UNFOLDING THE MICRO-PROCESSES OF STRATEGIC DECISION-MAKING: THE ROLE OF EXPERIENCE-BASED KNOWLEDGE

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ABSTRACT

We build on the evolving literature on the role of pre-founding knowledge by exploring how individual experiences are shaped pre-founding and are then translated into venture-level actions post founding. We combine an ethnographic study at a newly formed technology venture with in-depth analysis of the 3016-page pre-founding communication log between the new venture founding team members during the entire process of founding team formation. We show that three accumulation mechanisms, socialization, experimentation and imitation shape a shared understanding about the new venture's strategy. We suggest that this shared understanding leads to entrenched actions in a powerful and causative manner and that founders develop post-founding actions to reinforce this shared understanding. Our findings reveal a paradox by showing how prior socialization experience imposes rigid thinking in a founding team which at the same time impose the stability and commitment to change and innovate in the industry.

INTRODUCTION

The imprinting impact of founders and their teams on strategic decision-making and managerial choices in young ventures has long attracted interest (Beckman, 2006). The imprint of founders endures long after they have left the venture and hence is an important element in understanding new venture behavior (Baron, Hannan, & Burton, 1999). More recently, an emerging literature suggests that the variety of pre-founding experience impacts the number of strategic choices an individual can make (Fern, Cardinal, & O’Neill, 2012; Furr, Cavarretta, & Garg, 2012), determines the market applications founders are able to envisage in technology ventures (Gruber, MacMillan, & Thompson, 2008, 2013) and influences the extent to which they undertake competence destroying technological decisions (Furr, et al., 2012). The overall conclusion is that knowledge accumulated through experience induces cognitive entrenchment at the individual level (Dane, 2010), which leads to path dependencies at the venture level (Dencker, Gruber, & Shah, 2009). To preserve the venture's ability to adapt, the literature suggests the need to introduce cognitive variety through attracting founders from different backgrounds (Eisenhardt, Furr, & Bingham, 2010).

However, while these emerging insights are promising, we still have an incomplete picture of the link between pre-founding experience and post-founding venture-level actions. Analyzing this missing link is important because it provides an insight into the neglected question of how the transformation from pre-founding knowledge to post founding actions occurs. To our knowledge, the literature does not take into account the complex mechanisms which shape and transform pre-founding experience into knowledge (Felin & Zenger, 2009). and assumes that collective knowledge is the sum of individual forms of knowledge (Cohen & Levinthal, 1990). Hence, our goal is to build on this evolving literature to obtain a much more fine grained analysis of how
individual experiences are shaped pre-founding and are then translated into venture actions post founding. Accordingly, we address the following research question: *How are individual experiences which are shaped pre-founding of ventures translated into team-level knowledge which impacts strategic actions post-founding?*

To unpack this process, we combined an ethnographic study at a newly formed technology venture with in-depth analysis of the pre-founding communication log between the new venture founding team members (during the entire process of founding team formation). The communication log comprises 3016 pages and gives a unique view on how individual experiences are transformed into collective beliefs and knowledge. During the participant observation period (nine months after founding), we identified the most crucial strategic choices and actions made during that time and traced them back to the processes of knowledge development which had taken place during the 6 years before company start-up. The choice of a young technology venture is appropriate to our research purpose because young technology entrepreneurs are confronted shortly after start-up with a variety of decisions they have to take to adjust their value proposition to unfolding market conditions.

Based on our observations, we develop an emergent theoretical framework for how new ventures learn from prior experience and how this impacts strategic actions. First, learning from experience relates to three accumulation processes: (1) socialization, (2) experimentation and (3) imitation. Importantly, then, we uncover a novel finding that is relevant for understanding the impact of prior experience in an organizational context: socialization experience is likely to be used to delineate the strategy in a new venture. Pre-founding socialization experience specifically entrenches actions after founding and strongly shapes a delineating strategic groundwork within which the company maneuvers.

We contribute to the organizational learning literature and have implications for the emerging literature on the cognitive foundations of strategy and entrepreneurship. We argue that prior socialization experience creates a shared understanding between founders which creates stability in an otherwise dynamic and uncertain environment, however, it may also lean towards a high level of rigidity and inefficiency in a company. Additionally, our findings tentatively indicate that change in an industry is not necessarily created by flexible thinking in a company but by a duality between cognitive flexibility and cognitive rigidity in a team-level understanding.

**Theoretical Background**

A growing body of research has highlighted the role of prior experience in the way entrepreneurs decide how to develop business opportunities (Gregoire, Corbett, & McMullen, 2011; Shane & Venkataraman, 2000). The cognitive psychology literature has described how experts learn and develop more advanced cognitive schemas. Schemas are structures containing “knowledge about a concept or type of stimulus, including its attributes and the relations among these attributes (Fiske & Taylor, 1991: p. 98). When people build up experience, these expert schemas tend to become larger in terms of the number of attributes they contain and tend to increase in terms of the number of interrelations between the attributes (Fiske & Taylor, 1991). Together, the number of attributes and the number of interrelations between attributes determine the complexity of such schema (Dane, 2010). The theory further distinguishes between “declarative knowledge” representing knowledge about facts and “procedural knowledge” representing knowledge about
procedures (Argote & Miron-Spektor, 2011). For instance, a technology entrepreneur develops more declarative knowledge about the technology the longer s/he has done research in this technology. Likewise, the same technology entrepreneur develops more “procedural knowledge” when s/he has approached this technology from role perspectives.

More declarative and procedural knowledge, however, may lead to cognitive entrenchment of entrepreneurs (Dane, 2010) and in turn limit the number of perspectives taken to solve problems. This entrenchment decreases the likelihood of adapting to changes in the environment and makes it less likely one will come up with radically new business ideas. For instance, Furr, et al. (2012) showed how founding teams with a unilateral composition of declarative knowledge likely identified competence-enhancing change rather than competence-destroying change. Further, Gruber, et al. (2008) found that the degree of declarative knowledge in marketing and technology negatively impacted the number of market applications identified for a technology. This is potentially caused by a “knowledge corridor” which limits entrepreneurs in their local search processes (Gruber, et al., 2013). In line with these inquiries, Fern, et al. (2012) suggest that procedural knowledge may have an even bigger entrenchment impact on the product market choices of entrepreneurs than declarative knowledge. In sum, the literature seems to converge on the idea that more experience and knowledge leads to entrenchment. Therefore, new venture studies typically show that knowledge diversity at the founding team level increases the degree to which new ventures engage in novel activities and are able to adapt to changing circumstances. A naïve interpretation of these findings would be that the choices made by entrepreneurs post-founding are quite predictable if one knows their domain of pre-founding experience.

While the cognitive psychology literature calls for founding teams with diverse experiential backgrounds to induce cognitive flexibility at the team level, the entrepreneurship literature pictures a completely different process about founding teams (Clarysse & Moray, 2004; Ruef, Aldrich, & Carter, 2003). Scholars in the team literature suggest that founders typically self-select other “like-minded” team members (McPherson, Smith-Lovin, & Cook, 2001). This form of “homophily” means that team members are chosen on the basis of similar characteristics, such as overlapping experiences and beliefs. In short, entrepreneurs who have worked in one particular domain tend to prefer other team members with similar experience (e.g. same technology). Moreover, they will select these team members within their own personal networks. Hence, new ventures are often founded by teams of friends, family members, and work colleagues with similar backgrounds and experiences. So, the entrepreneurship literature suggests that most founding teams will be rather homogeneous because of natural processes of self-selection, while the literature on the cognitive origins of entrepreneurship tends to call for knowledge diversity as a driver of change and a source of strategic agility (Furr, et al., 2012).

This apparent paradox arises because scholars studying the impact of pre-founding experience merely show which domains of knowledge (e.g. market, technology) matter in post-founding actions (e.g. Dencker, et al., 2009; Gruber, et al., 2008, 2013) and how declarative and procedural knowledge impacts problem solving, pattern recognition and framing (e.g. Fern, et al., 2012; Furr, et al., 2012). Yet, scholars have not shown how pre-founding experience is accumulated into individual and organizational knowledge structures and how the nature and the dynamic of this experience accumulation process matter in later strategic actions. Past studies have relied on the assumption that the stock of team-level knowledge reflects the sum, the average and the variation of its team members. However, as collective knowledge is much more complex that being a mere
sum of individual components (Cohen & Levinthal, 1990; Fiol, 1994), we lack an explanation of how individual experience is translated into team-level knowledge and, consequently impacts strategic actions in young ventures.

**Methods**

The proposed research question poses considerable demands in terms of research design and methods. The development of pre-founding experience into knowledge and beliefs can be a long process which accumulates over time. Therefore, a comprehensive analysis of this process suggests the need for intensive qualitative methods involving intense observation and informal speech of founding team members. To address these challenges, we performed a longitudinal inductive single case study (Pettigrew, 1990) including both participant observation during nine months after founding and an extensive content analysis of the founders’ communication log during the six years before founding. We combined these two processes of data analysis with grounded theory building to investigate the process of how individual experiences are shaped pre-founding of ventures and are then translated into team-level knowledge which impacts strategic actions post-founding.

**Research Setting**

Within the sheet music market, we follow “ScoreBridge” (i.e. a pseudonym to preserve the anonymity of the company), a technology venture founded in 2011 to enter the “nascent” market of digital sheet music (Santos & Eisenhardt, 2009). This venture and the sheet music industry itself are particularly appropriate for our purpose. The sheet music industry is a mature industry where traditionally composers or songwriters are copyright owner of their composition and license that composition to a sheet music publisher. The sheet music publisher in return collects fees whenever the composition is used and pays a portion of royalties to the copyright owner. In general, sheet music is sold as “pay per copy” or “pay per view”. In the first, you pay for one copy but you may not distribute copies, make recordings, or alter the piece without express permission. In a music school, it means that a teacher has to pay for an extra copy if s/he wants to teach, share or alter a music piece for a student. In the latter, “pay per view”, you hire sheet music and contract the hard copies from the copyright-owner or their publisher for a performance during a specified period of time and for a specified number of performances. An orchestra, for instance, rents a sheet for a piece of music during the period that it plays the piece. At the end of the contracted use, these sets are then returned to the publisher. This process requires a high cost of specialist printing, administering the publication, warehousing and distribution.

The digital revolution in the 2010s with on one hand a widespread use of mobile networked devices, mobile telephony, internet websites and social networking, and on the other hand cloud computing has been the starting point for a fundamental change in the sheet music industry. New entrants developed business models which ranged from incremental process innovations in the industry (e.g. online retailers offering downloadable PDFs of sheet music) to a revolution in the whole industry (e.g. bypassing the publishers by offering online sheet music streaming through freemium subscription). ScoreBridge belongs to the latter category of companies and develops a user-generated sheet music content website. Because of its radical approach, it faces Knightian uncertainty in its environment (Wiltbank, Dew, Read, & Sarasvathy, 2006). Consequently, the company has to make a number of decisions to adjust its value proposition to unfolding market
conditions. Additionally, a nascent market is specifically characterized by an undefined or fleeting industry structure, by unclear or missing product definitions and by a lack of a dominant logic to guide actions (Santos & Eisenhardt, 2009).

Data Collection

Data collected covers more than 8 years. Data collection involved (1) a period of intense participant observation, (2) formal and informal interviews, (3) extensive analysis of a communication log which covered 2005 up until 2013 and (4) documentary analysis (full overview upon request). We complied with the commonly recommended methods for ethnographic work (Johnson, 1990; Van Maanen, 1979). Data collection aimed at understanding the pre-founding experience of the founders. It particularly focused on gaining an understanding of how pre-founding experience interfered with current actions, the conditions in which pre-founding experiences mattered, and the reasoning behind whether or not pre-founding experiences were accumulated in the company.

Over a period of nine months, one author “got in there and got her hands dirty” (Gioia, Corley, & Hamilton, 2013), spending two to three days per week, and six to eight hours per day in the field. In a first stage, preliminary interviews were conducted with the CEO-founder and some business meetings were observed, such as conference or project meetings, in order to become familiar with the product, the market and the customer profile. During those meetings company stakeholders were also informally interviewed (e.g. members of a partnered research institution or past co-tech developers). At the beginning of the study, it was explained to the founders that a study of decision making in start-ups was being conducted. Since the three co-founders were living in other countries, the first contacts with them were mainly digital. This initial digital contact made it possible to observe the decisions and actions during the team meeting without interfering. Moreover, this author was careful that her behavior did not affect the actions of ScoreBridge. During team meetings, she would constantly jot field notes, trying to capture as much conversation as possible verbatim. She would afterwards expand these notes recounting “what happened” in detail while memories were still fresh. In a second stage, after three months, she gained the trust of the founders and she was familiar enough with the products and market. From then on, she participated in operational tasks. For instance, she assisted in a market study by analyzing data. In a third stage, the founders started to see her as part of the team, so she could attend business meetings with external stakeholders such as investors and potential B2B customers or engage in consultancy practices conducted by ScoreBridge. In total, the participating author observed 49 internal and external meetings which resulted in 210 single-spaced pages of field notes. The meeting observations provided many rich opportunities to witness founders and stakeholders discussing a range of topics on market and technology evolution and to observe the decision process of founders. Therefore, by drawing upon overt involvement and by not performing the strict role of a founding team member, she managed to balance the roles of participant and observer (Spradley, 1979).

In total, she conducted 44 interviews, all of which were recorded and transcribed (264 single-spaced pages of notes). She started with preliminary interviews along an open format with the founder and co-founders in order to become familiar with the venture’s cultures and strategy. Initially, the CEO-founder served as the primary informant. After two preliminary
formal interviews with the CEO-founder, a more structured interview protocol was developed, based on theoretical considerations. Those formal interviews were semi-structured and became increasingly focused over the course of the study. Each early interview focused on how the founders had identified the opportunity, how they had identified which technology was sufficient, how they developed the technology, how they had identified their market in a nascent industry, and how they had configured their revenue model. Overall, this process resulted in 16 formal interviews with founder and co-founders, and 26 with key informants (consultants, industry experts and informants working at competing companies). Apart from these formal interviews, many informal interviews with internal and external stakeholders (e.g., investors, potential B2B partners, open source developers or hackday organizers) were conducted. The informal interviews and observations offered relaxed, spontaneous opportunities to investigate the actors’ beliefs and opinions. The researcher ended participating and interviewing when the research team agreed that the stage of ‘theoretical saturation’ had been reached (Strauss & Corbin, 1997). Being aware of the risk of “going native” or being too close and consequently adopting the informant’s view, we adopted “an outsider perspective – with a co-author becoming a devil’s advocate, whose role it was to critique interpretations that might look a little too credulous or naive” (Gioia, et al., 2013: p. 19).

In addition, we analyzed an extensive communication log which registered the discussions the founders had among each other in the pre-founding and post-founding phase. This extensive communication log registered most of the communication that took place between Founder1 (CEO-idea owner) and his eventual co-founders, Founder2 and Founder3. Although communication by writing might seem surprising at first sight, it is very much the norm in an open source project: the success of an individual within an open source project requires significant specific knowledge and access to others who may possess information required for success (Jeppesen & Frederiksen, 2006). Specifically, the communication log in ScoreBridge was introduced for internal use between the founders. The log did not only cover typical technological topics, but also covered communication about business-related topics such as the market, the users, the customers and competitors. Occasionally, communications with consultants or advisors, who had an interest in joining the project, were registered. The communication log (devSymfopedia.org, later dev.ScoreBridge.org) started in August 2005 and still continues. In the pre-founding period 2488 unique blogs were posted, resulting in 1812 single-spaced pages of notes. The communication logs touched upon topics ranging from pure technological development issues (e.g. “Need clarification regarding dominant 11th chord”) to business decisions (e.g. “Symfopedia Value Chain”). They provide a good insight into how the pre-founding team members build up and share experiences and beliefs eventually leading to the start-up of the venture and impacting on the strategic actions after start-up.

Finally, we included contextual information such as public communications, team meeting reports (outside the participant observation window), presentations slides, business plans, press coverage and video presentations. These data sources helped us to familiarize with the organizational context and supported us in data triangulation for the purpose of increasing study credibility (Jick, 1979). By conducting data triangulation, we validated the robustness of our observations with data which was constructed at different points in time.
Data Analysis

We carried out data analysis in three main stages. In the first stage, we developed a review of post-founding actions of ScoreBridge. In the second stage, we identified the beliefs and knowledge of the founders, expressed and shared during decisions and actions in the post-founding time span. In the third stage, we focused on answering our research question: we identified how pre-founding experience was translated into the current shared understanding of the founders and basically captured the impact of pre-founding experience.

Stage 1: Creating a review of post-founding actions. The output of the first stage of the data analysis was a set of “strategic actions” composed of quotes from interviews, meetings, documents, and field notes. This stage began with one author (i.e. the participant observer) interpretively coding each of the field transcripts and interview notes. She coded anything that revealed what founders, industry experts or informants at competing companies considered to be a potential differentiator for the company and hence, listed every “strategic action” which arose in ScoreBridge post-founding (2011-2013). Examples included “development of a mobile app”, “hire a freelance marketer,” and “no partnerships with sheet music publishers”. The author constructed the company actions by tracing all the chronologically ordered raw data and then backed up the coded actions with at least 4 quotations from interviews, meeting transcripts, archival documentation, and field notes. Then, she coded the strategic choice which the founders had made at start-up and traced to which degree post-founding actions deviated from their initial choices.

After a first round of coding the strategic actions, the author discussed the results with the “devil's advocate” co-author (Gioia, et al., 2013) and who held an outsider perspective. They repeatedly discussed results in personal meetings to arrive at consensus on specific strategic actions of ScoreBridge. As the meetings and iterative coding proceeded, additional actions were generated, discussed and then added to the list. Using this insider-outsider procedure, a solid review about company actions emerged. In total 44 specific actions were generated. The transcripts of the interviews, meetings, archival documents and field notes were then entered into NVivo a computer program to facilitate retrieval of data during later analyses. Moreover, the company actions were mainly captured during the participant observation and, consequently, largely gathered as an action which was unfolding rather than in retrospect. This real-time data collection maximized the validity of the data, ensured triangulation through multiple sources and avoided biases associated with retrospective accounts of action. All founders confirmed that the final set of actions covered the major decisions that had arisen post-founding.

Stage 2: Tracing experience-based knowledge structure in founding actions. This stage involved the identification of experience-based knowledge structures underpinning the strategic actions identified in stage 1. The literature on experience shows that prior experiences will not directly affect actions, but that it is processed and transformed into knowledge structures which can be observed in speech and action (Argote & Miron-Spektor, 2011). Different scholars refer to these knowledge structures as expert schemes (Dane, 2010), mental models (Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000) or beliefs (Walsh, 1988). These knowledge structures guide and determine an organization's decisions and actions that emerge from individuals' experience (Felin & Zenger, 2009; Shane & Venkataraman, 2000). In this paper, we use “beliefs” as a functional concept to address the knowledge structure underpinning the strategic actions. First, based upon participant observations, external meetings, archival data and ScoreBridge's communication log both authors
conducted in-vivo coding. They coded statements and expressions which showed how beliefs had an impact on the strategic direction and actions of ScoreBridge. We considered expressions or statements as beliefs when they were repeatedly verbalized over time and were applied as arguments in decision-making and substituted for direct information. Some beliefs were unique to founders, such as “who stands closest to the customer wins”, but most were common. Then, we used labels such as “network effect” or “no vendor-lock in” which were direct expressions of the founders during team discussions and strategic decision-making. Since some beliefs are not obviously visible at first impression: our ethnographic method of “going native” was crucial to fully capture the beliefs of the founders, since those are often expressed informally and implicitly (Walsh, 1988). Moreover, it was only after a period of months of participation that the beliefs could be modeled fully.

Stage 3: Identifying the roots of pre-founding experience: pre-founding experience accumulation. The final stage of our data analysis focused on identifying pre-founding experience associated with the post-founding beliefs and consequent actions. This stage involved three steps. First, we analyzed the pre-founding data which mainly consisted of the blog posts of the communication log before founding ScoreBridge. The high number of blog posts (2488 blog posts before founding) acted as a catalyst for unique insights but was also a challenge to analyze. Therefore, we opted for a time-ordered display by event-listing the data, which allows the identification of causal relations (Miles & Huberman, 1994). The author engaged in the fieldwork and a second researcher independently synthesized the different data sources of the pre-founding stage of ScoreBridge into a case history that described the pre-founding chronology. This author and the second researcher then triangulated their timelines and synthesized a time chronology for ScoreBridge (Jick, 1979). This first step was an inductive and recursive process in which the researchers cycled through the timeline many times to capture important components related to the present strategy of ScoreBridge. It demanded “native experience” in the company in order to position the discussions in the communication log, to capture the relevance or irrelevance of certain events, and to understand the impact of past events for the present reality. For that reason, the participant observation was particularly germane. In the second step of this stage, the author engaged in the fieldwork in-vivo coded the time-ordered display, while another author once more engaged as an outsider and iteratively challenged the findings (Strauss & Corbin, 1997; Van Maanen, 1979). The in-vivo codes directly connected with pre-founding experience or processes by which pre-founding experiences was transformed into knowledge structures. Third, when all authors agreed on the in-vivo codes, we engaged in axial coding. We compared the various first-order labels and searched for high-order themes (Strauss & Corbin, 1997) to build up more abstract descriptions of how pre-founding experience is accumulated. To make sense of the content relationship between certain labels, we carefully studied conflicting and comparable theories in entrepreneurship and strategic management literature to build up internal validity and raised the theoretical level of the constructs and their relations (Eisenhardt, 1989). As such, by bringing theoretical insights and data coding together, we sharpened generalizability and obtained constructs with improved abstract and robust descriptions of the accumulation of pre-founding experience and its impact in post-founding company actions. Figure 1 shows the data structure that describes the final set of second-order themes and the first-order concepts from which they were derived.
Findings

Our research question asks how pre-founding knowledge impacts post-founding actions. Figure 1 illustrates the structure of the data from first-order categories used by informants to researcher-induced second-order themes. Figure 1 is not a causal or dynamic model but mainly represents the core concepts of pre-founding experience accumulation and post-founding strategic action. Before discussing the theoretical implications of our observations, we outline the process through which pre-founding experiences are configured into a shared understanding between the founders which ultimately entrench future actions. Overall, our study comprised two stages. In a first stage, we analyzed how experiences were accumulated over a pre-founding period of 6 years. In a second stage, we listed the post-founding actions of ScoreBridge and investigated in detail how those post-founding actions were influenced by pre-founding experience. Figure 2 gives an overview of this process.

First, we observed that in the pre-founding period the founders accumulated three categories of experiences through three mechanisms: (1) socialization through community, (2) experimentation with products and (3) imitation of other companies. The three mechanisms seemingly channeled the pre-founding experiences into strong personal knowledge structures and beliefs. First, we observed how founders identified themselves with a “community” and internalized the community’s norms, and values. As such, we noted how “socialization” shaped certain founding knowledge and beliefs and named this “socialization experience.” Second, our study of pre-founding experiences showed that the founders actively experimented with products and/or ventures. This resulted in “experimentation experience.” Third, the knowledge and beliefs that the founders used in founding and post-founding was built upon past analyses of companies and/or individual entrepreneurs which the founders perceived as peers or best practices. Thus, past “imitation experience” informed the strategy at start-up. Our model indicates that the founders’ past experiences and especially their socialization experience helped them learn as a group and configured a shared understanding about the strategic choices between each other. As such, in this case the open source community was be a dominant “source” of pre-founding experience.

Our second set of findings focused on how pre-founding knowledge impacted post-founding company actions. ScoreBridge started as a company based on a business idea which included following strategic choices at founding: (a) the company would use open source technology to further develop its product; (b) it would use bootstrapping as a main source of financial capital as means to stay financially independent from other stakeholders; (c) it would target the B2C market of non-professional musicians as a primary market; (d) it would develop a user-generated platform and implement a freemium revenue model, (e) the focus would first lie on building a user community which co-creates digital sheet music content before monetizing this community. Our analysis studied all the strategic actions that ScoreBridge made after founding. We made an assessment of the post-founding actions in relation to the strategic choice at founding in 2011. We argue that overall three categories order the actions after founding. First, a number of actions were actually “entrenched” by the choices made at start-up. The strategic choice at the start up seemingly formed a “sticky” base and was no longer questioned since it was built upon their shared pre-founding experience in general and shared socialization experience in specific. Second, some actions were taken to “enforce” the strategic choice at start-up. These actions confirmed the strategy which was rather insecure at founding due to a lack of direct industry experience. We further argue that the self-selection nature of the actions possibly biased the convictions of the
founders. Third, some actions were taken to “adapt” to unfolding or changing circumstances. We suggest that adaptation only occurred in the strategic domains where the founders lacked direct pre-founding experience but not in the areas of pre-founding experience such as technology and product development.

Third, within this framework we suggest a hierarchy in the three categories of past experience. In ScoreBridge, the nature of their pre-founding socialization process was identity-shaping and was, consequently, more personally imprinting than the results of experimental learning or imitative learning. We argue that the founders were socialized by the open source community in the sense that they identified themselves with the community and internalized and shared the communities’ skills, norms, customs and ideologies. Furthermore, we noted that socialization experience functioned as an advance organizer for integrating other past experiences such as experimentation experience and imitation experience into the founding strategy.

Fourth, we observed how pre-founding experience explicitly impacted ScoreBridge’s strategy at founding and post-founding. Pre-founding experience specifically entrenched actions after founding and strongly shaped a delineating strategic groundwork within which the company maneuvers. Choices in ScoreBridge regarding recruitment, partnerships and financing path were pre-determined by past experience in general and socialization experience in particular. Additionally, the founders enforced their actions by integrating feedback mechanisms which they learnt in their past participation in the open source community. In this way, the founders retained a degree of stability in their shared understanding.

**Discussion and conclusions**

A primary contribution is an emergent theoretical framework for how new ventures learn from prior experience and how this impacts strategic actions. First, learning from experience relates to three accumulation processes: (1) socialization, (2) experimentation and (3) imitation. Most organizational research on prior experience has up to now focused on the level of experience (e.g. novice versus expert) (Dencker, et al., 2009; Gruber, et al., 2013) and/or the domain of experience (inside-outside) (Furr, et al., 2012). In contrast to previous work, we propose that variety in experience accumulation is as equally important as variety in experience and knowledge. Importantly, then, we uncover a novel finding that is relevant for understanding the impact of prior experience in an organizational context: socialization experience is likely to be used to delineate the strategy in a new venture. Past research has noted how founders build an “iron cage” and has supported notions of path-dependence in the evolution of organizational structures that founders bring to new enterprises (Baron, et al., 1999). We extend this view and unravel the process of how initial constraints in founders’ choice sets already have deep roots long before founding.

Second, existing studies show that entrepreneurs bring with them a repertoire of cognitions and behaviors acquired in prior jobs (Beyer & Hannah, 2002), that a variety in cognitive pathways fosters cognitive flexibility by enlarging the field of potential alternatives of which an actor is aware (Johnson-Laird & Byrne, 1991), and that a cognitively flexible venture may be able to persist through many generations of technology rather than failing (Furr, et al., 2012). Data in this study, however, re-examine the question of innovation in the light of cognitive flexibility and demonstrate that the antecedents of innovation do not necessarily lie within a venture that thinks flexibly, but rather could be induced by a cognitive rigid venture that enters a new industry. In the remainder of this section, we discuss the implications of our observations for this literature.
Past Experience in a Community as a Source of Cognitive Rigidity. We contribute to organization theory by revealing socialization experience as a missing component of organizational learning in the early years of a venture. The relevance of prior experimentation (C. B. Bingham & Davis, 2012) and imitation (Bresman, 2013; Kim & Miner, 2007) have already been addressed in research. Those studies, however, did not adequately study the role of prior socialization experience and the presence of path-dependency since socialization experience informs the way past experimentation and imitation experience are integrated in a new venture. Theories of organizational learning often draw on theories of individual knowledge. In the behavioral theory of the firm, organizational knowledge and learning can be viewed as a form of incorporating results of prior experimentations (Miner, Bassoff, & Moorman, 2001). Likewise, in studies of analogies and metaphors (Christopher B. Bingham & Kahl, 2013), organizational knowledge and learning is seen as a result of imitating other companies. Yet, both interpretation are a reflection of individual learning theories. Unfortunately, since organizational learning and knowledge is more than the sum of individual-level experience, we must explicitly consider multiple levels. Our study helps tackle this problem by providing a more nuanced and empirically grounded understanding of what pre-founding experience potentially means. In particular, we highlight the reinforcing effect of shared prior socialization experience by the founders. This prior socialization process is important for organizational learning since it establishes an endowment in the venture, yet, it has been overlooked in research. Prior socialization, notwithstanding, is not only personally imprinting but brings meaning in a new venture and helps creating shared understandings. Shared understanding, in turn, stimulates strategic stability that potentially tackles high uncertainty in an emerging and nascent industry. In our observations of ScoreBridge we noted how the founders’ shared understanding was built upon their long experience from the open source community. One of their competitors, in contrast, had a founding team which exclusively consisted of professionally educated musicians. That competitor team’s strategic choices conflicted with those ones of ScoreBridge: the musicians valued “high-quality sheets” and respected the “original composition and engraving of publishers”, hence calling the user-generated approach of ScoreBridge “illegal”. This result further suggests that entrepreneurs are more likely to exploit the knowledge gained from their own experience rather than explore the practices of competing firms when selecting a strategy for their new organization (Fern, et al., 2012).

Second, and perhaps more importantly, we emphasize the role of cognitions in the three processes of prior experience accumulation. We find that since experiences are cognitive reflections on past events, certain beliefs and knowledge will be more entrenching. Specifically, prior socialization experience, if shared, may become a self-fulfilling prophecy in the new venture and might develop biased interpretations of the company’s environment. Our observations of ScoreBridge during the post-founding stage showed how the founders increasingly believed in the “power of open source technology” and a “freemium business model”, while our observations at the start of Symfopedia in 2005 showed a more open spectrum of strategic choices. Problems particularly occur when entrepreneurs do not manage to break their past experience and their cognitive alignment with a community. These findings might also explain some of the inconclusive results in empirical work on the impact of pre-founding experience on post founding decisions. For instance, Gruber, et al. (2008) find that prior entrepreneurial experience turns the negative relation between technology and marketing experience into a positive one for finding new opportunities. Our theoretical model potentially explains this empirical observation. It is likely that more entrepreneurial experience decreases the imprinting effect of prior socialization and, as such, entrepreneurs’ thinking is no longer demarcated by socialized experience and resultant local search. Due to more prior entrepreneurial experiences, founders will increasingly experiment with markets and/or application.
In sum, paradoxically, we argue that although prior socialization experience creates a shared understanding between founders which shapes stability in an otherwise dynamic and uncertain environment, it may also result in a high level of rigidity and inefficiency in a company.

**Socialization experience impacts Team Formation.** Our study also contributes to the emerging literature on the cognitive foundations of entrepreneurship and strategy. Much of the literature on founding teams suggests that inserting a diversity of experiences leads to exploration (Beckman, 2006) and disruptive innovation (Furr, et al., 2012). The causal relation put forward is that team diversity leads to cognitive flexibility. Our theoretical model sheds further light on this puzzle. We observed how similar socialization in a professional community greatly impacted team formation since the founders developed a similar “inventory” of “community beliefs”. Socialization experience and community beliefs were a delineator and determined team selection and even recruitment. Hence, we might argue that exactly because the primary founders belonged to a particular community, there is room to attract members with conflicting ideas without creating internal instability in the founding team due to new ideas and experiments. Future studies on founding teams should further explore this and might change their focus from diversity in founding team expertise towards the mechanisms which facilitate the attraction of different opinions in the team.

**Post Founding Rigidity and Flexibility as a Duality.** The extant literature on knowledge suggests that flexibility and rigidity are extremes of a continuum (Eisenhardt, et al., 2010). The paradox of stability and change arises because the concepts are usually defined as opposites (Farjoun, 2010). Our hierarchical model of pre-founding experience and the impact they have on later company actions support the idea that rigidity and flexibility are a duality rather than a dualism. Our model shows how socialization experience enhances the formation and preservation of stability in a shared understanding between the founders. Hence, this process impacted rigidity in ScoreBridge’s strategic actions. For instance, the founders never criticized the use of open source technology, remained strongly focused on developing a user community before monetizing any other features, and developed more and more features before proving the technology in the application market. These kinds of socialization-induced choices can be seen as rigidities but they can also be seen as actions deemed necessary to disrupt and innovate in the traditional sheet music industry. In particular, this shared understanding provided a strong base to learn from experiments and imitation. The founders of ScoreBridge engaged in explorative behavior but were able to reflect adaptive actions as a function of their shared business logic. Our findings tentatively indicate that change in an industry is not necessarily created by flexible thinking in a company but because of a duality between cognitive flexibility and cognitive rigidity in a team-level understanding. Thus, rigidity in a new business logic can potentially disrupt the dominant logic of an existing industry. The dominant industry logic in the sheet music industry currently consists of copyright standards, licensing schemes and tight relationship with stakeholders. ScoreBridge’s entrenched actions are opposite and remain very consistent despite many counteractions of traditional sheet music publishers, distributors and even consumers. Their strategic approach has therefore the potential to first disrupt and then innovate the market. This illustrates how stability in team cognition enables change and adaptability in a nascent industry (Farjoun, 2010).

Overall, we contribute to the organizational learning literature and the emerging literature on the cognitive foundations of strategy and entrepreneurship. Our study contributes to completing the picture regarding the role of pre-founding knowledge in venture creation by exploring how individual experiences are shaped pre-founding and are then translated into venture-level actions post founding.
REFERENCES


APPENDIX

Figure 1. Data Structure

Figure 2. Grounded theoretical model of pre-founding experience accumulation.