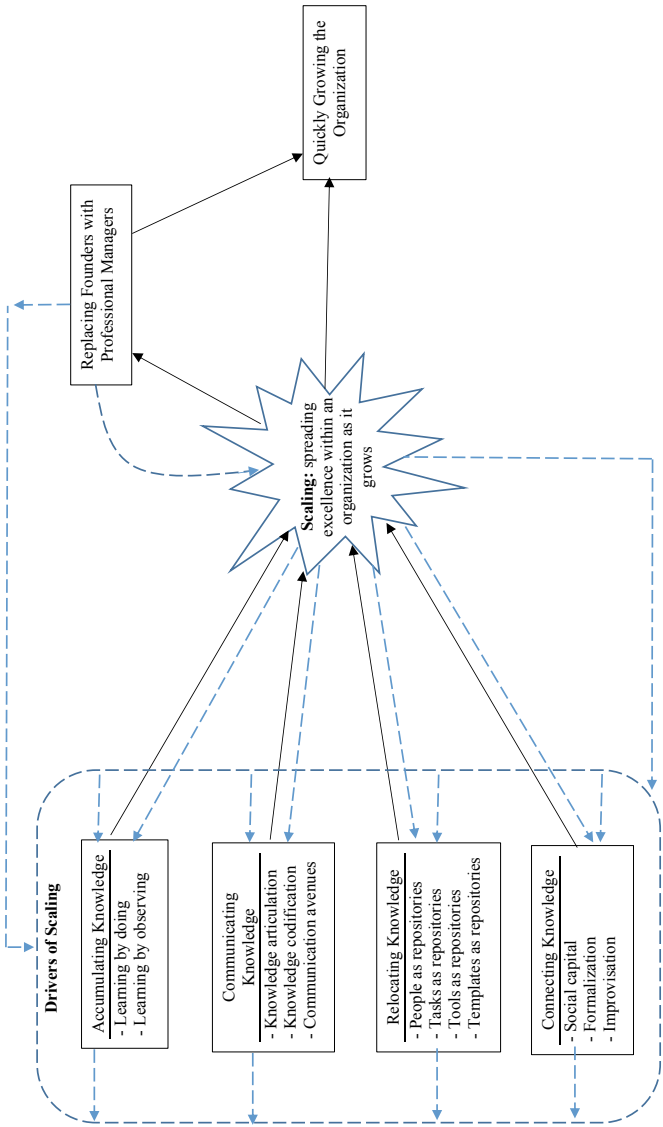

Fig. 5.1 A knowledge-transfer framework of scaling a venture (Adapted from Shepherd & Patzelt, 2020)

and often occurs as organizational members gain additional experience. This experience can be acquired directly by engaging in tasks (i.e., experiential learning) and indirectly by observing others engage in tasks (i.e., vicarious learning). For example, one study found that knowledge is transferred more easily across stores owned by the same franchisee but not to stores owned by other franchisees in the same franchise system (Darr et al., 1995).

Given the uncertain environments of many new ventures, founders often learn by doing. Learning by doing can lead to various missteps, mistakes, and failures, which, in a new venture, can be an important source of new knowledge. This learning process can help reduce uncertainty, test the validity of opportunity conjectures (see Chapter 3), and determine the best way to exploit potential opportunities.

In addition to learning by doing, new venture members can learn by observing others and then performing those activities or practices themselves (i.e., vicarious learning). Because a new venture's potential competitive advantage may lie in the cognitions, actions, and practices of its founder(s), scaling depends on other organizational members engaging in learning by doing and learning by observing to transfer the founder's knowledge to organizational members. Therefore, scaling is likely enhanced when new venture members learn both by doing and by observing the founder to gain knowledge to effectively and efficiently exploit potential opportunities for growth.

Communicating Knowledge and Scaling a New Venture

Knowledge Articulation and Codification

While learning can be passive based on experience and observation, it can also be a more deliberate cognitive process through knowledge articulation and codification. *Knowledge articulation* refers to a deliberate process of collective learning in which individuals express their unique information to others, engage in task conflict, and debate differing viewpoints. Through this knowledge-articulation process, new venture members can better understand the causal links between their actions and firm outcomes. By understanding these causal links, new venture members have a foundation from which they can begin to question and adapt their current routines. Routines are stable behavior patterns for performing specific organizational tasks. Despite the collective-learning benefits of articulating knowledge, many organizations do not do so.

To further enhance collective learning within a new venture, members can codify articulated knowledge. *Knowledge codification* refers to documenting a new venture's knowledge in some way, such as in manuals, documents, memos, spreadsheets, support software, and so on. Not only does codifying knowledge make an individual's knowledge available to a new venture (transfer from individual knowledge to organizational knowledge), but the process of codifying knowledge can facilitate learning for the codifier as he or she makes causal links explicit. Interestingly, organizations only codify a small fraction of their articulated knowledge. The reluctance or inability to codify articulated knowledge could be due to the cognitive costs associated with engaging in these collective-learning tasks (e.g., the investment of managerial attention, which is then unavailable for other tasks; see Chapter 1).

Further, even when organizations can successfully codify their knowledge, it does not appear to be easy to transfer this codified knowledge throughout organizations. However, when new venture members codify their knowledge, it appears to generate several benefits. For example, one study found that entrepreneurs who codify their decision making are better able to secure others' commitment to their venturing efforts (Mitchell & Shepherd, 2012). Similarly, another study reported that founding teams that use professional documentation practices in decision making are able to better advance their opportunities (Preller et al., 2020). Therefore, scaling is likely enhanced when venture members engage in learning by doing and learning by observing to gain knowledge critical for the effective and efficient exploitation of potential opportunities.

We note that there are different types of knowledge, and these differences likely impact the knowledge transfer involved in scaling. There is explicit knowledge (which can be articulated) versus tacit knowledge (which is difficult to articulate); there is declarative knowledge (i.e., know-what) and procedural knowledge (i.e., know-how); and there is variation in the causal ambiguity of knowledge—the extent to which the individual (or venture) understands the nature of the cause and effect of the relationships underlying the know-what or know-how. Unsurprisingly, tacit knowledge appears to be the most difficult to transfer. However, transferring tacit knowledge within a venture is particularly important in high-velocity (i.e., dynamic and complex) environments. Similarly, while the causal ambiguity of knowledge can impede its transfer, high-velocity

environments contribute to this causal ambiguity. Therefore, scaling is likely greater for new ventures that are better at transferring tacit and causally ambiguous knowledge among their members.

Communication Avenues

Communication can act as a mechanism linking knowledge-transfer efforts to effective scaling. Specifically, communication as a knowledge-transfer mechanism takes different forms, including regular communication (e.g., status reports, phone calls, emails), face-to-face meetings, personal and international acquaintances, and storytelling practices. The entrepreneurship literature has already begun to explore new ventures' communication with external investors (e.g., Allison et al., 2017; Martens et al., 2017). Although new organizations typically use communication to inform external audiences about the nature of their potential opportunities and strategies for organizational growth, communication that informs new ventures' internal audiences about their success in exploiting opportunities for venture growth likely facilitates scaling.

Relocating Knowledge and Scaling

Relocating knowledge repositories (i.e., people, tasks, tools, and templates) can be an effective knowledge-transfer mechanism within an organization and facilitates scaling. *People* possess and display knowledge such that when an entrepreneur relocates a person to another part of the focal venture, others can learn from that person, representing the transfer of both tacit and explicit knowledge. *Tasks* often involve tacit knowledge, and a network of tasks contributes to the formation of routines, which enable organizations to function. The extent to which an entrepreneur can relocate tasks and routines such that others within the focal venture can perform them facilitates knowledge transfer. Tools are also knowledge repositories (e.g., a knowledge-management system or other forms of technology) such that relocating the tools used by organizational members is a means of transferring knowledge. Relocating a tool can help transfer knowledge inherent in the tool and how to use it to others within the focal venture. Finally, *templates* are working examples of an organization's routines that specifically detail "both critical and noncritical aspects of the routine[s], providing details and nuances of how the work gets done, in what sequence, and how various components and sub-routines are interconnected" (Nelson & Winter, 1982, pp. 119–120). Exploring

how and when different combinations of these knowledge repositories are relocated within organizations can provide greater richness to our understanding of organizational scaling.

Connecting Knowledge

Social Capital

As scaling involves spreading excellence within a growing venture, venture members' ideas, efforts, and work need to be connected with those of other members. The personal connections inherent in social capital provide a basis for transferring knowledge within an organization. Intraorganizational social capital "is an intangible asset that is based on interactions between people" (Hador, 2016, p. 1119). This social capital facilitates knowledge transfer by opening communication channels and increasing information-exchange incentives between organizational members. Social capital can also decrease the perceived complexity of the knowledge being transferred, the time for knowledge transfer (due to relationship heuristics), and information-exchange costs.

There are many social-capital attributes and many associated organizational implications (for a review, see Hoang & Antoncic, 2003). Indeed, social capital involves (1) structural aspects, such as network ties, configurations, stability, cohesion, and range; (2) cognitive aspects, such as shared goals, shared vision, and shared culture; and (3) relational aspects, such as cooperation, norms, and identification. All or some of these aspects of social capital are likely to facilitate the knowledge transfer necessary for scaling. For example, knowledge transfer is more effective when the recipients have a shared business strategy, shared mental models, shared trust, and a superordinate identity. This knowledge transfer between new venture members based on "sharedness" appears to be enhanced by geographical proximity, similar tasks, and an organizational-safety culture. Therefore, ventures with higher intraorganizational social capital (i.e., structural, cognitive, and relational) are likely more effective at scaling. However, the specific impact of different types of social capital—founders' social capital and ventures' social capital—is likely contingent on contextual factors characterizing new ventures' environments. We now turn to two such considerations—formalization and improvisation.

Formalization

As a scaling venture grows to a larger size, formalization becomes an essential aspect of designing the organization. Formalization refers to the extent to which organizational tasks are standardized in the form of rules and procedures that direct members' behaviors. An organization's formalization promotes the knowledge transfer critical to scaling. Specifically, formalization reduces the uncertainty of communication among new venture members and establishes routines, thereby facilitating the transfer of both explicit and tacit knowledge.

Introducing formal structures in an organization—for example, through "hiring and training, performance measurement and rewards, job design, conflict resolution, protocols, and meetings"—can enable personal relationships to become embedded into organizational roles (Gittell & Douglass, 2012, p. 709) and thus facilitate scaling. That is, the "well-crafted rules and processes" of formalization "create predictability, reduce conflict, facilitate cooperation and reduce cognitive load because people are armed with proven responses to routine situations... rather than having to reinvent the wheel each time" (Rao & Sutton, 2014, p. 107). Therefore, entrepreneurs can enhance scaling when their ventures transition from more personal, informal relationships to more formalized relationships to connect organizational members. Even with the benefits of formalization, ventures still face the challenge of formalizing their operations without building an unresponsive bureaucracy—a bureaucracy that obstructs entrepreneurial action, such as improvisation, to which we now turn.

Improvisation

Although we have emphasized the importance of relocating knowledge repositories for scaling, the new locations will likely need to adapt to these people, tasks, tools, and templates. Rao and Sutton (2014, p. 52) emphasized the need for adaptation when scaling in the following quote: "While each decision unfolded differently, our analysis always seemed to end up in the same place; the trade-offs and tension between encouraging and forbidding departures for some template, practice or behavior took center stage." Such trade-offs and tension trigger improvisation that can facilitate the knowledge transfer necessary for scaling. Improvisation refers to a creative and spontaneous process of generating novelty by fusing design and action. An experimental culture, minimal structures, storytelling practices, and shared mental models within an organization

facilitate new ventures' improvisation. This improvisation is important because it enables transferred knowledge to fit new contexts. Therefore, improvisation is a scaling mechanism because it enables growing ventures to quickly enact change to fit their changing environments (internal and external).

Although not directly related to knowledge transfer (because it was not prior studies' focus of research), improvisation has been highlighted as a beneficial attribute of founders. For example, improvisation is important in the founding process and for venture performance (e.g., high sales growth for founders high in entrepreneurial self-efficacy [Hmieleski & Corbett, 2008]) because it is a source of rapid and novel responses to a changing environment and transferring the knowledge critical to scaling (as detailed above). Therefore, more improvisational ventures are more likely to succeed in scaling.

Founder Replacement and New Venture Scaling

Much has been made of founders' influence in creating new ventures. Founders make the key decisions that influence their ventures' early development including, as we argued above, decisions related to accumulating, communicating, relocating, and connecting knowledge. However, starting a venture and scaling a venture require different skills, experience, and knowledge. Indeed, investors ask whether a focal founder can perform both tasks—starting and scaling a venture. Conventional wisdom suggests that the answer to this question is often "no." Some believe that a growing venture requires managerial skills beyond those of the typical founder (Ewens & Marx, 2017; Willard et al., 1992). As a venture transitions from startup to scaleup, the expectation is that the leadership of the organization needs to transition from (1) creativity and exploration to efficiency and exploitation, (2) a single individual and tightly centralized decision making to a team of executives with participation and delegation in decision making, (3) passionate commitment to dispassionate objectivity, and (4) an entrepreneurial management style to a professional management style (Churchill & Lewis, 1983). Paradoxically, one study found that the more successful the CEO-founder, the more likely a professional manager would replace him or her (Wasserman, 2003). Specifically, for CEO-founders, success generally involves raising funds from outside investors, investors who desire (and use ownership power

to accomplish) the transition from founder-CEO to professional-CEO. Therefore, the more rapidly founders scale their ventures, the more likely they will be replaced by professional managers.

A Feedback Framework of Knowledge Transfer in Organizational Scaling

Above, we built on the knowledge-transfer literature to offer a framework of scaling. In the remaining sections of this chapter, we explore the interrelationships among the drivers of scaling (i.e., the dotted-line arrows of Fig. 5.1) and the relationships between founder replacement and the different scaling drivers.

Accumulating and Communicating Knowledge for Scaling

While accumulating knowledge (from learning by doing and learning by observing) can drive scaling, this positive relationship is likely magnified when knowledge is articulated, codified, or otherwise successfully communicated to other organizational members. Although we recognize that the "tacitness" of experience-based knowledge can obstruct its communication, the capability of communicating knowledge itself can be enhanced by learning by doing these communication activities. Similarly, members can learn to better share knowledge within a venture by observing others engaged in such communication activities. That is, observing a founder articulating and codifying his or her knowledge for scaling may provide the opportunity for organizational members to learn not only the content of that knowledge (i.e., learn know-what) but also how to articulate and codify their own knowledge (i.e., learn know-how) to advance further scaling efforts. It appears that in scaling an organization, it is essential that new venture members (and not just the founder[s]) accumulate knowledge on how to articulate, codify, and otherwise communicate their knowledge to other organizational members.

Accumulating and Relocating/Connecting Knowledge for Scaling

Scaling involves accumulating knowledge by relocating and connecting knowledge. For example, as members are relocated to other parts of the focal venture, undertake different tasks, use new tools, and engage

with new templates, they can learn how to engage in such relocation activities more effectively for the future. Moreover, founders can learn what knowledge needs to be transferred within their ventures, where that knowledge resides (e.g., in which people, tasks, tools, and templates), and how and where to relocate these knowledge repositories to facilitate scaling. Founders likely know this information from their interactions with people, tasks, tools, and templates and their relocation within organizations. However, under some circumstances, relocating knowledge can diminish knowledge accumulation and decrease this knowledge's usefulness for scaling. Indeed, relocating to promote scaling may require discarding knowledge repositories that were useful in the past but are no longer useful. That is, new venture members may need to unlearn some knowledge before they can absorb transferred, new knowledge. Rao and Sutton (2014, p. 28) summarized this notion in the following way:

> As organizations grow larger and older, as the footprint of a program expands, and as the consequences of past actions accumulate, once useful but now unnecessary roles, rules, rituals, red tape, products and services build up like barnacles on a ship; to make way for excellence to spread, these sources of unnecessary friction must be removed.

Similarly, new venture members who connect different knowledge chunks can create new knowledge to facilitate scaling. New venture members can better connect chunks of knowledge to create new knowledge when they have developed more social capital (i.e., role-based and hybrid relationships); commonality with other organizational members; and skills for improvising new ways of communicating, relocating, and connecting that promote scaling.

Communicating and Relocating Knowledge for Scaling

Relocating knowledge repositories likely facilitates the knowledge articulation and codification useful for scaling. For example, in relocating a tool to another organizational member, the transfer may require a member to articulate to others how to use the tool and what to do when it breaks down. This articulation is then available to transfer through other communication avenues and to be codified. Indeed, the distinction between different types of knowledge repositories is likely important in

explaining heterogeneity in scaling. That is, under some conditions, relocating a tool (as a knowledge repository) leads to effective scaling. Under different conditions, an entrepreneur can more effectively scale his or her venture by relocating a person rather than the other types of knowledge repositories. It could be that relocating a tool transfers know-how information through members' learning by doing while relocating a person transfers know-what and know-how through other members' learning by observing. The question then becomes which knowledge transfer is most critical for the current stage of venture scaling. Thus, there seems to be a complex mutual relationship between communicating and relocating knowledge in scaling a venture.

Communicating and Connecting Knowledge for Scaling

Scaling also depends on the interrelationship between communicating and connecting knowledge within a venture. For example, communicating knowledge facilitates the development of connections within organizations for transferring knowledge critical to scaling. In taking the effort to articulate and perhaps codify their knowledge, founders make themselves vulnerable to criticism (and perhaps imitation by competitors). However, such vulnerability is often important in developing strong relationships and increasing audience receptivity to knowledge transfer. Indeed, some of this communication may involve developing structures such that personal relationships begin to become more role based and transfer social capital from the individual level to the venture level. In return, connecting organizational members likely fosters the knowledge articulation and codification and the establishment of communication avenues necessary to promote scaling.

Relocating and Connecting Knowledge

While it seems rather obvious that relocating people within an organization helps increase connections through personal relationships and greater shared experience, it is unclear how relocating the other types of knowledge repositories—namely, tasks, tools, and templates—impacts connections for scaling. Relocating tasks likely helps build role-based relationships that we believe are important for organizational scaling. Furthermore, relocating tools likely promotes improvisation in the use of those tools for scaling. Indeed, improvisation may trigger (or arise

from) the relocation of people, tasks, tools, and templates. For example, improvisation can bring together different tools from across a venture to work in concert to enhance scaling. More specifically, improvisation can combine (through relocation) (1) different people with different tools, tasks, and templates; (2) different tools with different tasks and templates; and (3) different tasks with different templates. The combination and recombination of knowledge repositories within organizations through improvisation can facilitate organizational scaling.

Founder Replacement and Accumulating, Communicating, Relocating, and Connecting Knowledge for Scaling

Of course, the change from a founder to a professional manager can influence scaling through several mechanisms. (1) Professional managers likely bring a different set of accumulated experience than founders (presumably), engage in management in a different organizational context (as a basis for learning by observing and learning by doing), and serve as a potential source of others' vicarious learning by observing. However, professional managers are likely less improvisational than the founders they replace. (2) Not only do professional managers generally have different knowledge than the founders they replace, but they may also have greater experience and skills in articulating, codifying, and otherwise communicating excellence to a growing number of venture members. (3) Founders relocating out of ventures and professional managers relocating into ventures not only influence the composition and size of organizations' knowledge repositories but might also encourage new movement of people, tasks, tools, and templates (or the solidification of these knowledge repositories' "locations"). (4) Professional managers typically institute greater formalization and more role-based relationships. On the one hand, these actions can disrupt relationships within a venture and thus obstruct efforts to connect different knowledge sources within the venture. Professional managers may face some obstacles to scaling due to the reduced receptivity of organizational members who are loyal to founders and/or who resist efforts to introduce bureaucracy (for efficient exploitation). On the other hand, formalization and role-based relationships can provide systems for sharing and combining knowledge from different parts of a venture.

Scaling and Accumulating, Communicating, Relocating, and Connecting Knowledge for Scaling

The effectiveness of ventures' scaling efforts can influence the drivers of subsequent scaling activities. First, scaling provides more and different tasks for organizational members to do and more organizational members performing different tasks to observe (and therefore opportunities to learn). Second, scaling generates a greater need for venture members to articulate, codify, and communicate their tacit knowledge to reach a larger (and perhaps more diverse) set of recipients within the focal venture. Finally, scaling provides opportunities to relocate people, tasks, tools, and templates within an organization; bring in new knowledge repositories from outside the organization; and adapt or "relocate out" people, tasks, tools, and templates holding knowledge that is no longer needed. These feedback effects (and the nature of the mutual relationships) are important because they highlight (and have the potential to inform us about) the dynamism of scaling as new, small ventures become established, large organizations.

Conclusion

Organizational scaling refers to *spreading excellence within an organization as it grows*. This chapter illustrated that knowledge transfer may play a key role in new ventures' successful scaling efforts. In particular, while different knowledge-transfer mechanisms facilitate scaling, scaling can also impact how ventures engage in knowledge transfer. The summarizing model in Fig. 5.1 suggests the following:

- Accumulating, communicating, relocating, and connecting knowledge within a new venture are important activities that trigger the new venture's scaling.
- Accumulating, communicating, relocating, and connecting knowledge within a new venture are interdependent and mutually influence each other.
- Scaling itself influences the means and extent of accumulating, communicating, relocating, and connecting knowledge within a venture.
- Scaling can also trigger founder replacement, which influences a new venture's knowledge base and therefore the means and extent of accumulating, communicating, relocating, and connecting knowledge within the venture and thus the venture's subsequent scaling activities.

References

Allison, T. H., Davis, B. C., Webb, J. W., & Short, J. C. (2017). Persuasion in crowdfunding: An elaboration likelihood model of crowdfunding performance. *Journal of Business Venturing, 32*(6), 707–725.

Argote, L., & Miron-Spektor, E. (2011). Organizational learning: From experience to knowledge. *Organization Science, 22*(5), 1123–1137.

Bresman, H., Birkinshaw, J., & Nobel, R. (1999). Knowledge transfer in international acquisitions. *Journal of International Business Studies, 41*(1), 5–20.

Churchill, N. C., & Lewis, V. L. (1983). The five stages of small business growth. *Harvard Business Review, 61*(3), 30–50.

Darr, E. D., Argote, L., & Epple, D. (1995). The acquisition, transfer, and depreciation of knowledge in service organizations: Productivity in franchises. *Management Science, 41*(11), 1750–1762.

Ewens, M., & Marx, M. (2017). Founder replacement and startup performance. *Review of Financial Studies, 31*(4), 1532–1565.

Gittell, J., & Douglass, A. (2012). Relational bureaucracy: Structuring reciprocal relationships into roles. *Academy of Management Review, 37*(4), 709–733.

Hador, B. B. (2016). How intra-organizational social capital influences employee performance. *Journal of Management Development, 35*(9), 1119–1133.

Hmieleski, K. M., & Corbett, A. C. (2008). The contrasting interaction effects of improvisational behavior with entrepreneurial self-efficacy on new venture performance and entrepreneur work satisfaction. *Journal of Business Venturing, 23*(4), 482–496.

Hoang, H., & Antoncic, B. (2003). Network-based research in entrepreneurship—A critical view. *Journal of Business Venturing, 18*, 165–187.

Kumar, J. A., & Ganesh, L. S. (2009). Research on knowledge transfer in organizations: A morphology. *Journal of Knowledge Management, 13*(4), 161–174.

Martens, M. L., Jennings, J. E., & Jennings, P. D. (2017). Do the stories they tell get them the money they need? The role of entrepreneurial narratives in resource acquisition. *Academy of Management Journal, 50*(5), 1107–1132.

McKelvie, A., & Wiklund, J. (2010). Advancing firm growth research: A focus on growth mode instead of growth rate. *Entrepreneurship: Theory & Practice, 34*(2), 261–288.

Mitchell, J. R., & Shepherd, D. A. (2012). Capability development and decision incongruence in strategic opportunity pursuit. *Strategic Entrepreneurship Journal, 6*(4), 355–381.

Nelson, R. R., & Winter, S. G. (1982). *Evolutionary theory of economic change*. BelKnap Press of Harvard University.

Preller, R., Patzelt, H., & Breugst, N. (2020). Entrepreneurial visions in founding teams: Conceptualization, emergence, and effects on opportunity development. *Journal of Business Venturing, 35*(2), 105914.

Rao, H., & Sutton, R. I. (2014). *Scaling up excellence*. Random House.

Shane, S. (2000). Prior knowledge and the discovery of entrepreneurial opportunities. *Organization Science, 11*(4), 448–469.

Shepherd, D. A., & Patzelt, H. (2020). A call for research on the scaling of organizations and the scaling of social impact. *Entrepreneurship Theory and Practice*. https://doi.org/10.1177/1042258720950599.

Wasserman, N. (2003). Founder-CEO succession and the paradox of entrepreneurial success. *Organization Science, 14*(2), 149–172.

Willard, G., Kruger, D., & Feeser, H. (1992). In order to grow, must the founder go: A comparison between founder and non-founder management high growth manufacturing firms. *Journal of Business Venturing, 7*(3), 181–194.

Concluding Remarks

In this book, based on our own work (with coauthors) and the current knowledge of the academic entrepreneurship literature, we set out to explore the co-creation, management, and scaling of new ventures. Figure 1 summarizes the key insights of our book on entrepreneurial strategy. Our book highlighted that crafting new venture strategies starts with entrepreneurs transiently allocating attention to environmental developments. Entrepreneurs who attend to environmental changes can form beliefs that such changes represent new business opportunities that they can exploit. Exploitation, however, is not a one-time event; rather, entrepreneurs refine and develop their opportunities toward specific customer segments or markets. Key to this development is that a new venture strategy incorporates interactions with a community of inquiry—interested parties like potential customers, investors, or experts who facilitate an entrepreneur's social learning about his or her opportunity. During opportunity development, strategizing tools like lean startup framework and specific organizing approaches trigger the emergence of a new venture. The subsequent extent of new venture growth is contingent on the new venture strategy's focus on knowledge-transfer activities within the organization that promote scaling—namely, the spreading of excellence within the venture as it grows.

As the framework in Fig. A.1 indicates, crafting a new venture strategy starts in an entrepreneur's mind. Therefore, a significant amount of extant research on the origins of new venture strategies has drawn on a cognitive perspective to understand how entrepreneurs and managers recognize and

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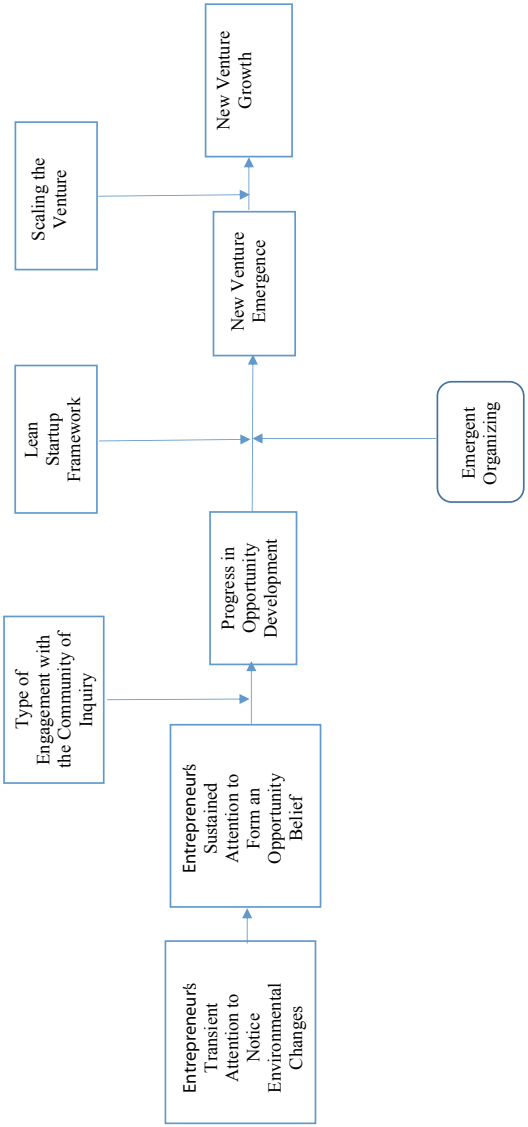

Fig. A.1 Overarching framework of entrepreneurial strategy

evaluate new business opportunities (e.g., Shepherd & Patzelt, 2018). More specifically, Chapter 1 of this book highlighted the central role of attention as a cognitive resource that is highly limited for managers and entrepreneurs, who typically act in environments characterized by time pressure, uncertainty, volatility, and dynamism. These job demands, in combination with the strategies entrepreneurs use to scan the environment for new knowledge and information (either close or distant to their existing knowledge base), determine the extent to which entrepreneurs transiently allocate their attention using top-down processes—that is, the extent to which they rely on their existing knowledge for guiding attention in the strategizing process. While those who rely more on their existing knowledge structures are more likely to recognize environmental changes comprising potential incremental opportunities, those who rely less on their existing knowledge structures for guiding attention are more likely to recognize disruptive changes that lead to radical potential opportunities. Importantly, while entrepreneurs are often celebrated for recognizing radical opportunities, we emphasize that allocating attention in a way that allows for both radical and incremental opportunities can be beneficial for entrepreneurs. For example, while the smartphone has been a radical opportunity, capturing its full value also still includes the pursuit of multiple incremental opportunities (e.g., updates) after first market introduction. Therefore, our framework not only helps clarify how entrepreneurs recognize potential radical opportunities in the first place by allocating attention using less top-down guidance but also how they subsequently capture more value from those opportunities through more top-down guidance of attention allocation (i.e., through recognizing subsequent opportunities for incremental innovation).

While attention allocation is an important trigger for recognizing new business opportunities, understanding how an entrepreneur forms the belief that he or she can act on a recognized opportunity requires consideration of how the entrepreneur's cognitive mode (intuition vs. deliberate reasoning) and level of immersion with the focal opportunity impact his or her sustained attention to and evaluation of that potential opportunity (Shepherd et al., 2017). The combination of cognitive mode and immersion (discernment) helps explain how entrepreneurs relate recognized opportunities to their knowledge base and therefore form the belief that they can take action. In particular, entrepreneurs who rely on absorptive discernment are highly immersed with their recognized opportunities and strongly rely on intuition for their strategic decisions. These entrepreneurs

are more likely to form the belief that an identified incremental opportunity should be acted upon. In contrast, these entrepreneurs are less likely to form the belief that an identified potential radical opportunity should be acted on as part of their new venture strategies unless the surprise they experience about such an opportunity stimulates a shift to the abductive-discernment mode—that is, they move away from an intuitive evaluation of the focal opportunity toward an evaluation based on more deliberate reasoning. Entrepreneurs who rely on abductive discernment (high immersion and deliberate reasoning) are more likely to evaluate a potential radical opportunity as a candidate to act on, while they are less likely to do so for potential opportunities that are incremental in nature. However, entrepreneurs may also be less immersed with the potential opportunities they recognize. In this case, relying on intuition is unlikely to trigger the belief that either a radical or an incremental opportunity should be acted on. However, when low immersion levels are combined with deliberate reasoning, the likelihood that entrepreneurs form the belief they should act on an incremental potential opportunity is enhanced (while the likelihood that they form the belief they should act on a radical potential opportunity is diminished). In sum, these cognitive processes, which are largely unconscious, have an important impact on how entrepreneurs craft strategies based on their recognition and evaluation of new business opportunities.

While, according to the framework of this book, new venture strategies start in entrepreneurs' minds, entrepreneurs' interactions with the social environment play a key role in further developing opportunities. Specifically, both the entrepreneurial team context and entrepreneurs' communities of inquiry—the groups of potential stakeholders that provide feedback to entrepreneurs on the veracity of their potential opportunities—influence progress in opportunity development. Our study of eight ventures (Shepherd et al., 2020) showed that entrepreneurial teams composed of varied specialists make more progress in opportunity development than teams of generalists. This is not necessarily an expected finding because entrepreneurs are often described as jacks-of-all-trades (Lazear, 2005) who have multiple and diverse skills and competencies. Indeed, one might argue that teams with multiple skills and competencies could either be composed by combining varied specialists or by combining generalists. However, the study we introduced in Chapter 2 illustrated that teams of varied specialists tend to be superior to teams of generalists when it comes to developing entrepreneurial opportunities.

The reason why teams of varied specialists tend to make more progress in opportunity development seems to be that they more effectively build and engage communities of inquiry to get feedback on their potential opportunities. Compared to teams of generalists, teams of varied specialists engage broader communities, interact more frequently and openly with community members, and use more basic prototypes to demonstrate their opportunities to their communities. In collecting feedback, these teams of varied specialists focus on disconfirming and novel information that challenges their current opportunity conjectures, while teams of generalists tend to seek confirming information that is in line with their conjectures. Therefore, while feedback on potential opportunities has an important influence on new venture strategies, the nature of the feedback collected and the way potential feedback sources from a community of inquiry are approached varies among teams composed on varied specialists versus generalists. These differences explain why the strategic decisions made by teams of varied specialists tend to better facilitate opportunity development than the strategic decisions made by teams of generalists.

While the strategies new ventures implement differ in the extent to which they lead to success in opportunity development, there are additional challenges entrepreneurs face along the way. In Chapter 3, we introduced the lean startup framework as a collection of strategizing tools entrepreneurs can use during the opportunity- and venture-development processes. This framework consists of five building blocks: (1) identifying and evaluating market opportunities, (2) designing business models, (3) engaging in validated learning (including customer development), (4) building minimum viable products (MVPs), and (5) learning whether to persevere with or pivot from the current course of action (Shepherd & Gruber, 2020). In contrast to the focus on one particular opportunity in Chapters 1 and 2, the lean startup framework (Chapter 3) emphasizes that new venture strategies can involve the consideration of multiple opportunities. An entrepreneur generates and evaluates an opportunity set, from which he or she selects the most promising opportunity to pursue. Importantly, this assessment involves all elements of a venture's business model, including, for example, key partners and activities as well as costs associated with producing and distributing the venture's offerings. Therefore, the lean startup framework goes beyond a focus on a potential opportunity but involves key parts of an emerging organization for developing a new venture strategy.

Since the lean startup framework understands a business model as a set of hypotheses that an entrepreneur formulates, tests, and validates, this approach emphasizes learning as a central activity in crafting a new venture strategy. Key to this learning is building an MVP, which includes only the minimal features needed to test the veracity of the focal venture's business model. Given the high uncertainty new ventures face, MVPs are a cheap way to fail. Indeed, when feedback from a venture's community of inquiry suggests that an MVP needs to be changed to address potential customers' needs, these changes can be more easily implemented than if such feedback is received on a final product with multiple features. Indeed, the feedback entrepreneurs receive may trigger them to change the direction of their ventures substantially ("pivot"). This future-oriented co-creation approach of the lean startup framework contrasts strategy formulation in established firms, which typically relies on extensive planning based on the assessments of the past and the present (e.g., Rindova & Martins, 2021; Wolf & Floyd, 2017).

Further, our framework in Fig. 1 suggests that organizing an emerging venture is an important step in crafting a new venture strategy (Shepherd et al., 2020). In particular, Chapter 4 of this book explained how an entrepreneur decides on and enacts a particular vision for his or her venture and implements the business model he or she believes (e.g., based on the lean startup framework) is most suitable to realize this vision. Therefore, the vision of the founder or the entrepreneurial team is a key driver of the focal new venture strategy and impacts the activities and processes the founder or team pursues to establish the venture. These processes and activities include, for example, human-resource management, marketing, administration, research and new product development, and monitoring the competitive environment. Although entrepreneurs differ in how and to what extent they engage in these processes and activities based on their decision-making logic, use of formal and informal planning, diversification, entry mode, and innovativeness, they do so with the strategic goal to build an operationally reliable and effective emerging organization.

In addition to these activities, to facilitate venture emergence, entrepreneurs must build legitimacy for their ventures; that is, they must use some form of endorsement to ensure that important audiences (e.g., investors, customers, employees) assess their new ventures as desirable, acceptable, and appropriate (e.g., Fisher et al., 2017). For example, to achieve legitimacy, founders and entrepreneurial teams can signal their

experience and competencies; their affiliations with prestigious institutions, such as well-known incubators, universities, and corporate alliance partners; and/or their past achievements, such as certifications for their processes and products. Finally, enhancing the legitimacy of a new venture as part of the strategizing process may include the entrepreneur developing an organizational identity that is meaningful to the venture's audience based on aligned values and beliefs between the entrepreneur and the audience but is also distinctive from existing organizations to emphasize the venture's uniqueness and novelty.

Once a new venture strategy has successfully promoted new venture emergence, this strategy has to be adapted to facilitate scaling—namely, spreading excellence within a venture as it grows (Shepherd & Patzelt, 2021). As we explained in Chapter 5, key to effective scaling is managing knowledge such that it is effectively distributed throughout the focal venture. The venture's members may accumulate new knowledge either through their own experiences (learning by doing) or by observing the experiences of others. This accumulated knowledge then needs to be communicated to other venture members, which requires the establishment of communication channels that facilitate knowledge articulation and codification. Further, relocating knowledge repositories (people, tasks, tools, and templates) within the venture can facilitate the effective spreading of scaling-relevant knowledge within the venture. Finally, effectively connecting knowledge repositories through the development of social capital, formal structures, and improvisation provides the organizational environment that helps spread excellence within the growing venture. Therefore, our framework posits that adapting new venture strategies for scaling requires founders to pay close attention to managing knowledge and its distribution within their organizations.

Our knowledge-based framework of scaling also emphasizes the dynamism of developing a new venture strategy. In particular, we suggest that the relationship between knowledge and scaling is not unidirectional; as a venture scales, this has implications for accumulating, communicating, relocating, and connecting knowledge within the organization. Therefore, founders must continuously adapt their new venture strategies to the changing structures and processes required during scaling. Indeed, as ventures grow, it may turn out that their founders do not have the skills and competencies required for scaling, leading to their replacement with professional managers (Wasserman, 2003). These incoming

managers then craft strategies that allow the new ventures to further scale their activities and grow.

In providing an overview of our own academic work (with coauthors and building on others' work), in this book, we have attempted to highlight key issues that we find important for developing a new venture strategy. We hope that scholars, entrepreneurship instructors, and practitioners consider this summary useful for developing their professional profiles and careers.

References

Fisher, G., Kuratko, D. F., Bloodgood, J. M., & Hornsby, J. S. (2017). Legitimate to whom? The challenge of audience diversity and new venture legitimacy. *Journal of Business Venturing, 32*(1), 52–71.

Lazear, E. (2005). Entrepreneurship. *Journal of Labor Economics, 23*, 649–680.

Rindova, V. P., & Martins, L. L. (2021). Shaping possibilities: A design science approach to developing novel strategies. *Academy of Management Review*, forthcoming.

Shepherd, D. A., & Gruber, M. (2020). The lean startup framework: Closing the academic-practitioner divide. *Entrepreneurship Theory and Practice*. https://doi.org/10.1177/1042258719899415.

Shepherd, D. A., McMullen, J. S., & Ocasio, W. (2017). Is that an opportunity? An attention model of top managers' opportunity beliefs for strategic action. *Strategic Management Journal, 38*(3), 626–644.

Shepherd, D. A., & Patzelt, H. (2018). *Entrepreneurial cognition: Exploring the mindset of entrepreneurs*. Springer Nature.

Shepherd, D. A., & Patzelt, H. (2021). A call for research on the scaling of organizations and the scaling of social impact. *Entrepreneurship Theory and Practice*. https://doi.org/10.1177/1042258720950599.

Shepherd, D. A., Sattari, R., & Patzelt, H. (2020). A social model of opportunity development: Building and engaging communities of inquiry. *Journal of Business Venturing*, 106033.

Shepherd, D. A., Souitaris, V., & Gruber, M. (2020). Creating new ventures: A review and research agenda. *Journal of Management, 47*(1), 11–42.

Wasserman, N. (2003). Founder-CEO succession and the paradox of entrepreneurial success. *Organization Science, 14*(2), 149–172.

Wolf, C., & Floyd, S. W. (2017). Strategic planning research: Toward a theory-driven agenda. *Journal of Management, 43*(6), 1754–1788.

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https://doi.org/10.1007/978-3-030-78935-0