

***Market Entry Decisions, Emergence Processes & Adaptation
in New Organizations***

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Abstract

This study contributes to research on organizational emergence by investigating one of the most profound decisions in new firms – their market entry. While the literature commonly assumes that the need to focus drives startups to operate in a single market, such an approach, however, comes at the expense of lower strategic flexibility. By conducting an in-depth, qualitative investigation of 25 new technology ventures, we find that different objectives push new ventures either towards a focused market-entry approach, or to a variety-generating approach that builds on parallel experimentation with different market domains. We identify and document three distinct approaches to market entry: focused, broad and vague, and, consequently, three fundamentally different types of organizational emergence processes. Our results also indicate that a venture's initial market-entry approach may significantly enhance, or constrain, the venture's ability to adapt over time. We outline several novel insights for the organizational, entrepreneurship and strategic management literatures.

Keywords: Focus-Variety; Market Entry; Multiple Market Opportunities; Organizational Emergence; Pivoting; Strategic Flexibility

1 Introduction

New ventures have to focus their resources on a single market opportunity in their attempt to establish themselves as viable organizational entities – at least this is the prevailing view of organizational theorists and entrepreneurship scholars (Audretsch, 1995; Brüderl, Preisendorfer and Ziegler, 1992; Reynolds, 1987; Sorenson et al., 2006). They argue that the scarcity of human and financial capital in emerging organizations leaves no other choice to entrepreneurs than focusing their efforts on a single market opportunity in order to enhance the efficiency of their operations (Wernerfelt and Karnani, 1987). Notably, this view on market entry has far-reaching theoretical implications, as the market entry decision of new firms is closely tied to other fundamental issues in organizational emergence – such as the way in which new firms develop their resources, define their organizational identity and earn their legitimacy.

Yet, by emphasizing a focused approach in new firms' market entry decisions, the existing literature has become fairly one-sided. As a result, we possess hardly any understanding of other types of entry approaches, and how they influence the emergence of new ventures. In effect, a focused approach to market entry may entail key drawbacks that will only become visible once an in-depth investigation of other entry approaches and their effects on new ventures has been conducted. In particular, it seems to us that the efficiency associated with a focused entry comes at the expense of lower strategic flexibility – and this could, in fact, be a major drawback given that new ventures are often created in uncertain environments (Evans, 1991; McGrath and MacMillan, 2000a). Case in point, by entering multiple markets at the same time, or by keeping several options for value creation open, entrepreneurs can generate variety and achieve greater flexibility in their potential courses of action – a logic that is akin to real options reasoning (McGrath, 1997) and selectionism (Pich et al., 2002; Sommer and Loch, 2004) in research on strategizing under uncertainty. Although such variety-generating approaches to market entry have yet to be systematically investigated and documented, the practitioner literature offers preliminary evidence suggesting that flexibility and experimentation (“pivoting”) are key to the venturing process (Mullins and Komisar, 2009; Ries, 2011).

Against this backdrop, the purpose of the present study is to offer a more encompassing perspective on market entry in entrepreneurship by looking beyond the currently prevailing focused entry approach and, specifically, by investigating how focus vs. variety-generating approaches in market entry decisions affect organizational emergence processes and outcomes. In order to arrive at a more complete understanding of market entry approaches in entrepreneurship and, in particular, to be able to appreciate the value inherent in flexibility-enhancing approaches, it is essential to consider the early life of the venture, the extent to which founders change their initial entry decisions (pivot), and how the initial choice of a focus vs. variety-generating approach affects the venture's ability to adapt its initial target market(s) choice over time. Only if these latter developments in the organizational emergence process are taken into account will scholars be able to truly understand the implications of different market entry approaches in new firm creation.

Given that fine-grained nature of our research interest, we engaged in an in-depth qualitative study of 25 new technology ventures. Because technological resources vary in their degree of fungibility (Penrose, 1959, Danneels, 2007), we sought to limit significant variation in the level of resource fungibility by sampling new ventures that operate in the technological field of "Imaging & Image Processing". We analyzed data collected through personal interviews with firm founders as well as from secondary sources using an inductive methodological approach (Miles and Huberman, 1994; Strauss and Corbin, 1998).

Based on our analysis, we identified three market entry approaches, primarily distinguished by the underlying cause which pushes new firms towards focusing or towards variety-generation: ventures pursuing a "*focused approach*" (i.e., focus sharply on single market opportunity), ventures pursuing a "*broad approach*" (i.e., generate variety to consciously avoid locking-in), and ventures pursuing a "*vague approach*" in market entry (i.e., generate variety in an unfocused search for a promising path).

Interestingly, variety-generation was found to be a surprisingly common approach in the firms' initial market entry strategy. This is a particularly important finding, considering that a laser sharp focus on a single market opportunity has been the default assumption of almost all research on new firm creation

(Gruber et al., 2008). Looking at the time after the initial market entry, we provide rare empirical evidence documenting how the majority of new ventures (72% of firms in our sample) had to adapt their initial market entry decision during the first three years of their existence, and we show how initial market entry decisions fundamentally affect the ventures' ability to change and adapt.

Given the largely novel character of our findings, they have a number of interesting implications for the organizational, entrepreneurship and strategy literatures, and give rise to intriguing questions for future research. Perhaps most fundamentally, they suggest that broad approach is an important, yet hardly understood approach to market entry in entrepreneurship.

2 Theoretical Background

Organizational emergence is the process of how new organizations come into existence and transform into operational entities (Gartner, 1985). During the emergence process, founders decide upon the core organizational features of their firms (Ambos and Birkinshaw, 2010), with one of the most fundamental organizational decisions relating to the target market(s) that a venture chooses to enter (Fern et al., 2012; Gruber et al., 2008).

2.1 The Importance of the Market Entry Decision for Emerging Firms

The initial market choice is one of the most fundamental decisions in the creation of new ventures and is key to scholarly understanding of organizational emergence. The value that a new firm can derive from its resources is determined to a considerable extent by the characteristics of the market(s) it chooses to serve, as different market opportunities may have substantially different value creation characteristics (Shane, 2000). Yet, beyond its implications for new firm performance (Gruber et al., 2008), it is important to recognize that the market entry decision has strong imprinting effects on the emerging organization, because “the nature of the market that a firm serves has an extremely powerful effect on its identity, the skills or expertise which it needs to amass in order to be competitive, and on its organizational structure” (Geroski, 1998, p. 683). In other words, the founders' market choice defines the core of the venture (Abell, 1980) and has extensive implications for organizational emergence (Helfat and Lieberman, 2002).

Naturally, market entry decisions are based on the market opportunities that have been identified by the firm's founders. Following ideas that are core to the resource-based theory in strategic management and that were first outlined by Penrose (1959) in her theory of the growth of the firm, multiple market opportunities can be identified as resources are fungible. Specifically, because the firm's resources are distinct from the products in which they are embodied, they may be adapted and combined with other resources in order to be used in a range of applications across different market domains (Prahalad and Hamel, 1990; Danneels, 2007). Hence, technology resources may be amenable to many market applications and thus be applied to multiple commercial ends (Danneels, 2002).

An additional aspect of this challenging decision relates not only to choosing the ex-ante most promising alternative(s) (McGrath and MacMillan, 2000a), but also whether to pursue one market opportunity at a time, or whether to pursue multiple markets simultaneously. While current work on the market entry decisions assumes that new ventures enter a single market domain (e.g., Sorenson et al., 2006), the strategy literature recognizes a key tension between the need to focus one's resources and capabilities, and the need to support a plurality of resources and capabilities (Hamel and Prahalad, 1982; Thompson, 1967). In this regard, Wernerfelt and Karnani (1987) point out that competitive strategy under uncertainty involves an inherent tradeoff between focusing resources on one scenario, thereby enjoying efficiency benefits, and spreading resources across several scenarios, thereby establishing strategic flexibility.

2.2 Focus vs. Variety in New Ventures' Market Entry Decisions

As mentioned, prior research has almost exclusively examined a focused market entry approach – in part because researchers emphasize the importance of focus in resource-constrained firms, and in part because the idea (and empirical evidence) that multiple market opportunity identification is evident in entrepreneurship is still young (Gruber et al., 2008; Ucbasaran et al., 2009).

A focused strategy requires that the resources and capabilities of a firm be specialized to the needs of customers in a particular target segment, which enhances venture efficiency (Barney, 1991; Porter, 1980). Furthermore, scholars argue that a focused approach is required for small firms due to resource

scarcity. As Wernerfelt and Karnani (1987, p.191) argue: “a smaller firm may have no choice but to focus if it is to have any chance of winning”. These resource constraints relate not only to financial resources, but also to time, human capital and managerial attention, which are often as critical and as scarce as financial resources (Gifford, 1992). Furthermore, new firms may fail because their size is smaller than the minimum efficient scale in their industry (Audretsch, 1995). Hence, once a start-up enters its market, the additional resources it acquires should be aimed towards the growth of the existing business in order to achieve greater efficiency and ensure survival (Mata et al., 1995). In this vein, focusing resources on a single opportunity yields advantages such as progressing faster along the learning curve and exploiting economies of scope, gaining first mover advantages and improving the clarity of the new firm’s value proposition (Andries et al., 2011; Wernerfelt and Karnani, 1987).

Yet, the advantages from a focused approach to market entry come with attendant risks, especially in turbulent and uncertain environments (Knight, 1921). Under such circumstances, founders have difficulties in understanding the value inherent in different market opportunities and the level and duration of investment required to exploit them successfully. As a result, one explanation for the high failure rates among new ventures is that they typically bet exclusively on the merits that can be achieved from exploiting a single market opportunity rather than trying to maintain flexibility by spreading their investment over several opportunities (Wernerfelt and Karnani, 1987).

Central to the latter notion of flexibility is the firm’s ability to generate variety, so that pivoting options are available if the need for change should arise (Dreyer and Gronhaug, 2004; Evans, 1991). Other than hedging against future uncertain environmental changes (Hannan and Freeman, 1989), ventures may choose a variety-generating approach in order to determine which new route (real option) holds the greatest promise for achieving competitive advantage and creating value (McGrath, 1997). McGrath and MacMillan (2000b) use the term “scouting options” to describe parallel entrepreneurial experiments that allow the startup to simultaneously investigate high potential but uncertain markets. In this vein, work on selectionism (Pich et al., 2002; Sommer and Loch, 2004) suggests that by starting with several concepts

from which the best is chosen ex-post, agents will be able to generate a higher average value in complex environments than by learning and making adjustments along a single trajectory.

Generating variety through the pursuit of multiple opportunities is supposed to yield additional advantages such as synergies and sharing of co-specialized resources and innovative assets (Penrose, 1959), and encouraging distant learning that can lead to unique solutions and combinations. Nevertheless, one of the key dangers of trying to maintain flexibility through early variety generation is that a firm may spread its resources – financial, technological and managerial – too thinly to become successful (Wernerfelt and Karnani, 1987).

2.3 Looking Beyond the Initial Market Entry Decision

Prior research typically confines the examination of new ventures' market entry choices to the initial market entry decision (e.g., McDougall and Robinson, 1990). However, because initial evidence suggests that emerging organizations are often required to adapt or change their initial market entry decision, the value inherent in adopting a market entry approach that ensues greater flexibility will only become apparent once the early life of a new organization is taken into account. For instance, Drucker (1985, p. 189) observed that “(w)hen a new venture does succeed, more often than not it is in a market other than the one it was originally intended to serve, with products and services not quite those with which it had set out, bought in large part by customers it did not even think of when it started, and used for a host of purposes besides the ones for which the products were first designed”. Indeed, the business world is replete with examples of firms that succeeded only after adapting their initial market entry choice. The salience of such firms may be in part responsible for a recent swell of practitioner attention to ‘pivoting’ - referring to a shift in product-market strategy by young technology startups (Maurya 2012; Ries, 2011). Several studies (e.g., Murray and Tripsas, 2004;) suggest that it can be beneficial for startups to pivot from their original plans, yet empirical results are still scant (Marx and Hsu, 2012). In any case, because it seems that most initial target market choices by new ventures have to be abandoned later on (Drucker, 1985; Mullins and Komisar, 2009), the startup's initial market entry approach (focus vs. variety) may influence its later repertoire of strategic choices and its ability to maintain flexibility and to adapt.

Given the centrality of market entry choices for the emergence of new organizations, it is key to fill in the gaps in our knowledge and extend current theorizing along two main dimensions. First, given our fairly limited understanding of what market entry means in new firms, we want to investigate which primary market entry approaches exist beyond the commonly discussed focused approach in new firm creation. Second, because of the dynamic nature of market entry decisions in the early life of new firms, an assessment of how startups' market entry decisions affect organizational emergence should not only take into account the initial entry decision, but should also include the early life of the new venture. It would be important to have systematic evidence regarding the extent to which founders have to adapt their initial market entry decisions over time, and to understand how the initial choice of a focus vs. variety-generating approach affects the venture's ability to change or adapt its target market(s).

3 Research Method

To answer our research questions, we adopted a qualitative research design, which is recommended for examining subtle phenomena that are poorly understood (Strauss & Corbin, 1998; Yin, 2003).

The study setting, sampling approach, data sources, and data analysis procedures are presented below.

3.1 Study Setting and Sampling Approach

Our empirical research draws on 25 new technology ventures located in Israel. This country provides a favorable environment for our study because it is considered a "hotbed" for new technology ventures, with the highest rate of entrepreneurs and venture capital investments per capita in the world (De Haan, 2011). Because some technological resources may be more easily adaptable to different markets than others (Gruber et al., 2008), we limited this type of heterogeneity by restricting our sample to new ventures in the technological field of "Imaging & Image Processing". Furthermore, as we wanted to study the role of early market entry choices in organizational emergence, we followed prior studies and included in our sample only firms that were between three and eight years old (Hmieleski and Baron, 2008).

Since we first sought to identify maximum variation in initial market entry decisions, and then link them to organizational emergence processes and outcomes, we adopted a theoretical sampling approach (Glaser and Strauss, 2006). This approach involves data gathering that is driven by concepts derived from

the evolving theory, thus increasing the probability of collecting varied data to “maximize opportunities to discover variations among concepts and to densify categories in terms of their properties and dimensions” (Strauss and Corbin, 1998, p. 201). We continued data collection until theoretical saturation was reached, that is, we arrived at the conclusion that: a) no new insights emerged from additional interviews, b) the different approaches to linking technology and markets seemed well developed, and c) their relationships to organizational emergence processes and outcomes seemed well established and validated.

In order to identify firms that are eligible for our study, we mainly used the Israel Venture Capital (IVC) Database, which includes comprehensive information on many Israeli high-tech companies and investors, as well “snowball sampling” (Denzin and Lincoln, 2000), that is, we asked interviewees to point us to other founders in this technological area. In total, our search for eligible ventures (i.e., firm age: three to eight years, technology description including the word(s) ‘imaging’ or ‘image processing’) produced 65 firms, which marked the starting point for our theoretical sampling. Table 1 presents an overview of the ventures in our sample, including a brief description of each firm, and the multiple data sources used to analyze their emergence. Note that one of the ventures in our sample was two years old during our main round of interviews. To have complete information on its three-year development, we conducted another interview one year after the initial interview.

INSERT TABLE I ABOUT HERE

3.2 Data Sources

To facilitate triangulation and validation of the identified constructs, multiple data sources were used:

Interviews. In total, we conducted 32 semi-structured face-to-face interviews with the founders (and in some cases with the CEOs/ CTOs/ Business Development VPs) of the 25 ventures in our sample. These semi-structured interviews were designed to capture the firm’s emergence process including a wide range of aspects. First, the interviewees were asked to present their venture in detail, including a description of what their venture is doing, their founding team, the underlying core technology and the firm’s status. Then, interviewees were asked to describe, in a timeline fashion, the major decisions and

changes in both technology and markets that their venture had gone through from the initial founding decision up until the time of the interview. They were also asked to discuss these strategic decisions and indicate other major events in the venture's life, including investments, growth in employees, partnerships etc. During the interview, all of these elements were noted by the interviewer on an open timeline in order to obtain a detailed depiction of the organizational emergence process. This timeline was then presented to the interviewees in order to assess its accuracy and completeness. Interviews ranged in length from one to two hours (mean: 70 minutes), and were conducted in Hebrew – the mother tongue of the interviewees. After an initial analysis of the data, a second round of short interviews was conducted by phone to complement information on specific topics and/or track the development of the venture since the last interview. In addition, we confronted participants with our findings and solicited their opinion on the accuracy of our analysis. These interviews lasted between 15 to 30 minutes (mean: 20 minutes). [Appendix A (for Reviewers) presents our interview guidelines]

Website and Firm Archival Data. Archival data were used to validate and augment the interview information, and to limit potential retrospective bias. We collected material from companies' websites, executive summaries, business presentations or promotional material, and used it to compare the cases that emerged from the interviews with objective data (see Table 1).

Third Party Data. The IVC Database provided complementary data on each venture, such as the number of employees and the financial investment rounds.

3.3 Data Coding and Analysis

The analytic process of qualitative data is based on coding procedures, as a means of raising and answering questions and making comparisons (Miles and Huberman, 1994; Strauss and Corbin, 1998). Hence, interviews were recorded and transcribed, and coding was conducted step-by-step as described below. Special care was taken throughout all stages in assuring the reliability of our assessment – in particular, by analyzing the archival data that we had collected along with the interview data. Furthermore, data was coded independently by one of the authors and by a research assistant (inter-rater agreement between .82

and .94 depending on the coding step), after which assessments were compared and reasons for mismatch discussed until agreement was reached.

Studying the interviews line by line, we first coded all responses that provide information on founders' initial market entry decisions. Consistent with our theoretical approach, we grouped these decisions into two primary groups: a 'focused approach' (e.g., "*we focus all our efforts and resources on pursuing this single market opportunity*"), and a 'variety-generating' approach (e.g., "*we decided to pursue these two market alternatives simultaneously, as they are closely related*"). In an iterative process, we then sought to understand the properties of each group, by coding all responses and evidences that shed light on why they emerge (such as the origin of the business idea) and what are their main characteristics (e.g., how founders allocate their resources or define their organization). After careful analysis of these elements for each venture, we conducted cross-case analysis to identify similarities and differences within and across groups. Through this process, we found that the variety-generating approach in market entry decision should actually be divided into two sub-groups, based on clear differences in some of the basic properties. Thus, differences and commonalities among firms led us to develop three categories of market entry approaches that characterize the firms in our sample. We label these categories *focused approach*, *broad approach* and *vague approach* (both of which are variety-generating).

Once these types were clarified, we investigated the relationship between initial market entry approaches and the ability to change and adapt over time. First, we identified all firms that changed their initial market entry during the first three years of their existence. We analyzed our timelines and interview transcriptions to understand strategic shifts in the pursued market opportunities (e.g., "*The ongoing feedbacks from the market made us understand that we need to revise our product and address it to different segments in the market*"). Then, systematic coding was performed to examine the magnitude of the corresponding change and its difficulty for the organization. Specifically, we analyzed all the responses and the complementary data that provided information about the nature of the change, the constraints to change, and the elements of change. We then organized this data in a table to search for commonalities among firms in each type of approach.

Lastly, we were interested in understanding organizational outcomes. However, this is not a straightforward endeavor in research on emerging organizations (Brush and Vanderwerf, 1992). Thus, in order to link initial market entry approaches to organizational outcomes, we gathered data on several performance indicators at the age of three years. We used data from the interviews and complemented it with information provided through the IVC database. To estimate the ventures' success in establishing themselves as viable organizational entities within the examined time frame, the researchers involved in this study independently rated each firm on a 1-5 scale (where 1 signifies 'not successful at all' and 5 signifies 'definitely successful'). The ratings were then compared (inter-rater agreement: 0.94), and in the few cases in which they diverged, discussed until agreement was reached.

4 Findings

We present our findings in three parts. First, in order to familiarize readers with our empirical investigation, we provide detailed information on the technological context and descriptive evidence regarding the identified market opportunities and the market entry decisions of the ventures in our sample. Second, we examine the initial market entry decision and discuss three different organizational emergence types in light of the focus-variety tradeoff in market entry choice, and their main characteristics. Lastly, we examine the post-entry evolution of the ventures and investigate to what extent the initial market entry approach pursued by a founder affected the venture's ability to adapt during early-stage development, and to what extent it affected early performance outcomes.

4.1 Technological Context and Descriptive Evidence

Our sample is comprised of 25 new ventures, all developing technology in the field of Imaging & Image Processing. Imaging technology is the application of materials and methods to create, preserve, or duplicate images. Other than digital imaging, technologies and methods include infrared, ultrasound, radar imagery, and many more. Image processing is referred to as any form of signal processing which focuses on two major tasks: a) Improvement of pictorial information for human interpretation; and b) Processing of image data for storage, transmission and representation for autonomous machine perception. The

continuum from image processing to computer vision includes many technological processes including noise removal and image sharpening, object recognition and segmentation, and scene understanding. One of the first applications of digital imaging can be found in the newspaper industry in the early 1920s. Improvements in computing technology and the onset of the space race led to a surge in digital image processing applications during the 1960s, and in the 1970s image processing technologies entered the medical domain. From the 1980s to today, the use of image processing technologies has experienced another significant surge, with such technologies being used in numerous applications across a wide range of domains – such as image enhancement and restoration, artistic effects, medical visualization, industrial inspection, and human computer interfaces (Gonzalez and Woods, 2002).

Turning to our sample, we find that six ventures developed image recognition technologies (e.g., face recognition), five ventures developed remote control capabilities (e.g., hand gesture recognition), five ventures developed optical equipment (e.g., camera software), four firms developed image diagnostic tools (e.g., for cardiac CT) and five firms developed image display instruments (e.g., volumetric displays).

Before entrepreneurs can exploit the value inherent in their technological resources, they need to identify at least one market domain in which their technologies, as embodied in a product or service, meet customer demand. Yet, the range of market opportunities emerging from a new technology is rarely clear from the outset (Shane, 2000; Kor et al., 2007), so we begin our analysis by examining the number of market opportunities that the firms in our sample identified prior to their first market entry.

Among the 25 firms in our sample, four ventures identified just a *single market opportunity* prior to the initial market entry. For instance, one of the ventures pursued the idea to optimize trans-catheter cardiovascular interventions by means of automated on-line image processing. This venture was solely interested in the cardiovascular equipment market, and thus had no inclination to identify other (alternative or additional) market opportunities. In contrast, the remaining 21 ventures identified *multiple market opportunities*. For instance, one of the firms that developed image recognition and detection technology evaluated several market opportunities including surveillance, web applications, and manufacturing quality control. Figure 1 shows the number of opportunities identified by all 25 firms prior to their initial entry.

INSERT FIGURE 1 ABOUT HERE

Following the evaluation of their market entry options, ventures need to decide which market opportunities are worth pursuing or keeping open. Although focusing resources on a single market opportunity has been the default assumption for most research on organizational emergence, our data clearly shows that new ventures might consciously choose to generate market variety during emergence.

The interviews provide clear evidence for the focus-variety dilemma that new firms may face when deciding on their market entry approach. The following quotes illustrate the nature of this tension:

“We asked ourselves do we want to be a single or multiple applications firm...these are totally different firms, in their mindset, in their definition, in marketing and positioning... very difficult questions...it is a fascinating marketing process, but very complicated with lots of stomach aches and no clear answer.”
(Co-founder, Volumetric Display firm)

“This is a million-dollar question. I don’t have an intelligent answer. On one hand, the venture requires focus, focus, focus. On the other hand, how should you know which market is right? You really can’t know, it’s what your stomach tells you. Solution can be focusing for one venture but de-focusing for another; it’s your gut feeling.”
(CEO, 3D Printing firm)

Analysis of the focused vs. variety-generating ventures revealed three distinct emergence types (focused, broad, vague), based on the underlying cause which pushes the venture either towards focus or towards variety when deciding on their market entry. These types are introduced and then described in detail below.

4.2 Market Entry Approaches in New Ventures: Focused, Broad and Vague

Our analysis reveals important differences in the market entry approaches adopted at venture inception, which – as we will see below – have fundamental implications for organizational emergence processes and outcomes: of the 25 ventures in our sample, nine pursued a focused market entry, eleven pursued a *broad* market entry, and five ventures pursued a *vague*, unfocused market entry.

A focused market entry approach means that founders possess a focused set of beliefs about their ventures’ target market, leading them to commit their resources and capabilities to a single market option

and pursue a single evolutionary path. The underlying logic for this approach is the need to focus resources to develop contextualized capabilities that are required to cater a chosen market opportunity.

A broad market entry approach means that founders' understanding incorporates several potential target markets and includes beliefs and actions that drive them to generate variety in the market opportunities they attempt to address, either by pursuing multiple options simultaneously or by keeping alternative options open. The underlying logic for this approach is the conscious desire to avoid lock-in commitment.

Lastly, a *vague market entry approach* means that founders lack a clear understanding of the venture's business orientation. They attempt to pursue multiple market opportunities and desire to keep business options as open as possible. The underlying logic here is search: variety is generated in an attempt to find the most promising market opportunity(-ies).

In the following, we describe and discuss each of the aforementioned market entry approaches in detail. First, we provide evidence for the different development decisions of technologies and markets in each group, and for the underlying logic that creates these differences. Then, to deepen our knowledge on the distinction between types, we provide evidence that shed light on their origin (i.e., initial inception as market pull or technology push firm) and on their main characteristics. We examine differences in how founders define their organization (i.e., the organizational identity of the firms), and in how they allocate resources to establish development trajectories that may lead to path-dependencies.

Table 2 presents a summary of these core elements, and Table 3 presents a detailed list of organizational identities – i.e., the founders' understanding of “who we are as an organization” (Albert and Whetten, 1985; Tripsas, 2009) – for all ventures in our sample.

INSERT TABLE II AND III ABOUT HERE

A focused approach to market entry. A focused market entry approach means that the venture adopts a focused set of actions and invests in a single development trajectory, so that resources and

capabilities are developed to address a specific need for a specific market. Based on this focused approach, founders develop their technology in a highly contextualized manner, as the following quotes illustrate:

“Our technology is very specific. It’s a trick we are performing on the X-Ray system to freeze the image of the heart during catheterization. This is the market we are aiming to pursue”

(Co-founder, Firm D)

“The technology we develop consists of two layers: the first is relatively general, but the second layer is specifically developed to suit the market we aim for. It is very complex and requires most of our development efforts.”

(Co-founder & CEO, Firm F)

The contextualized technology is aimed to address a single market opportunity. This clear focus is either a result of a solely identified market, or a conscious decision to ignore alternative opportunities:

“One of the founders had an idea to develop a virtual mouse... It was the only idea that we had in mind, we didn’t think of any others at that time.”

(Co-founder & CEO, Firm C)

“We consciously close our eyes to other market alternatives. We don’t think about them and we don’t invest any energy in trying to understand them.”

(Co-founder & CEO, Firm E)

In any case, the underlying logic for the focused approach is based on the need to focus the firm’s scarce resources in the most effective way, by developing highly tailored capabilities that would cater to what seems to be the most promising market. The following quote provides an example:

“There are other possible applications, but we didn’t listen... the technology is too complex and the regulation is too heavy for us to deal with any other market.”

(CEO, Firm I)

Ventures pursuing a focused approach, therefore, develop a distinct market-technology linkage, and pursue a single evolutionary path, without investing any effort in keeping other market options open.

Nine firms in our sample were categorized as having a focused entry approach. Examining their business origins, we found that most of them started as market-pull firms, i.e. they identified a specific market need that required a solution (seven out of nine firms, see Table 2). As they strongly believed in the value creation potential inherent in that market, they adopted such a focused approach. Furthermore, their perspective of “who we are as an organization” was also narrowly defined, as it was mainly based on the product that they develop, thus indicating the specific need and the specific target market for which the venture aims to provide a solution (see Table 3). For example:

“When we founded the venture, we defined ourselves as a firm that develops a camera-based input device to substitute touch pads in PCs. It was based on the product that we intended to develop.”
(Co-founder & CEO, Firm C)

“When we founded the firm we knew exactly what our target market and product would be. Therefore, we define the firm as developing designated CT scanners for cardiologists.”
(Co-founder & CEO, Firm E)

This focused perspective serves as a guidepost, directing the development of specific resources and capabilities in a path-dependent direction that ultimately results in a locked-in commitment, as described by one of the interviewees:

“Pretty soon we got locked on the brain CT diagnostic market...we focused all our development efforts in this direction alone.”
(Co-Founder & CEO, Firm F)

Overall, firms possessing a focused entry approach choose a development trajectory that is based on a single technology-market linkage. They commit their resources to this single path and even define their organizational identity based on this focused lens. Consequently, they embark on a narrowly defined organizational emergence process that is likely to establish key path dependencies for their firms over time (as examined below).

A broad approach to market entry. Firms adopting a broad market entry approach envision multiple technology-market linkages and strive to build their competences in a relatively wide way so that they could be utilized in a range of market domains. This perspective drives founders to develop their technological capabilities to be as general as possible, often describing them as a technological platform that provides the basis for many possible applications:

“We are actually developing a technological platform for the pharmaceutical market. It can be amended to many possible applications.”
(Co-founder & CEO, Firm P)

“We developed our technology to be very generic, deliberately not connected to a specific application. We thought it would change the way we view pictures just like color did at the time.”
(Co-founder & CTO, Firm T)

Additionally, these founders were actively developing a range of marketing capabilities, by considering and even by pursuing multiple market opportunities simultaneously, as the following quote demonstrate:

“At the beginning we had a very big dilemma regarding which products to develop. We considered several options. Eventually, we decided to go for these two markets...they are very close in terms of the technology and the products we need to develop.”

(Co-founder & President, Firm O)

In any case, the underlying logic for this broad approach is based on the desire to generate variety and keep alternative options open among the multiple markets they identified, in case future changes and adaptations will be required:

“It was clear for us that the highest value proposition we could offer is in the toys market, that is why we decided to focus there. But we know there are other interesting alternatives for stage B or plan B and we always keep them in mind.”

(Co-founder & CEO, Firm K)

“We see this [additional] big market as an option for the future. If we meet someone relevant we talk with him, we sometimes send some emails to firms in this area. If someone will pick up this glove we can quickly realize this option.”

(CEO, Firm T)

Ventures with such broad approach, therefore, develop several linkages between markets and technology, by building capabilities that are more general and keeping multiple evolutionary paths open.

Eleven firms in our sample were categorized as having a broad market entry approach. Examining their business origins, we found that most of them launched their venture with an understanding of a general market need and a range of possible solutions, that is some combination of market pull and technology push (eight out of 11 firms, see Table 2). Unlike the focused firms, founders in this group defined their organizations' identity much wider, basing it mainly on a general need or a broad market domain (see Table 3). For example:

“Our mission was to build a firm that would redefine human-machine interaction. This is how we defined our venture from the very beginning – this is who we are.”

(Co-founder & President, Firm M)

“Our firm provides vision solutions for machineries. It could be any kind of machinery. It is really a broad definition but this is who we are.”

(Co-founder & CEO, Firm R)

Following this framing of what their venture is about, resources and capabilities are developed for divergent options, consciously avoiding locked-in commitment:

“If someone has an idea how to improve the performance of our technology – but it means narrowing our general abilities – we are extremely cautious not to go down that path. If we lock ourselves we may lose our flexibility.”

(Co-founder & CEO, Firm L)

Taken together, founders pursuing a broad market entry approach develop their capabilities and view their firm's identity in a general manner. In particular, such broad perspective seems to avoid the locked-in commitment of narrowly defined ventures. In other words, the organizational emergence process of firms in this group can be characterized as "path avoidance", rather than "path creation".

A vague approach to market entry. Firms adopting a vague market entry approach strive to generate variety by pursuing multiple technology-market linkages. Just like the broad-approach firms, they attempt to build their capabilities in a wide manner, to suit alternative market opportunities. However, unlike the broad group, the underlying logic for this approach is the ongoing search process for promising opportunities, based on a lack of a clear understanding regarding the venture's business orientation. The following quotes illustrate how multiple market opportunities are explored simultaneously, until a promising path is revealed for the firm's general capabilities:

"We developed this general purpose technology but we actually had no business focus. We tried to enter the computer games and media centers markets...and all this time we kept searching for more applications."
(Founder & CEO, Firm U)

"We talked with different customers from different markets and even started working with most of them. We just didn't know which market we should focus on."
(VP Bus. Development, Firm V)

Naturally, this search process enhances the venture's desire to keep alternative options as open as possible:

"We considered many applications...we always keep them on the back burner, each one has a spark – so you never know. We try to keep the doors open."
(Co-founder & CEO, Firm X)

As such, ventures in this group develop several linkages between markets and technology, by building capabilities that are more general and by pursuing multiple evolutionary paths.

Five firms in our sample were categorized as having a vague approach. Examining their business origins revealed that four of these firms began as technology-push ventures (see Table 2). This type of initial condition gave rise to an unclear understanding of their ventures' business orientation. Not surprisingly, our analysis shows that these founders define the identity of their organizations in a general manner (Table 3), often basing it on the technology they develop, as the following quote illustrates:

"We develop a cutting edge object recognition technology...that is who we are."

(Founder & CEO, Firm V)

Due to the vague business orientation, resource commitment is hardly possible. The interviewees explained that only after a promising strategic path becomes clear, will they be ready to make such commitments:

“We tried to pursue several markets. It is like hitting several rocks to see if water comes out. Once we clearly hear the water, we will concentrate on squeezing out more and more of it.”

(Co-founder & CEO, Firm X)

Overall, founders pursuing a vague approach at venture inception view their technology and markets in a general manner, and even define their organization accordingly. Yet, in contrast to ventures that adopted a broad approach, their strategy is reflected in an emergence process that is characterized by “path search”, rather than “path avoidance” (or “path creation” as observed for narrowly framed ventures).

4.4 The Organizational Emergence Process: Change and Adaptation over Time

While the pursued market entry approach is of interest in its own right, the implications of each approach only become apparent once the emergence trajectory of an organization is taken into account. In particular, because technology ventures typically face dynamic and uncertain conditions, it is key to understand to what extent the initial market entry approach pursued by founders may hinder or enable organizational flexibility. To examine this issue, we analyzed any changes in the ventures’ target market(s) during their first three years of existence. Of the 25 ventures, a surprisingly large number – 18 firms (i.e., 72%) – changed their initial target market during this relatively short time span, i.e., fundamental changes in the target market choice are the norm, rather than an exception, in the emergence process. Interestingly, 11 founders decided to change their firms’ target market because their pursued market(s) were rendering disappointing results, while five firms initiated change because they identified promising new market opportunities. The following quotes illustrate both cases:

“We developed a very complex device which was intended for university researchers, but we couldn’t even find a beta-site for it, they just didn’t want to try it... They told us that private labs might be interested in some of the features, so we went to study this market. Eventually, we needed to adjust our product to be much simpler - plug and play type, for these customers.”

(CEO, Firm G)

“Customers from other markets heard about our technology and approached us. They suggested that we develop together products not for our mainstream market - the toys - but for other segments such as gaming, mobile etc. These were big partners and their offers seemed very interesting.”

(Co founder & CEO, Firm K)

In contrast, only two ventures changed their initial target market entry due to technological developments that revealed previously undetected opportunities.

“We had to develop a special 3D tool to test our cancer detection algorithm. After it was ready, we suddenly realized that this tool could be a product by itself...it opened many new opportunities for us.”

(Co-founder & CEO, Firm H)

Delving deeper into these important empirical findings, we analyzed the change processes for each firm in order to understand to what extent the initial market entry approach pursued by founders may hinder or enable adaptation over time. Table 4 summarizes our main findings.

INSERT TABLE IV ABOUT HERE

Notably, our analysis indicates major differences among ventures pursuing narrow, broad or vague market entry approaches. While the former experienced a significant change process with major difficulties in its implementation, founders who created their firms based on a broad approach described an incremental adaptation process with fewer difficulties during implementation. Finally, founders who launched their ventures based on a vague approach mainly described an ongoing experimentation process that was hardly considered as change. Because the literature has thus far focused on ventures that were created based on narrow market entry focus, the following sub-sections document and analyze how different types of initial approaches affect the nature of change, the constraints of change, and the elements of change in each of these three groups.

A Focused Approach. Ventures that pursued a focused market entry approach concentrated their efforts on a particular target market and, accordingly, developed their resources and capabilities in a contextualized manner. Intriguingly, our analysis indicates that seven out of nine firms in this category had changed their initial market choice during the first three years of establishment (Table 4). Hence,

when their initial target market proved unviable or inferior (in the case of five firms), or when new technological capabilities emerged (in the case of two firms), these ventures were faced with a fundamental organizational re-orientation – their transition was disruptive in nature. They described this change as being significant, using statements such as “*we had to start from scratch*” or “*we had to put aside whatever we had worked on so far*”. Consider the example of a medical imaging firm:

“We actually had to start all over again...it was a different company by now: different product, different regulations for proving the product, different business plan and even different investors...it was very difficult.” (Co-founder & CEO, Firm F)

This difficulty was not only the result of contextualized resources and capabilities, but also of constraints on the part of the founders, or investors, who had difficulty in realizing that change is necessary due to their fixation on a particular organizational path. In some cases, the investors initiated a replacement of the founders in order to overcome cognitive and competence constraints, and to align the venture with the revised strategy. For instance, the CEO of an imaging firm in the medical arena reported:

“Due to this decision, the founding team had to step back... they are active as external consultants now and no longer lead the venture.” (CEO, Firm I)

Clearly, this disruptive process invoked major changes in the technological and marketing capabilities of the ventures. First, due to the contextualized nature of their technological competences, parts of the firms’ technological development had become redundant. This emphasizes the disruptive nature of the change process, as in many cases it led to the abandonment of particular capabilities and achievements that had been key to the earlier development phase:

“We put the technology aside and started to develop a new technology with the same team. What we developed for the lung cancer remained on the shelf ever since.” (CEO, Firm I)

Second, in most cases the firms had to acquire new knowledge about markets and customers, as their current knowledge was relatively limited. For instance, one of the firms shifted from developing a CAD system for brain radiologists to developing a solution for lowering CT radiation. They described the necessary market learning in the following way:

“One day we decided that we are freezing everything and moving into this new direction. People didn’t know this market domain very well, so they started to read papers, learn about it, brainstormed and everything else that is necessary to start running in this new direction.”

(Co-founder & CEO, Firm F)

Furthermore, these change processes required extensive rethinking on how to define the venture and its identity. Because the firms’ organizational identity was mainly based on their product, they had to change their identity during this process. Often, this change was challenging, demanding a completely new perception of “who we are” as an organization (Tripsas, 2009). For example, one of the firms defined their original identity as “Image sharpening tool for graphic software”. After two years, they changed their organizational definition to “Software lens for digital cameras”. Their VP Business Development described this challenging shift:

“Going from Photoshop to end products was a very big change. We had to re-define our company. We never dealt with it before...it was very difficult.”

(VP Business Dev., Firm A)

Finally, our analysis also shows that the type of market entry approach, by itself, changed over time, as business modifications were required. Three (out of seven) firms in this category still possessed a focused approach following their re-orientation. In contrast, three firms adopted a broad approach following their change, mainly due to the adoption of a more general technology, and one firm adopted a vague approach, as technological changes opened up new market options.

“This time, we decided to communicate a revolutionized perception, rather than a specific application. We deliberately talked about a generic technology, which we labeled ‘software lens’, instead of any specific application for which it can be utilized, such as ‘software auto focus’ ... We invested a lot of effort and thinking into this new strategy.”

(VP Business Dev., Firm A)

A Broad Approach. As we have seen above, ventures pursuing a broad market entry approach build their capabilities and define their organization more widely. These founders develop their organization as an entity that incorporates several market alternatives and their business orientation includes actions to keep strategic options open. Hence, when the need to change their initial market choice arises, we observe an incremental adaptation process that is sustaining in nature. In total, seven of the 11 firms in this category changed their initial target market during the first three years of their existence

(Table 4). They describe this process using words such as “*move, adapt, revise*” and experienced adaptation as a natural and straightforward process.

“This was not a radical change. It was more like a natural transition for us... these new opportunities are all part of the entertainment market which we learned to know very well.”

(Founder & CEO, Firm K)

Notably, the founders of these firms did not face the cognitive constraints related to change acceptance, as adaptation was inherent to their broad approach. Furthermore, none of these firms had to replace team members in order to overcome cognitive or competence constraints. Rather, the founders were ready to embrace other opportunities:

“Yes, we can handle another market opportunity. If the technology is related and there is a real business there, so that we can make money - then why not?”

(Co-founder & CEO, Firm J)

“We actually knew all along that this is an initial strategy and that we would need to adapt it over time. We just didn’t know what the new strategy would be.”

(Co-founder & President, Firm Q)

Examining the required modifications in key capabilities reveals that the change process was indeed relatively incremental. First, due to the relatively general technology developed by these ventures, changes in target market have a sustaining rather than disruptive character, meaning that the venture builds on the knowledge and capabilities developed in the previous period:

“Because we developed our technology to be general and scalable from the outset, we can now try to pursue several new markets at once. It did not require major efforts.”

(Co-founder & CEO, Firm J)

Second, many of these firms leveraged their current marketing knowledge and capabilities when pursuing a new market. This is mainly because their capabilities were developed broadly from the outset, through the examination of multiple markets and options:

“Based on the experience we already had, it was not difficult for us to imagine this new market...our capabilities were quite developed to fit to this new direction.”

(Co-founder & President, Firm Q)

Additionally, none of the firms in this category had to go through a major change in their organizational identity:

“This was not a significant or a deep change. It did require us to split our resources differently, but it did not really change who we are.”

(Co-founder & CEO, Firm P)

Finally, the observed re-orientation did not entail change in the type of market entry approach, as all the firms remained with a broad approach. Even though some deepened their commitment to a single market-opportunity over time, their overall reasoning of avoiding locked-in commitment remained.

A Vague Approach. As described, a vague approach is based on an ongoing search process for promising market opportunities. Therefore, ventures in this category that decided to examine a new market opportunity did not even consider this move to be a change in strategy, but rather viewed it as an additional experiment or test. In fact, three out of five firms added such experiments during the first three years of their establishment.

“One day someone suggested that we should develop a solution for screening machines in airports. So we decided to try it out as well...we invested time, gathered data, made some trials ... We kept searching for the markets that will bring us the money.” (Co-founder & CEO, Firm X)

As ongoing experimentation in technology-market linking is inherent to the vague approach, the founders of these ventures did not face major cognitive or competence constraints during their emergence process. Experimentation was facilitated by general technological and marketing capabilities, and did not require any change in the ventures’ identity. Just one of the firms in this category established a clear business orientation during the observed period, meaning that its change process led to a focused market entry approach:

“At the beginning we did not know which of these markets bear more advantages for us...But after a few years in these markets, we understood the efforts of selling, the rate of adoption, the needs of the customers - so that we could clearly decide which market suits best our capabilities. We decided to focus on the jewelry domain alone.” (Founder & CEO, Firm W)

As described by this founder, the decision to commit to a single market was a desirable and gradual result of the parallel experimentation with multiple markets. Although it required the firm to adopt a narrow identity, this change was enabled by already existing knowledge and capabilities:

“The change was gradual, as it took some time to understand which was the best market for us. I think that the parallel experimentation really helped us to take the right decision and to develop the right capabilities. Without it, the firm would not possess the unique abilities that we have today.” (Founder & CEO, Firm W)

While all other firms in this category remained with a vague market entry approach throughout the observed three-year period (which indicates that the establishment of a viable business may take a long time for firms in this group), Firm W was the only one that adopted a focused approach following its re-orientation. The founder clearly emphasized the firm’s commitment of resources and capabilities towards a single option, just as we have seen with the ventures that adopted a focused approach already at the time of venture inception.

“I think that today, our working processes are strictly built into the jewelry market. If we now want to enter a new market - like watches for instance - we will need to start all over and invest a lot. It will be completely different.”
(Founder & CEO, Firm W)

In sum, these findings indicate that the challenges encountered in organizational adaptation depend in non-trivial ways on the initial market entry approach pursued by founders – given that these approaches imprint their new organizations. Whereas firms with a focused approach face fundamental challenges when re-orienting their ventures, those emerging with a broad approach or a vague one, view such changes as a continuation of their original emergence process. These patterns are all the more important, as target market changes seem to be the norm in new firm creation.

4.5 Organizational Emergence and Performance Outcomes

Because of high levels of technological and market uncertainty, founders often have a large spectrum of possible directions that they could pursue in their attempt to establish their ventures as viable organizational entities. The previous section has documented that the type of market entry approach has key implications for the ventures’ ability to change and adapt over time. Since it may also have major implications for the emergence of new organizations and, eventually, for their performance, we examined the status of the ventures at the age of three years (Table 5). We analyzed whether they have emerged as a viable business, and examined common performance indicators for new ventures such as the amount of money raised, and the size of the firm (Brush and Vanderwerf, 1992).

INSERT TABLE V ABOUT HERE

As discussed, a *focused market entry approach* enables founders to commit their resources and actions towards a particular strategic path. And yet, as we have also seen, it affects the ventures' flexibility and ability to adapt, as it creates cognitive constraints as well as constraints and rigidities in the firm's competences. Overall, because the chances of "hitting a gold opportunity" right from the outset are relatively low (Drucker, 1985), and because change often requires a major re-set (including transitions to other organizational paths), new firms that pursue a focused market entry approach risk facing a longer establishment phase until a viable organization is formed.

On the other hand, our results suggest that a *broad market entry approach* provides a wider lens through which technologies and markets are attempted to be linked. Although not focused in nature, a broad approach can nonetheless be an enabler for entrepreneurial action because it encourages the commitment of actions to a set of alternatives –which, as our data indicate, tend to be closely related. In particular, a broad approach enhances organizational flexibility and provides the foundations for coping with the challenges of future adaptations. These dual abilities – to commit and to be flexible at the same time – increase these ventures' chances of establishing themselves as viable organizations relatively more quickly than others.

Lastly, a *vague market entry approach* means that founders do not have a clear guidepost that directs the development of some capabilities, and not others. During their attempt to identify a viable market-technology connection, firms with a vague approach have limited ability, or none at all, to commit their resources to any particular path. In effect, their path search may take a substantial amount of time, as only one out of five firms in this group adopted a distinct business orientation during their first three years of existence. Hence, the lack of a clear path also means that it will take the ventures longer to establish themselves as organizational entities.

In order to quantify the ventures' performance, we analyzed the status of each firm at the age of three years. We examined whether they have established a viable business at that time, and gathered data on measures related to fundraising and firm size. As Table 5 reveals, ventures with a broad approach tend to outperform others on all key performance dimensions. These ventures raised, on average, 7.38 million

USD from external investors, which is significantly higher than the funds raised by the other types. Furthermore, only 18% of these ventures searched for additional funds at the end of year three, compared to 66% and 60% of the focused and vague types, respectively. Ventures led by a broad approach also had a much greater number of employees (18.8 (broad), 5.75 (focused), 4.6 (vague)). Hence, the search for a viable market domain tends to take longer when firms adopt a focused approach, or start with a vague one.

5 Discussion

We began this study by noting that most organizational theorists and entrepreneurship scholars assume that new ventures have to sharply focus their efforts by pursuing a single market opportunity. Our findings critically challenge this assumption, as the startups in our sample could be classified into three main types, based on their focus vs. variety-generating approach in the initial market entry decision:

First, our findings highlight the importance of considering more than just the focused market entry approach when it comes to the creation of new organizations. Our empirical evidence indicates that founders may fundamentally diverge in the scope of their entry approach (focused, broad, vague), and that these differences matter for organizational emergence processes (path dependence, path avoidance, path search) as well as outcomes. In particular, our findings reveal and document how founders that adopt a focused, broad, or vague approach establish organizations that differ in key ways (e.g., resource allocation, capability building, organizational identity).

Second, our findings reveal an important link between the pursued market entry approach and the venture's future ability to change and adapt. This is significant because 72% of ventures had to change their target market within three years. In particular, among ventures that pursued a focused entry, we found that seven out of nine ventures had to transition to a new market, and faced significant challenges in accomplishing this transition due to "path dependence" effects. In contrast, firms led by founders who pursued a broad or vague entry (which connote "path avoidance" and "path search") did not face such challenges.

Third, although the three-year mark represents an early assessment of outcomes, the analysis revealed diverging levels of progress on the new firms' journey to becoming viable and prospering

organizational entities. Specifically, our findings suggest that ventures that adopted a broad entry approach tend to outperform others on all key performance dimensions that we could assess.

In sum, our findings provide important evidence on the influence of different types of market entry approaches on organizational emergence processes and outcomes. They document how focused, broad or vague approaches distinctly influence the capabilities and identities of new organizations, their ability to change and adapt over time, and their early performance.

Our findings also provide systematic evidence on change in startups' initial market entry decisions during the early life of the ventures. Corroborating the anecdotal evidence that exists in this vein, the present results suggest that change in new firms' initial market entry decisions is a highly common occurrence. In spite of the resource constraints that are frequently mentioned by scholars, most firms in our sample (i.e., 18 out of 25) adopted a variety-generating approach as their initial entry strategy, or moved to such an approach over time. Viewed by itself, this finding suggests the importance of remaining flexible and adaptive in new firm creation; yet, we also find key evidence indicating that the ability to adapt is contingent upon the venture's market entry and associated emergence type.

Given their largely novel character, these findings provide a number of important insights for the organizational, entrepreneurship and strategic management literatures.

5.1 Theoretical Contributions

Contributions to Organizational Research. The findings of this study help to advance organizational research in at least four main ways. First, by revealing the spectrum of market-entry approaches available to new firms, we significantly advance understanding of organizational emergence processes. Our findings highlight that founders may face an important tension between the goals of efficiency and flexibility (Thompson, 1967) when deciding upon their ventures' market entry, and how their initial entry choice may enhance, or constrain, their ventures' ability to change and adapt over time.

Second, the market entry decision in new ventures is often viewed as a single milestone in the evolution of new ventures. Yet, because most new firms will revise their initial market entry decision early-on, market entry may effectively be conceived as a process that entails learning and experimentation

with different markets over time, including the exiting of some market domains and the parallel entry into (several) other domain(s). Scholars examining entry and organizational emergence patterns thus may want to broaden their perspective on market entry to include, at least, the early stages of firm development.

Third, when combining both implications outlined above – the spectrum of market-entry approaches and the learning/experimentation perspective on market entry – scholars will be able to extend and refine knowledge on several key phenomena in organizational research. For instance, the organizational emergence approach pursued by ventures and the level of experimentation with different markets over time will impact how new firms develop their organizational identity and gain legitimacy (Albert and Whetten, 1985), how resources and markets co-evolve (Helfat and Lieberman, 2002), and how external conditions imprint the new firm (Stinchcombe, 1965).

Finally, our results help to advance understanding of the identity concept in organizational theory (Corley et al., 2006). While Albert and Whetten (1985) stress that endurance is a central element of organizational identity, the present results show that change in the market entry decision often requires emerging firms to modify, or even to abandon, their initial identity – a result which shows that the organization’s identity can be a fairly fluid construct during the firm’s emergence. Furthermore, because prior studies depict identity as an organizational feature that impedes strategic change, mainly because members attempt to preserve existing conceptions of their organizations (Brown and Starkey, 2000), it remains unclear how organizational identity interrelates with processes critical to strategic transformation. In this vein, our findings indicate that the breadth of the definition of “who we are” as an organization materially impacts the venture’s ability to change and adapt over time.

Contributions to Entrepreneurship Research. Before entrepreneurs can start to exploit the value inherent in their technological resources, they need to identify at least one market domain in which these resources meet customer demand. In particular, we provide support for recent empirical findings that founders may identify multiple market opportunities before deciding which market(s) to pursue. In fact, 84% of the firms in our sample identified more than one market opportunity at the outset. This rate is higher than the one found in prior studies (e.g., 40% in Gruber et al., 2013), which suggests that the search and

identification of multiple market opportunities may be more common in some technological fields than others. Interestingly, even firms that did not identify alternative market opportunities at the outset did so in subsequent stages of their development. Our findings thus also highlight the dynamic nature of the firm's identified opportunity set, and its key role in shaping the new firm evolution.

In addition, the entrepreneurship literature has tended to neglect the variety-generating approach in market entry decisions. We document that this approach is fairly common among emerging firms and that the assumption that new firms enter a single domain may, in fact, be misleading. Furthermore, most of the firms which pursued a single market opportunity at the outset changed their market entry decision in subsequent stages into a variety-generating approach, whereas the shift from variety to resource-focusing was very rare. This result shows that the pressure to hedge one's bets during the organizational emergence phase often overcomes the pressure of founders to focus scarce technological, financial and human resources. Hence, researchers examining opportunity evaluation and entrepreneurial strategies should be aware of the possibility that multiple market opportunities may be selected and pursued simultaneously.

Recently, Ambos and Birkinshaw (2010) indicated that we know surprisingly little about strategic change in new firms. We contribute to this body of work in several ways. In particular, we show that variety generation contributes to the ventures' adaptation capabilities. Indeed, the scope of the initial entry decision influences key organizational characteristics that are crucial for maintaining flexibility, such as the level of technology generality and the breadth of the organization's identity.

Contributions to Strategic Management Research. We contribute to an improved understanding of the role of focus and variety-generation in organizations (Glynn et al., 2000). To the best of our knowledge, our study is the first to establish the key link that exists between early stage strategic decisions and distinct organizational emergence processes and outcomes. While a focused approach yields advantages such as progressing faster along the learning curve and developing specialized capabilities (Dierickx and Cool, 1989; Wernerfelt and Karnani, 1987), these advantages come with attendant risks, especially in uncertain environments (McGrath and MacMillan, 2000a). Under such circumstances, the performance potential associated with a particular path can hardly be assessed. Apart from hedging against future environmental

changes, founders who pursued a broad approach are in a position to learn which organizational path holds the greatest promise for establishing a viable new firm. In this regard, our results construct an important bridge to research on selectionism, indicating that agents who start with several concepts from which the best is chosen will generate a higher average value in complex environments than agents who learn and adjust along a single trajectory (Sommer and Loch, 2004).

These results also raise the intriguing question as to whether the traditional view of efficiency and flexibility as constituting a tradeoff actually applies to emerging organizations in dynamic and uncertain environments (for a recent overview, see Eisenhardt et al., 2010). Because our findings indicate that a focused strategy will, in most cases, lead to major setbacks, require new investments in resource and capability building, and slow down the emergence process, it seems that flexibility could ultimately be a more efficient option than initial efficiency along a particular organizational path. In other words, because new firms first have to find an organizational habitat that allows them to become prospering entities, the allegedly inefficient option of experimenting with multiple paths, instead of just a single path, may over time turn out to be the more efficient option – an observation that points to an intriguing “paradox of efficiency” for new organizations. Clearly, more research is needed to understand this potentially important implication of our work in some detail.

The resource-based view suggests that firms can pursue new avenues of growth by leveraging their resources across market domains (Penrose, 1959). Yet, research on firm diversification mainly examines the types of diversification moves and their affect on incumbents’ performance (Miller, 2006), while new firms’ diversification remains a relatively untapped topic (Davidsson et al., 2006). In this regard, our results offer evidence as to why new firms decide to diversify at the outset, with particular emphasis on related diversification moves (Rumelt, 1974).

Practical Implications. Finally, our results also have implications for entrepreneurs in high technology. Recent years have seen a swell in practitioner-oriented books emphasizing that entrepreneurs need to quickly learn and adapt (pivot) (e.g., Blank, 2005; Maurya, 2012; Ries, 2011). While our results also suggest that experimentation is key in new firm creation, they provide a more nuanced understanding as to

which type of probe-and-learn process (focused experimentation with one path vs. parallel experimentation with multiple paths) is related to which types of possibilities and challenges in the organizational emergence process and may ultimately yield better outcomes in entrepreneurial endeavors.

5.2 Limitations

There are several limitations that should be kept in mind when interpreting the results of our research. In particular, our findings must be interpreted within the limitations of a qualitative, cross-sectional research design. To obtain data from 25 new firms, we engaged in a comprehensive data collection effort that relied on multiple sources (interviews, business plans, investor presentations, etc.). Notably, as some of these sources (e.g., business plans, presentations, notes) were codified at the time of venture inception, they are depictions of the actions and decisions that the founders were engaging in at that time – and, thus, provided us with the important opportunity to triangulate the insights obtained from the in-depth interviews with the founders. While it would be an extremely resource-intensive research undertaking, we believe that longitudinal case studies of several dozens of new ventures could complement our evidence and may result in insights that reach beyond our sample of 25 ventures. We also note that as in many studies on new firms, some of our results may be affected by survivor bias. Future research is thus required to supplement our results. This said, we also note that a comparison of our sample of 25 ventures with the overall group of 65 ventures in the field of “Imaging & Image Processing” identified through the IVC database suggests that our data is representative of the underlying population. We were able to assess and compare three key features of ventures in our sample with the broader population of ventures founded in this technology field during the study period. Specifically, ventures in our sample comprised, on average, 15 employees (median: 9), raised 4.7 Million USD (median: 2.4) and were located in different parts of Israel (North: 36%, Center: 60%, South: 4%). These statistics are very similar to the broader population: average employee count of 14 (median: 9), funds raised of 5.8 Million USD (median: 2.5), and location (29%, 66%, 5%).

5.3 Conclusion

This study contributes to our understanding of market entry approaches in entrepreneurship. Following the notion that new firms may focus or generate variety in their market entry decision, we identified three distinct entry approaches and emergence types, each of which has fundamental implications for our understanding of how new firms establish themselves as organizational entities. Furthermore, because the early-stage decision on market entry has an imprinting effect on the startup's ability to change and adapt, this initial decision is also of significance for our understanding of subsequent development stages of new organizations and the role that experimentation assumes during those stages.

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TABLES AND FIGURES

Table I Sample Overview (n=25 technology ventures)

#	Label	Brief Description	Age at Interview	Role of Interviewees	Archival Material	Market Entry Approach
1	Firm A	Enhances performance of cameras in mobile phones	8	Co-founder; VP Business Development	Website	Focused
2	Firm B	Gesture recognition for virtual keyboard	6	Co-founder & CTO; CEO	Business presentation; Website	Focused
3	Firm C	Pointer device operated by user's hands	3	Co-founder & CEO	Business presentations; Website	Focused
4	Firm D	Improvements in trans-catheter cardiovascular interventions	3	Co-founder	Website	Focused
5	Firm E	Compact high-performance CT scanner	5	Co-founder & CEO	Executive summary; Promotional material;	Focused
6	Firm F	Computer-aided diagnostics – brain CT	5	Co-founder & CEO	Business presentations; Website	Focused
7	Firm G	Blood flow imaging devices	3	CEO	Business presentation; Website	Focused
8	Firm H	3D imaging for computer-aided diagnostics	3	Co-founder & CEO	Executive summary; Business presentation	Focused
9	Firm I	Coronary imaging workstation	7	CEO	Website	Focused
10	Firm J	Remote control applications for mobile devices	3	Co-founder & CEO	Website	Broad
11	Firm K	Interactive play and learning toys	3	Co-founder & CEO	Website	Broad
12	Firm L	Visual search technologies	4	Co-founder & CEO	Website	Broad
13	Firm M	Gesture recognition for human-machine interface	5	Co-founder & President	Website	Broad
14	Firm N	Medical holography solutions	3	Co-founder & CEO	Executive summary; Business presentation	Broad
15	Firm O	Portable through-wall imaging radar	6	Co-founder & President; CEO	Business presentation; Website	Broad
16	Firm P	Pharmaceutical QA applications	3	Co-founder & CEO; Co-founder & CTO	Website	Broad
17	Firm Q	Face recognition applications	3	Co-founder & President	Website	Broad
18	Firm R	USB cameras for machineries	3	Co-founder & CEO	Promotional material; Website	Broad
19	Firm S	Bridging the gap between optical microscopy and scanning electron microscopy	4	Founder & CEO	Business presentation;	Broad
20	Firm T	3D imaging for printing	8	Co-founder & CTO; Co-founder & President; CEO	Website	Broad
21	Firm U	Gesture recognition-based joystick	4	Founder & CEO	Promotional material; Website	Vague
22	Firm V	Object recognition solutions	5	Founder & CEO; VP business Development	Business presentation; Website	Vague
23	Firm W	3D product animation	5	Founder & CEO	Website	Vague
24	Firm X	Video recognition solutions	3	Co-founder & CEO	Website	Vague
25	Firm Y	3D modeling technology	2	Co-founder	Business presentation; Promotional material;	Vague

Table II Initial Market Entry Decisions & the Emerging organization

	Focus	Variety Generating	
	Narrow Approach	Broad Approach	Vague Approach
Firm Count	9	11	5
Technology-Market Linkage	Develop a contextualized technology and link it to a single market opportunity	Develop a general purpose technology and link it to optional market opportunities	Develop a general purpose technology and link it to multiple market opportunities
Underlying Logic	Focused exploitation	Keeping options open	Searching for alternatives
Origin	Mainly market pull (7/9)	Mainly combination of pull and push (8/11)	Mainly technology push (4/5)
Organizational Identity / Locus of Organizational Identity	Narrowly defined meaning / Based on product	Broadly defined meaning / Mainly based on general customer need or broad market domain	Broadly defined meaning / Mainly based on technology
Resource Allocation	Locked-in commitment	Divergent commitment	No commitment
Organizational Emergence Pattern	Path creation	Path avoidance	Path search

Table III Locus of the Organizational Identity in New Firms

	Organizational Identity at Founding	Locus of Identity Definition			
		Product	General Customer Need	Broad Market Domain	Core Technology
Focused Approach	Camera-based input device to substitute touch pads in PCs				
	Image restoration algorithm for graphic software				
	Coronary imaging workstation for coronary catheterizations				
	Virtual keyboard for cellular phones				
	CAD for identifying lung cancer				
	Image processing-based CAD for Brain CT				
	CAD for identifying lung cancer				
	Blood visualization tool for researchers				
	Cardiac CT				
Broad Approach	Enhancing customer service for mobile operators				
	Bringing computer vision to world of toys				
	Visual search technology for offline shopping				
	Redefining human-machine interaction				
	Medical holography				
	Through-wall visioning for operational forces				
	Infrared imaging applications for pharmaceutical industry				
	3D image technology for printing world				
	Face recognition for social network applications				
	Vision solutions for machineries				
	Shifting microscopy world				
Vague Approach	Motion control technology to replace mouse or joystick				
	Cutting-edge object recognition technology				
	Providing 3D product animation for e commerce				
	Innovative image and video cognitive vision technology				
	Creating 3D modeling with standard webcams				

Table IV Dominant Change Patterns for Ventures

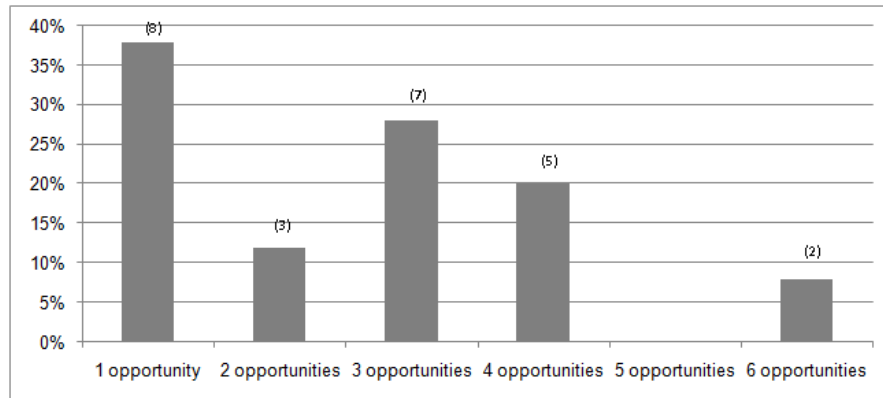
		Focused Approach	Broad Approach	Vague Approach
	Rate of Change	78% (7 out of 9 firms)	64% (7 out of 11 firms)	80% (4 out of 5 firms)
Nature of Change	Type of Change	Typically of disruptive nature	Typically of sustaining nature	Gradual and sustaining, often not even considered change
	Words used to describe Change	Start from scratch; put aside; freeze; put to sleep	Move; adapt; revise	Experiment; test; focus
	Difficulty of Change	Described as extremely difficult (4/7)	Described as not too difficult (7/7)	Described as not too difficult (4/4)
Constraints to Change	Cognitive Constraints to Change	Difficult to realize and accept necessary change due to cognitive fixation on specific opportunity (4/7)	Acceptance of necessary change due to cognitive mindset of adaptation and experimentation (6/7)	Acceptance of necessary change due to cognitive mindset of adaptation and experimentation (4/4)
	Human Competence Constraints to Change	Additional / new management required to accomplish change (3/7)	No change in management team required (7/7)	No change in management team required (4/4)
Elements of Change	Change in Organizational Identity	Change in organizational identity required (7/7)	Minor or no change in organizational identity required (7/7)	No change in organizational identity required (3/4)
	Change in Technological Resources	Major, as some/ most technological development became redundant (7/7)	Not major, because technological development did not become redundant (7/7)	Minor changes, if at all required (4/4)
	Change in Market-related Capabilities	New target market required completely new market knowledge (5/7)	New target market did not require completely new market knowledge (6/7)	New target market did not require completely new market knowledge (4/4)
	Change in market entry approach	Towards focused - 3 firms (i.e., no change) Towards broad - 3 firms Towards vague - 1 firm	Towards broad - 7 firms (i.e., no change)	Towards focused - 1 firm Towards vague - 3 firms (i.e., no change)

In parentheses: number of firms indicating the respective issue / total number of firms in this category that changed

Table V Market Entry & Organizational Emergence Outcomes

		Focused Approach	Broad Approach	Vague Approach
Commitment to Actions		Enables clear commitment to chosen path	Encourages divergent commitment to multiple alternative paths	Inability to commit to any particular path
Ability to Change and Adapt		Inflexibility	Flexibility	Flexibility
Establishment Phase		Because change often requires a major reset, firms may face a longer establishment phase until a viable new organization is formed	The ability to adapt increases firm's chances to establish a viable new organization earlier than others	The lack of a clear strategic direction inhibits the establishment of a viable new organization
Total Money Raised from External Investors within 3 Years (M\$)	Mean	2.01	7.38	0.15
	Median	1.6	2.63	0
	Range	0-5	0-30	0-0.75
Need for Money at Age 3	Yes	6/9 (66%)	2/11 (18%)	3/5 (60%)
	No	3/9 (33%)	9/11 (82%)	2/5 (40%)
Total Employees at Age 3	Mean	5.75	18.8	4.6
	Median	4.5	12	4
	Range	2-15	2-90	3-7
Establishment of a viable Entity at Age 3 (1-5 scale)	Mean	2.22	4	2.20
	Median	2	4	2
	Range	1-4	1-5	1-4

Figure 1 Distribution of the Number of Initially Considered Market Opportunities



APPENDIX FOR REVIEWERS

APPENDIX A. Interview Guidelines

a) General Structure of the Main Interview

1. **Introduction about myself and the purpose of this study**
2. **Please introduce yourself briefly:** What is your education? What is your prior experience? What is your role in the company?
3. **Please introduce your venture briefly:** What does your venture do? In what stage are you? How many employees currently work in the company? Who is the founding team? Who are the investors? Who is your board?
4. **Please describe the core technology of your venture.** What does it do? How unique is it? How complex? Is it patented? Is it highly contextualized? Did it change over time?
5. **Introducing the Timeline:**
I would now like to hear about the interaction between technology and market decisions over time. For this purpose, I would like to introduce the timeline, where:
T=now is the present position of the firm, as you previously described
T=0 is the starting point, the time when you decided to start a new venture. Please describe when was that? What was the initial technology and market that you intended to exploit? How did you define your firm at the beginning?
6. **Please describe all the major changes and events in the venture's life, along this timeline:**
 - a. Decisions or changes regarding the technology or the market: Which market opportunities were identified and considered? Which changes occurred in technology? Please also describe opportunities that were considered but rejected.
 - b. For each mentioned change: what caused this change? How did you discover the new opportunity? Who suggested it? How was it examined? What did you choose? Why? What level of uncertainty did each opportunity involve? Did you choose to pursue one or several opportunities simultaneously?
 - c. What happened with the opportunities that you did not choose (stage B? plan B)?
 - d. Please describe the team that was involved in this process: who are they? What is their role in the venture? What is their knowledge and experience? What is their educational background? How involved were your investors and board members?
 - e. Please add to the timeline other major events in the venture's life, such as: investments, growth in employees, beta version, first customer, partnerships etc.
7. **Please provide some information on your venture's performance:** How much funding have you raised and by whom? How successful are you relative to competitors? What are your sales and market share levels? Growth in employees?
8. **Do you have some supportive material regarding this process:** Business plans? Sales brochures? Investment presentations? Are there any other important people I should talk to in your venture?
9. **Do you have any other important information to add?** Do you know other companies in the imaging industry that I should interview?
10. **Summary and thanks:** I shortly summarize the information by describing the firm's emergence process over time from inception until present.

b) General Structure of the Second Interview

1. **Introduction: the purpose of this study and of the 2nd interview**
2. **How did you define your venture at the beginning?** What was your organizational identity? Was it defined based on the technology or the product? Are there any differences between the internal and external identities?
3. **Core capabilities:** What are your core capabilities? Are your technological capabilities relatively broad or narrow? When hiring employees - did you look for specialists or generalists?
4. **Present change in market entry decisions (content and timing), then ask:** Did this change lead to adjustments in organizational identity? How difficult was it? Why? Was it radical or incremental? To what extent do you perceive your organization to be flexible?