

**Capabilities development and deployment activities in born global B-to-B firms for early entry into international markets**

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# **CAPABILITIES DEVELOPMENT AND DEPLOYMENT ACTIVITIES IN BORN GLOBAL B-TO-B FIRMS FOR EARLY ENTRY INTO INTERNATIONAL MARKETS**

## **Abstract**

This paper sets out to understand how entrepreneurial founders of born global firms acquire, transform and deploy new knowledge resources for early internationalization. Adopting a dynamic capabilities view and using a sample of high-tech B-to-B firms, we report that the new firm's early entry into international markets is executed through three transitional phases. Founders transform the operational capabilities they endow to the firm, develop dynamic capabilities for use in opportunity exploitation, and deploy these to develop knowledge-intensive products that they take to chosen niche markets. The paper contributes to the B-to-B global marketing literature by uniting it with born global and INV internationalization research, and elucidating the three phases through which founders manage early internationalization. The roles played by entrepreneurial founders and particular capabilities are discussed.

**Keywords:** Dynamic capabilities, innovation, early internationalization, B-to-B global marketing, founders, entrepreneurial marketing.

## **1. Introduction**

We report on how entrepreneurial founders of B-to-B born global firms acquire, transform and deploy new knowledge, creating pre-conditions for their early internationalization. Born global firms are considered as exemplars of successfully internationalizing small and medium enterprises (SMEs) that overcome their liability of newness (Stinchcombe, 1965; Freeman, Carroll & Hannan, 1983; Mudambi & Zahra, 2007; Zhou, Barnes & Lu, 2010). This newness is compounded by the uncertainties of operating away from home markets and the liability of foreignness (Hymer, 1976; see also Phelps, 1936, in Buckley, 2011).

Consistent with other scholars in this domain (e.g., Autio et al., 2000; Knight & Cavusgil, 1996; Oviatt & McDougall, 1994), we define born globals as ‘business organizations that, from or near their founding, seek superior international business performance from the application of knowledge-based resources to the sale of outputs in multiple countries’.

In spite of the absence of a comprehensive explanation of their early internationalization, the two decades of born global literature has produced a strong empirical foundation that identifies several preconditions. These include the presence of an entrepreneurial founding team with a global mindset (McDougall, Shane & Oviatt, 1994; Andersson, 2000; Andersson & Wictor, 2003; Knight & Cavusgil, 2004; Weerawardena et al., 2007) and knowledge resources, such as, network knowledge (Oviatt & McDougall, 2005; Sullivan Mort & Weerawardena, 2006), market knowledge (Weerawardena et al., 2007; Knight & Cavusgil, 2004), and that knowledge generated through internal experimentation (Weerawardena et al., 2007). In addition, marketing capabilities (Knight & Cavusgil, 2004; Knight, 2000) and product uniqueness achieved through developing knowledge intensive products (Knight & Cavusgil, 2004; Bloodgood, Sapienza & Almeida, 1996; Sullivan Mort & Weerawardena, 2006; Weerawardena et al., 2007) have been empirically identified. Overall, the presence of knowledge resources acquired through multiple sources enables the firm to create knowledge intensive products that founders take to a market niche that fits with their capabilities.

In parallel, the literature on business-to-business (B-to-B) high-technology products marketing has progressed explicitly addressing the challenges encountered by B-to-B start-ups in reaching mainstream markets that are critical for their long term survival and growth (Sarin & Mohr, 2008; Moore, 1991; Easingwood & Harrington, 2002; Beard & Easingwood, 1992). Mainstream customers, identified as ‘pragmatists’, are often skeptical about the new technologies presented by start-up firms because of their newness to the market. Pragmatists prefer to buy from a reputable and established technology leader and are concerned about the quality and reliability of new technologies, the infrastructure needed to support these products, their systems interfaces, and the reliability of the service that is on offer by the new firm (Moore, 1991). This challenge is viewed as a ‘chasm’ to be

crossed, needing useful market development strategies to address the concerns of pragmatists (Moore, 1991; Kaulio, 2003; Papovic & Fahrni, 2004; Papovic, 2005). Whilst the hi-tech marketing literature has grown in significance particularly in understanding consumer behavior in relation to high-tech products, studies specifically examining how high-tech firms cross the chasm have been limited except for a handful of studies (eg: Muller & Yogev, 2006; Vakratsas & Kolarici, 2008) which examined the presence of dual markets (early adopters and mainstream customers) suggested in Moore's (1991) work.

Similar to born globals, high-tech B-to-B entrepreneurial firms increasingly operate globally (Moller & Rajala, 1999), internationalize earlier than other firms, with export performance associated with substantial investment in R&D and innovation (Gosh & Hughes, 1996; Jones, 1999). They are also niche marketers and therefore the chasm encountered by high-tech start-ups is similar to the challenges encountered by born globals in entering global markets. Interestingly, the two streams of literature have progressed without dialogue with the high-tech marketing literature still in an early stage of development. The born global literature, with its strong empirical heritage, can provide valuable knowledge that will advance the B-to-B marketing literature.

In spite of these similarities, how B-to-B born global firms engage in the development of new knowledge configurations that are likely to facilitate the development of knowledge-intensive products and marketing strategies to realize niche-market entry has received limited research attention. In an encouraging development, a growing number of researchers has suggested the presence of dynamic capabilities to be a prerequisite for early entry into international markets (Gabrielsson & Gabrielsson, 2013; Knight & Cavusgil, 1996; Weerawardena et al, 2007). Dynamic capabilities produce new knowledge configurations enabling the focal firm to pursue its competitive strategies (Zahra et al., 2006; Eisenhardt & Martin, 2000). As the internationalization literature suggests, the liabilities of newness and foreignness may be less constraining in new firms when founders can develop the capabilities (Autio, Sapienza & Almeida, 2000) that enable them to build new and beneficial routines for operational effectiveness (Zhou, Barnes & Lu, 2010). There is a learning advantage of newness,

such that new firms may possess a precocity for early entry into international markets introduced through their founders (Zucchella, Palamara & Denicolai, 2007; Knight & Kim, 2009). This precocity, influenced by the learning advantage of newness, may become manifest as firm-specific advantages (Hymer, 1976; Rugman & Verbeke, 1992). These occur through developing a set of dynamic capabilities (Weerawardena, et al., 2007) dedicated to the prerequisites for the new firm entering early into international markets (Tan, Brewer & Liesch, 2007).

Hence, the dynamic capabilities view provides a sound theoretical foundation to examine how founders create, transform and deploy the new knowledge resources (as described above) into the internationalization process. Dynamic capabilities are important for small firms (Døving & Gooderham, 2008) in their on-going survival and sustainability in international markets (Sapienza, Autio, George & Zahra, 2006). Although researchers acknowledge the importance of dynamic capabilities in the early internationalization process, many such studies have been conceptual (Weerawardena et al., 2007; Sapienza et al., 2006) and cross-sectional only (Im, Vorhies, Kim & Heiman, 2016; Saarenketo, Puumalainen & Kuiivalainen, 2004; Weerawardena, Sullivan Mort, Salunke, Knight & Liesch, 2015). This limits a more complete understanding of how founders initiate and manage new knowledge development and deployment for early internationalization.

Our study is an elucidatory extension of these studies. It aims at more deeply understanding how founders drive knowledge transformation in a new firm, and how the capabilities so produced ultimately address the needs of each phase in the internationalization process. Using a dynamic capabilities framework, we reveal how these interactions aggregate to determine firm-level internationalization outcomes and how this process is driven by entrepreneurial founders. We report transitional phases through which knowledge acquisition, transformation and deployment occurs. The critical role played by entrepreneurial founders in setting conditions for early entry into international markets has been acknowledged in the literature for some time (Knight & Cavusgil, 2004; Zahra & George, 2002; Jones & Coviello, 2005; Zahra, Korri & Yu, 2005; Hsu, 2007), but remains insufficiently examined (Jones, Coviello & Tang, 2011; Hewerdine & Welch, 2013). While

various activities that entrepreneurial founders engage in have been explored (e.g., Yang & Gabrielsson, 2017; Florian., Zapkau, Schwens, Steinmetz & Kabst, 2015; Basu, Sahaym, Howard & Boeke , 2015; Dunkelberg, Moore, Scott & Stull, 2013; Ciravegna, Majano & Zhan, 2014; Gabrielsson & Gabrielsson, 2013), the knowledge transformation activities they undertake to take their new firms into international markets is under-examined. Hence, the research question that guides this study is: *How do the entrepreneurial founders of B-to-B firms acquire, transform and deploy strategic knowledge resources in their firms to enable early entry into international markets?*

We contribute to the literature in five ways: First, we help to explain born global early internationalization (Rialp, Rialp & Knight, 2005). We argue that to explain comprehensively how this cadre of start-ups internationalize early in their lifecycle, we must look into the pre-requisites that enabled the entry into international markets. Adopting a dynamic capabilities framework, we reveal how new knowledge resources are acquired, transformed and deployed within the nascent firm for early internationalization. Here, we identify and report three phases through which this occurs. Second, the dynamic capabilities framework enables us to examine the interplay between dynamic and operational capabilities in building new knowledge configurations for early internationalization. This interplay has escaped empirical scrutiny in the small firm context (Zahra, Sapienza & Davidson, 1996). A focus on operational capabilities addresses a weakness in the use of the construct ‘prior experience’ that has been identified in the past literature. Operational capabilities captures technical and marketing knowledge that have been consciously developed by founders in their prior employment through willful choices. We demonstrate how the new knowledge resources contribute differently to the internationalization activities of the firm, particularly in developing knowledge-intensive, high-value adding products that are taken to niche markets using effective market strategies. Third, in developing and deploying knowledge resources that precede early internationalization, we are elaborating what occurs prior to firm internationalization and thus extending the literature (Tan, Brewer & Liesch, 2009; Zahra, 2005; Hewerdine & Welch, 2013). The firm internationalization literature has long-recognized the role of knowledge and learning (Johanson & Vahlne, 1977, 1990,

2003, 2006, 2009; Vahlne & Johanson, 2013; Petersen., Pedersen, & Sharma, 2003; Petersen et al., 2003) but insufficiently examined this role. Fourth, we find that the founding teams that orchestrate these transformative activities in their firms are not a homogenous group, but that the principal founder who often is more entrepreneurially oriented than are the other members, leads these activities. Fifth, by explicitly recognizing the knowledge transformative activities during the pre-internationalization process in B-to-B born global firms, we contribute to the broader B-to-B marketing literature where B-to-B global marketing research is considered a priority (La Placa, 2013).

This paper is as follows. First, we review the literature that indicates the research gaps addressed by this study. Second, we build our theoretical foundation followed by discussing the qualitative research design adopted for the study. Third, we discuss our findings indicating the phases through which knowledge is transformed and deployed. Finally, we discuss implications of the findings for both the internationalization and the B-to-B global marketing literature.

## **2. Literature review**

### *Pre-internationalization phase in the internationalization process*

Seminal work by Wiedersheim-Paul, Olson and Welch (1978: 47) saw pre-internationalization as the “first step in internationalization”. That is, they saw pre-internationalization as a step that was not to be disassociated from the internationalization process, stressing “the importance of a firm’s activities and pre-export behavior for the export start”. These authors isolated and empirically confirmed an array of decision-maker characteristics, location and local environmental factors, firm characteristics, attention-evoking factors, and pre-export information factors. Despite this early work, the pre-internationalization phase has received limited attention in the international business literature until recently. This can be attributed to the dominance of the stages model of internationalization (e.g., Johanson & Wiedersheim-Paul, 1975; Cavusgil, 1984), the focus of which is incremental international market entry driven by incremental market knowledge acquired by the firm after international market-entry decisions are made. A well-acknowledged shortcoming of this approach is that it does not

explicitly address how the process of internationalization begins (Luostarinen & Welch, 1990; Lamb & Liesch, 2002; Johanson & Vahlne, 2009).

There has been recent interest in understanding how activities undertaken by the firm during its pre-internationalization phase impact internationalization. For example, Tan, Brewer and Liesch (2007) appended a pre-internationalization model to the original Uppsala internationalization process model (Johanson & Vahlne, 1977), and to operationalize the internationalization stage, they conceptualized an internationalization readiness decision as the intervening mechanism. Their pre-internationalization model incorporated a new State Aspect - the pre-internationalization phase - which included the four factors, exposure to stimuli, attitudinal/psychological commitment, firm resources and the Luostarinen (1979) lateral rigidity concept. Similarly, Zahra (2005) had called for studies to consider the firm's gestation period as the capabilities applied in its subsequent internationalization would have been developed in this period, or even earlier. Hewardine and Welch (2013) agree, suggesting that activities involved in organizational emergence determine the trajectory on which the early internationalizing firm launches itself. They thus advocate studying the role of internationalization aspirations in the firm's gestation activities.

A suite of literature has also evolved from the born global/INV heritage that questions how these firms achieve their early international market entry, acknowledging universally that these firms are resource-poor (Cadogan, 2012; Ellis, 2007). The microprocesses of routines in early internationalizing firms have come under scrutiny. For example, Prashantham and Floyd (2012: 549), follow Reuber and Fisher (1997, 1999) and Sapienza, Autio, George and Zahra (2006) to propose that the "prior-internationalization experience, even pre-founding, sensitizes principal decision-makers to the differences in international market contexts ... and leads to variation in ostensive routines". However, it remains equivocal how INVs, and SMEs generally, plan and implement their internationalization activities and select foreign markets for international operations (Zahra & George, 2002; Zahra et al., 2005; Dow, 2000). As Tan, Brewer and Liesch, (2007: 294) suggest, "a focus on firms' pre-internationalization activities will not only offer an additional important perspective to the



study of firm internationalization but it will also address a significant research gap” in our understanding of how firms are taken into international markets early in their lifecycles.

#### *Founders and firm early internationalization*

While the role of founders has received substantial attention in the early internationalization literature, the focus has been on the presence of prior international experience (Oviatt & McDougall, 1997; Madsen & Servais; 1997; McDougall, Oviatt & Shrader, 2003; Zucchella, Palarma & Denicolai, 2007), and founder characteristics such as a geocentric mindset (Burpitt & Rondineli, 1998), a global mindset (Knight & Cavusgil, 2004), or an international market vision (Weerawardena et al., 2015). Beyond the ‘founding coalition’ focus (Madsen & Servais, 1997; McDougall, Oviatt & Sharader, 2003; Sharma & Blostermo, 2003) has been limited attention to the potential, and possibly critical, role of the principal founder (Westhead, Wright & Ucbasaran, 2001). Largely unexplored remain the roles played by the founding team and its individuals members in developing and transforming new knowledge resources in capabilities formation needed for early internationalization.

#### *Dynamic capabilities*

In building our conceptual foundation, we draw on the knowledge-based view and the dynamic capabilities view (DCV) of competitive strategy. While the knowledge-based view (Grant, 1996; Leiponen, 2006; Nonaka, 1994; Eisenhardt & Santos, 2002) asserts that managing critical heterogeneous knowledge resources contributes to sustained competitive advantage, the dynamic capabilities view relates to the strategic activities to be undertaken to build new knowledge configurations that will provide a platform for a firm’s competitive strategy (Eisenhardt & Martin, 2000; Helfat, Finkelstein, Mitchell, Singh, Teece & Winter, 2007). The new knowledge configurations enable the organization to pursue its primary value-creating strategy through a capability to solve

problems and to address change or anticipated change; such a capability obviously depends on the organization changing how it solves problems (Zahra, Sapienza & Davidson, 2006).

The dynamic capabilities literature suggests the importance of distinguishing two types of capabilities. There are those used to perform the basic functions of the firm and those used to improve the firm (Collis, 1994). Zollo and Winter (2002) and Winter (2003) distinguish operational (zero-order) and dynamic (first-order) capabilities. Operational capabilities are geared towards “how we earn a living now” (Cepeda & Vera, 2007: 426) while “a dynamic capability ... enables a firm to alter how it currently makes its living” (Helfat & Winter, 2011: 1244). The literature suggests that dynamic capabilities create new knowledge resources through transforming operational capabilities. However, we use Zahra, Sapienza, and Davidson (2006), who suggest that dynamic capabilities provide a firm with the means to reconfigure its resources and routines in the manner envisaged and approved by the firm's principal decision maker(s). Research into the suggested relationship between dynamic capabilities and operational capabilities has been limited. Three notable exceptions are the cross-sectional study by Cepeda and Vera (2007) and the qualitative work by Ellonen, Wikstrom and Jantunen (2009) and Ellonen, Jantunen, Kuivalainen, (2011). The latter’s exploratory case work (2009) and a single in-depth case study finds that dynamic capabilities trigger the development of mechanisms for the operational capability development needed for innovation. However, no prior studies focus on how the dynamic capabilities are formed and how they sequentially shape the operational capabilities that create preconditions for early internationalization.

The strategic activities through which knowledge transformation occurs have been variously labeled to indicate they: build, integrate and reconfigure (Teece, Pisano & Shuen, 1997), integrate, reconfigure, gain and release, match environmental change (Eisenhardt & Martin, 2000), generate and modify (Zollo & Winter, 2002), and create, extend and modify (Helfat, 2007). Because these varied terms have confused, we propose that each of these typologies is generalized as two processes: an initial acquisition process of the capability that can build, gain, create or generate; and a subsequent transformation process that can extend, modify or reconfigure. In this study, we adopt the typology

build, integrate and reconfigure (Teece, Pisano & Shuen, 1997) as these terms capture the stages of transition from initial acquisition, to build through a creation stage, to integrate by reinforcing routines, and finally to reconfigure through adaptation. To our knowledge, no empirical research has hitherto found that these routines evolve sequentially, as is implied in the literature.

In comparison with prior models of competitive strategy, the DCV assigns a prominent role to entrepreneurial managers in the value-creating process, suggesting that they are essential for building and nurturing dynamic capabilities in the firm. They do not merely accrue to an organization from a good fit with industry or environmental requirements, but are developed consciously and systematically by the willful choices and actions of the managers (Grant, 1991; Lado, Boyd & Wright, 1992; Teece et al., 1997). Recently, there has been a call to examine the role of strategists in the firm to better explain firm level heterogeneity (Teece, 2012). Overall, we observe that the presence of dynamic capabilities proposed to explain heterogeneous firm performance (Cepeda & Vera, 2007; Eisenhardt & Martin, 2000; Helfat 2007; Teece et al., 1997; Zahra et al., 2006) provides a sound theoretical foundation for our inquiry.

### **3. Method**

We adopted a qualitative research design as best suited to addressing our research question; such research also responds to the perceived need for more qualitative studies in industrial marketing (LaPlaca, 2013). We conducted multiple case studies (Eisenhardt, 1989; Yin, 1994) using the critical incident method (Miles & Huberman, 1994) to capture the sequential stages through which knowledge is accumulated and transformed. While in his study examining the evolution of capabilities, Montealegre (2002) uses the critical incident method within a single case design, he does not examine the interplay between dynamic and operational capabilities. Although not adopting his single case design, we do follow his critical incident approach to examine this interplay.

Our sampling strategy followed a theoretical replication logic (Yin, 1994) where the determining principle for case selection is relevance rather than representativeness (Stake, 1994). To

select cases, we approached numerous industry sources to identify firms that had footholds in multiple international markets with at least one founder living or active in the firm; we sought the finer details of their journeys. We selected firms that had started exporting within three years of foundation and had at least 25 percent of revenue derived from exporting (Knight & Cavusgil, 1996). All the sampled firms were located in Australia. Restricting our focus to the one nation meant that its macro-economic influences would affect our sampled firms consistently and that we could interpret at the firm level. Sampling proceeded until theoretical saturation (Eisenhardt, 1989; Glasser & Strauss, 1967) which was determined when no new constructs emerged despite the addition of new cases to the analysis. Consistent with the four to ten cases suggested by Eisenhardt (1989), seven B-to-B entrepreneurial firms were included in the study. We aimed at capturing theoretical variation (Eisenhardt, 1989) by using cases from diverse industries to assist us to extend our findings beyond the one industry setting (Seawright & Gerring, 2008). Our sample is comprised of ‘true born global’ firms (Kuivalainen, Saarenketo & Puumalainen, 2012). They have high export intensity, target many countries, operate on a truly global scale, and include a global value chain. The characteristics of the sampled firms appear in Table 1.

In-depth interviews were conducted with founding and senior managers of the sampled firms as these persons possess the most comprehensive knowledge of the characteristics of the organization, its strategy and performance (Snow & Hrebiniak, 1980). Initial interviews lasted around 90 minutes with multiple follow-up interviews over a two-year period. Although the interviews were conducted with an interview guide, all were tailored, covering the interviewees’ education and family background, networking efforts, development of knowledge routines, strategic visioning, prior employment, and exposure to international knowledge sources. We recoded the transcripts for evidence of entrepreneurial orientation [innovativeness, risk taking, proactiveness (Miller, 1983)]; we found these founders to have a medium/high intensity. Using probes, we focused on the interviewees’ perceptions of critical incidents that shaped the paths taken by their firm, in particular, what happened

and why, how decisions were made, the actions influenced, and how difficulties were overcome as the firms were steered towards international markets (Miles & Huberman, 1994).

During the interview process, the subjects were asked to suggest other individuals who would be useful to assist with understanding how events unfolded within their firm. This led to interviews with other members of the initial founding team, current senior managers and directors, and other persons who were associated with the important events of the firm. We sought to capture in-depth details from multiple internal and external sources (see Table 1) of relevant documents and archival data about the organization that we collected. These sources of data allowed the triangulation of reference material for thematic analysis and for post-research inquiry (Creswell, 2003). It was achieved by including these types of data in the analyses as critical incidents/events, processes and structures emerged from the interview data, thereby forming distinct data points by either elaborating or extending constructs within the analyses.

**Insert Table 1 about here**

Following Glaser and Strauss (1967) and consistent with Rindova et al. (2011) and Montealegre (2002), we developed an overall case narrative and chronological description for each firm. Using critical incident charts for each firm (see Figure 2), we then described our analyses of the sequences by which organizational routines were built and nurtured by the founders. This approach was adapted from Creswell (2003), Glaser and Strauss (1967) and Yin (1994). Adopting the approaches of Rindova et al. (2011) and Tracey, Phillips and Jarvis (2011), we analyzed the data structure (see Figures 1a, 1b and 1c) to elicit emerging theoretical perspectives. Consistent with Montealegre (2002) and Yin (1994), we compared and contrasted our observations with the literature on dynamic capabilities, internationalization, and high-tech marketing (Welch, Piekkari, Plakoyiannaki & Paavilainen-Mantymaki, 2011) iterating between deduction and induction. Inductive processes were used to build both the critical incident/event chart and the higher order constructs from

the data; deductive processes were used to compare and contrast elements in the analysis and to enfold the literature (Eisenhardt, 1989).

#### **4. Findings**

We focused on how the founders engaged with the formation of their nascent firm. At this point, the founders took stock of the operational capabilities they had developed in their prior employment, and in the market opportunity to be exploited. They determined what new knowledge resources were needed to realize these opportunities. Further, we examined how dynamic capabilities emerged in the new firm and how they transformed early stage operational capabilities to new and more advanced examples. Through data structure analysis, we identify three sequential phases and demonstrate how they connect.

##### **Phase 1: Opportunity identification and emergence of dynamic capabilities**

###### *Founders and their operational capabilities*

At this phase, we report how the dynamic capability development process and the strategic direction of the firm were initiated and guided by the knowledge resources that were developed by founders in their prior employment and that were endowed to the nascent firm. In a pre-firm capability formative stage, the founders engaged in developing personal knowledge stocks, establishing the embryo of an area of expertise. This was followed by purposefully developing a set of knowledge routines learned from their employment prior to establishing the nascent firm. These routines collectively constituted a set of operational capabilities. The case evidence is organized by identifying a hierarchy of empirical observations, theoretical observations, and interplay of theoretical constructs [see Figure 1 (a)–(a)]. Two organizational aspects became evident: the assortment of operational capabilities in international markets: relationship-based knowledge development, technology and innovation, and new product development and international marketing that were brought to the firm; and the interplay of those operational capabilities. A central question is how the nascent firm became endowed with these

operational capabilities. As our findings suggest, they resided in the cognitions (Zahra, Korri & Yu, 2005) of the founders of the yet-to-be new firms. That the individual can be a repository of knowledge routines (or collectively, operational capabilities) opposes the prevalent belief in the dynamic capabilities literature that organizations are repositories of routines (e.g., Nelson & Winter, 1982). The founder of Case A relates about their experience in starting new businesses: “Why was I confident? Because in the 22 years I was with (major digital firm X) and (major digital firm Y) I suppose my prime strength was starting up new [international] businesses ... and over those 22 years I started up six new businesses”, and similarly, the founder of Case C relates his prior experience in establishing operations in international markets: “It started over the course of the 90s ... my position over there was Vice-President and I established [international markets] in Atlanta, Georgia and Oxford, England”.

The founders brought these operational capabilities with them to the new firm where this phase concluded with the interplay of operational capabilities that would then be available for further transforming and exploiting. This process evolves through collective sense-making and synergistic mutation and aggregation that leads to the dynamic capabilities that act to realize the identified opportunity [(Figures 1(a) – (b)]. These activities are described in the next section.

**Insert Figure 1a (both a and b) about here**

#### *Collective sense-making*

At this phase, both individual and collective sense-making is associated with an emergent opportunity and the social interactions engaged to underpin the early stage formation of dynamic capabilities in the new firm. As reported in Figure 1a, the intentionality opportunity-focus (Muzychenko & Liesch, 2015) of the founder, mediated by social interaction (Li, Chen, Liu & Peng, 2014) acts conjointly to develop knowledge routines. This process is characterized at the micro-foundational level by the social processes of *externalization and sense-making*, and *synergistic mutation and aggregation* of

knowledge routines founded in the collective sense-making of the market opportunity that has been identified. The individual entrepreneur's knowledge-in-hand is applied in the new firm to visualize strategic direction in pursuing strategic choices. Figures 1 (a) and (b) report empirical observations of this phase. The principal founder's role was distinctively evident in this process that underpins the emergence of a set of dynamic capabilities comprising routines for shaping and seizing opportunities and reconfiguring assets and structures (Teece, 2007). Once formed, these routines represent the capacity to change the firm's arsenal of operational capabilities: the-how-to-make-a-living processes (Pavlou & El Sawy, 2011; Winter, 2003).

Illustrative is Case A (security surveillance) in which two founders with complementary capabilities realized an intent to pursue their own business interests after working in the same IT company for two decades. The principal founder primarily specialized in new venture creation with the other in advanced IT applications. Previously, they came upon non-motion technology-based security surveillance software that had been developed by another company, which they purchased and patented. Although this technology was not readily marketable, their entrepreneurial drive coupled with prior extensive market experience enabled them to visualize the potential of this newly-acquired sophisticated surveillance technology: it operated on the principle that it is better for track moving objects that become motionless rather than monitoring all moving objects all of the time. As the founder of Case A related

*Well we had done a lot of research, and they had developed a little bit of software but it wasn't quite a product. The technology we used is called artificial intelligence.....I knew how long it would take us and how much it would cost us to get from where we were to something we could sell*

Discovering this process motivated these entrepreneurs to change knowledge resources in-hand, and to develop new knowledge where necessary, once the merit of this innovative principle was fully appreciated. The following two salient activities are evident at this phase, *externalization and sense-making*, and *synergistic mutation and aggregation*. We elaborate on these activities.

During the *externalization and sense-making* activity, the founders perceive the stock of



knowledge routines they have at-hand while negotiating a rough future direction for their business. This externalization activity is akin to knowledge articulation (Zollo & Winter, 2002), where the founders seek to understand how they can collaborate to develop and achieve personal and firm-level goals. Here, the founders' collective sense-making is revealed through "their ability to scan the environment, to evaluate markets and competitors" (Teece, 1997: 521). Sensing is directed towards the spotting, interpreting and pursuit of opportunities in the external environment (Pavlou & El Sawy, 2011; Ardichvili, Cardozo & Ray, 2003). The externalization of routines is important to the knowledge evolution cycle of start-ups (Cepeda & Vera, 2007), whereby the knowledge of founders, focused to develop international opportunities, is transferred to, and held in common at, the firm-level.

*Synergistic mutation and aggregation* describes the give-and-take and mutual learning that results from a deliberative and considered approach to develop dynamic capabilities 'fit for purpose' to serve the strategic direction of the new firm. Transferring the knowledge possessed by founders to knowledge focused to develop an international opportunity does not merely aggregation knowledge routines brought in by founders; this could lead to constraining rigidities (Dierickx & Cool, 1989). This transfer involves generating synergies and options that are driven by the envisaged market opportunity. As Zollo and Winter (2002) suggest, by sharing individual experiences and comparing opinions, engaging in constructive confrontation, and challenging each other's viewpoints, important collective learning happens. We identify this activity to be synergistic mutation of the routines from the original capability set. However, this is not always a seamless process as exemplified in Case E relating to biometric identification systems, where disagreement about investment needed and disappointment about the pace of progress led to fracturing the founding group and the exit of a number of players. The founder relates

*I said – Well you don't want to be too hasty about that (leaving), XXXX (founding team member). Perhaps before you make that decision, you should come and visit us ... and just see what a mess our technology is in the marketplace.*

The principal founder worked to re-build the team and establish a legal entity to pursue the opportunity they had in mind and formalize implicit but increasingly explicit rules for future firm

behavior. The establishment of such rules and routines is itself a rational decision (Simon, 1997). This aggregation process has been cited as an important stage in formalizing capabilities, but as Felin and Foss (2009) acknowledge, it has usually escaped empirical scrutiny.

Overall, the emergence of dynamic capabilities through this synergistic mutation and aggregation within this new firm confirms that the principal founder had taken charge of the strategic direction of the firm and, in particular, could transform operational capabilities into an identified strategic direction. As these findings demonstrate, dynamic capabilities are supra-ordinate processes (Zollo & Winter, 2002; Winter, 2003) that are goal-directed towards systematically transforming operational routines into an emergent market opportunity. Under the principal founder's guidance, with a set of dynamic capabilities now developed through establishing the firm, the next phase requires attention. It involves transforming operational capabilities at-hand to reach potentially viable markets.

## **Phase 2. Opportunity capture: Birth of transformed operational capabilities through knowledge transformation**

In this opportunity-capture (Li, Chen, Liu & Peng, 2014) phase, we observe that operational capabilities inherited by the emergent firm from their founders' knowledge are transformed according to the perceived feasibility (Muzychenko & Liesch, 2015) of the market opportunity (Figure 1b). This provides operational capabilities for a global market-focused learning capability, a network-learning capability, a global-marketing capability, and an internally focused learning capability for a global market-focused firm. Figure 1(b) reveals the empirical activities we have adopted, moving from empirical observation, to theoretical observation, to identifying the theoretical construct: the transformed operational capabilities needed in the firm to pursue its identified opportunity.

We reveal the need for transformation to be threefold. First, although the founders had formed a new firm without a readily marketable product or clearly articulated target market, they were confident of developing these from the operational capabilities they had accumulated. Second,

operational capabilities that were inherited by the new firm had been built for the strategic purposes of previous firms in which the founders were employed. This created rigidities (Leonard-Barton, 1992) in identifying the new market opportunity, thus necessitating transformation. Third, the task of moving towards a viable market opportunity was a matter of effecting the process where the end goal is known but the decisions on activities to reach this end goal cannot be determined by the systematic application of known analytical parameters (Read, Dew, Sarasvathy, Song, M, & Wiltbank, 2009; Sarasvathy, 2001). This ambiguous state is amply demonstrated by Case E (biometric staff identification system):

*After watching our demonstration, one of the venture capitalists dragged me to the side and said, 'look this technology is going to take a little while to get going. ... I am absolutely blown away by what you're doing; you've really got some good quality guys with you, I am prepared to write a check against these guys; how much money do they need?'. I had never thought about that. I knew what it was costing me at that time, after my forecasts about what it might cost me to run the business ... We were growing it incrementally, and going down the evolutionary path.*

Whilst this is a state of vagueness and indecision, the principal founder's role at this stage was prominent in our case evidence. The initial knowledge routines that the principal founder had developed in prior employment, and the opportunity visualized by them, substantially guided the knowledge transformation activities at this phase.

### **Insert Figure 1b about here**

As the founders embarked on the task of converting a vague product idea into a marketable product, they found that the operational capabilities they possessed were not adequate; knowledge was incomplete. Case A (security surveillance) demonstrates how the patented technology that the founders had acquired was integrated with the IT-based knowledge routines that they assembled, which they then transformed to convert this knowledge into a marketable security surveillance product. In this process, the founders had to create new knowledge in image processing to ensure that

the surveillance technology they were developing could be used with any leading brand of cameras, thereby rendering the technology affordable. As the founder of Case A relates:

*I'd been involved in artificial intelligence previously but image processing was new to both of us and so for the first couple of years we actually subcontracted people from the CRC to support us and we had our own people too but we also paid them to work with us in some of that development. I think at the end of about 18 months or two years we got to the point where our people actually had more expertise in the subject and at least partially so because on their side some of the key people had now moved on to other things.*

In addition to the transformation of technical operational capabilities, the founding team also had to reorient the focus of their operational capabilities in marketing and international market learning (non-technical) to the market opportunity they were aiming to exploit. For example, most of our firms were developing products that were totally new to the world, which required educating the market.

Likewise, the product-centered market knowledge routines they had developed in their prior employment had to be transformed so that the market they intended to target was understood. For example, in his prior employment, the principal founder of Case C (electrical switchgear) was producing conventional electrical transformers for the domestic market. However, with his new enterprise embarking on developing intelligent switchgear for the global market, the varied voltage requirements in different countries demanded product modifications. This required extensive travelling for discussions with distributors in the many potential overseas markets to better understand their varied voltage requirements and whether these modifications could be built into the new switchgear.

Overall, as our findings suggest, the much-discussed (Teece et al., 1997; Helfat, 2007) generative mechanisms of build, integrate and reconfigure (discussed earlier) do not necessarily occur sequentially when transforming knowledge resources. As our case evidence demonstrates, the need to convert the technology in-hand to a marketable product will compel founders to again and again build new knowledge in an iterative mechanism around an interim reconfigured outcome so that the three generative mechanisms need not be mutually exclusive.

**Phase 3: Opportunity realization: Product and marketing innovation through the interplay of capabilities leading to early entry into international markets**

*From path-dependent to path-breaking change*

Within this phase (Figure 1c), we observe founders departing from what they had been doing in the past through the application of the newly formed operational and dynamic capabilities - path breaking change is demonstrable at this phase. Illustrative of the complexities involved with the deployment of the new operational capabilities is the highly innovative intelligent electrical switchgear developed by Case C for the global market. The principal founder's operational capabilities in the production of conventional electrical transformers, acquired in prior employment, were further refined, transformed and integrated to address the latent global market opportunity for efficient and more environmentally friendly electrical switchgear.

The extensive market learning capabilities of the founding team in Case C identified a market need for oil-free and hazardous gas-free low maintenance switchgear. In addition, the new product addressed a weakness in conventional switchgear systems in that in the event of a power-failure with existing technologies, linesmen had to check a long stretch of power lines to detect the exact location of the failure before it could be rectified. Similarly, the new system had an intelligent failure identification and rectification mechanism in-built which has revolutionized this sector. As the CEO relates:

*Well for around seven years I worked at Company XXX where they make low voltage switchgear for the domestic market. Later I worked in company XX where they make satellite communication equipment and company XX which makes artificial intelligence based systems. It was pretty interesting. Sort of perfect grounding for our new product..... With this knowledge I was able to do the complete opposite – to make medium voltage switch gear for the global market and our products fixed up the problems which we knew with old switchgear'*

Addressing a global market need, the software embedded within the new switchgear and instruction manuals was adjusted to languages spoken overseas in high demand markets. Further, the founders took an entrepreneurial marketing decision by setting their switchgear to a global standard enabling access to one of the most lucrative markets, the US. The transformed operational capabilities in market learning and internal learning worked conjointly to create a path-breaking technology with global market potential. As *founding CEO of Case C (innovative electrical switchgear relates;*

*Yes, when we thought of the product from the very beginning, we thought about the architecture in terms of being able to have very quick and easy customisation or user configurable type functionality. From an automation point of view we had this particular protection level that we had set it for... 500 Volts but for the Mexico we had to change that particular product from a 500 Volt protection level to 1500 Volt protection level to comply with country specifications'*

Similarly, CEO of Case A (security surveillance) relates;

*In some places our software system works with 800 cameras. By working with customers we know some clients already have their cameras. They will say oh I prefer Canon so then they put in Canon cameras. In building our technology we said it has to be open. Right. So from the beginning we built it so that we have a totally open interface. We can deal with anybody's cameras, all new, digital, analogue, whatever.....That's right. What we say is the cameras are the eyes. Our system is the brain. We only sell brains.*

### **Insert Figure 1c about here**

#### *Deployment of transformed operational capabilities*

Overall, the founders at this stage deploy their new knowledge resources through transforming operational capabilities capable of addressing an identified market opportunity. They also develop knowledge-intensive products targeted at the specific market niche they have identified. The assortment of transformed capabilities (see Figure 1c) that were developed are: a market-focused learning capability, network learning capability, internally-focused learning capability, and marketing capability. Notably, all these capabilities were not consistently useful in all phases of the early internationalization process. While all the transformed operational capabilities contributed in

developing cutting-edge products, the internal learning (R&D) capability took a backseat to market learning, network learning and marketing capabilities. These three were particularly important to taking the products to intended international market niches. For example, network learning enabled founders to determine a global market niche that matched with the product. As the high-tech international marketing literature suggests, network knowledge enables founders to recognize that greater opportunities existed in overseas rather than in domestic markets (Crick & Spence, 2005).

### *Entrepreneurial market development strategies*

The B-to-B entrepreneurial firms we studied had a common challenge: to convince mainstream customers that the new technology will provide greater value to them and to persuade them to acquire the new technology. Although B-to-B firms with technologically sophisticated and high-value potential products can easily impress the ‘technology enthusiasts’ who constitute the early market, they are but a small segment that will not earn sufficient adequate income to assure the long-term viability of the firm (Moore, 1991). On the other hand, the B-to-B entrepreneurial firm is ahead of the market with a product of unrealized potential, this being a chasm to be crossed (Moore, 1991).

The sampled B-to-B entrepreneurial firms that we studied successfully crossed this chasm by extensively using the transformed international market knowledge and marketing routines that they had acquired during prior employment to adapt entrepreneurial marketing strategies (Sullivan Mort, Weerawardena & Liesch, 2012). In this activity, they variety of strategies comprised educating the market, using a reference site, making the first sale to a highly industrialized advanced market, distinguishing the cutting edge technology from that of competitors, and gaining legitimacy in highly competitive global markets. All these strategies, within their resource constraints, were aimed at attracting mainstream customers to experience the new technology preferably at a reputable site and to develop a ‘whole product’ with support services. For example, Case A (security surveillance) installed its technology in a well-known bank in Sydney, Australia, thus providing a highly visible reference site for potential customers to see the technology in action. A major breakthrough came with the

Australian government's decision to install the firm's world-class security surveillance technology at the iconic Sydney harbor bridge when potential terrorist efforts targeting this installation became evident after Australia became a coalition partner with the US against global terrorism.

All our B-to-B entrepreneurial firms used a reference site to demonstrate their technology in action. This was important in convincing skeptical mainstream customers, the 'pragmatist' in particular, who would like to form their own opinion instead of being influenced by the 'technology enthusiasts' (Moore, 1991). The reference site not only played an important role in educating mainstream customers of the superiority and reliability of new technology but also contributed to the start-up firm's quest to gain legitimacy in global markets. Using trade shows that are exclusive to the technology category, and presenting papers at technical seminars were other strategies used. To differentiate their cutting-edge technology from that of competitors, Case A (security surveillance) assigned IQ ratings to all types of surveillance technology available in the market. As the CEO illustrates;

*From the beginning, we knew we had to educate the market about our technology. In the intelligence surveillance business, when you go to a trade show you will find around 2000 people who will say that they are all in intelligence surveillance. So to differentiate ourselves we started giving all our own products an IQ rating. Just like human beings. So an IQ of 100 is the average of the population. 50% are above and 50% are below. So we have products that go from about IQ of 60 to about IQ of 180. At the IQ 60 level... there are probably about 2000 players. As you get up to about IQ 100... there are probably about 200 players, Yes...in the world. When you get to about IQ of 120 there are only about 4 or 5 players including us, Israeli, US company, one is an Italian company. So there are very few players worldwide. And then when you get above the IQ 120 to the 140 to 180 space -- that's where we shine and that's where we get all our awards. That's where we are unique. But this was a great marketing concept. Because now when we go to the market, we go to our competitors and ask some questions like so what IQ is your product? (laughs)*

All our sampled B-to-B firm firms strategically sought media attention and to win globally and nationally respected industry awards. Both Case A, the security surveillance technology firm, and Case C, the electrical switchgear company won many prominent industry awards for export performance and entrepreneurial excellence over many years. This represents resource leveraging in that resources that are external to the firm are used to gain competitive advantage through greater



visibility and credibility through widespread national and international exposure (Morris, Schindehutte & LaForge, 2002); Sullivan Mort, Weerawardena & Liesch, 2012). As the founder of Case A relates:

*We launched our product at a show in the UK which is probably the world's largest security show. At that time, we were really a very small player... we had to stand in the corridors and drag people in because nobody wanted to even talk to you. In 2004, when we went back to the same show, we won the best security product award for the show. So in a year we were considered the best and after that it really took off.*

Case B, a gaming firm, strategically seeks global recognition and legitimacy through a variety of strategies such as securing accreditation of global authorities and having a webpage with a global focus that identifies it to be a global firm, while it is actually a minnow firm. Case B also has pursued an allied legitimacy-seeking strategy of being awarded international accreditation from KEMA, the global standards authority specializing in inspections and measurements, testing and certification for the electricity industry. On the other hand, we have also seen examples of the founders' technical expertise providing initial market legitimacy and acceptance for any offering of the firm. As noted earlier, senior members giving addresses at reputable international conferences and seminars contributed to legitimacy. Many of the sampled B-to-B firms used their market and network knowledge and superior marketing capabilities to have the first sale in one of the highly industrialized markets such as the USA and Europe. For example, Case B (gaming company), Case A (security surveillance), and Case G (transdermal delivery of medicine) made their first sale to the USA. The Case F that developed the first biodegradable plastic trays for the confectionary industry was successful in Europe. As the founder of Case G relates

*The global drug market is massive and more than 50% of it, probably is in the USA... So I think that right for the start (we) knew that what we had to do was develop drugs primarily for the US market, and then commercialize around the world, including Australia, off the back of it.*

Overall, these strategies complemented each other in winning the attention of mainstream customers to convince them to buy the firm's new technology.

## **5. Discussion**

We posed the research question: *How do the entrepreneurial founders of B-to-B firms acquire, transform and deploy strategic knowledge resources in their firms to enable early entry into international markets?* Our findings suggest that developing and deploying new knowledge configurations is inherently dependent on dynamic capabilities, iterating on the build, integrate and reconfigure processes, until the emerging strategic intent is achieved. These dynamic capabilities transform the inherited operational capability set to new strategically aligned operational capabilities. This occurs over three phases. Which are managed by the founding team to capture a potential overseas market opportunity. Figure 2A displays how knowledge processes evolved across critical incidents.

#### *Three phases of knowledge transformation and deployment*

In the first phase, we observed the founders identifying a potential market opportunity that motivated them to transform their operational knowledge to capture this opportunity. Our findings on operational capabilities that were brought to the firm by founders from their prior employment and subsequent building of dynamic capabilities have important implications for both the born global and high-tech marketing literature.

First, operational capabilities effectively address the weaknesses of, and replace, the ‘prior knowledge’ or ‘prior experience’ that the BG literature shows to facilitate internationalization (Autio & Sapienza, 2000; Harveston, Madsen & Servais, 1997; McDougall, Oviatt, & Schrader, 2003; Oviatt & McDougall, 1997; Sharma & Blomstermo, 2003). Prior international experience is a collective term that does not effectively capture technical and international market knowledge that differently affected the phases preceding early internationalization. As Weerawardena et al. (2007: 296) argue, “international experience is a static construct with limited explanatory power of itself ... [and] not usually situated in any major theoretical frameworks of firm internationalization.” We concur with their view that “most importantly, the prior experience perspective has failed to capture the various knowledge acquisition processes and how such learning leads to the development of new routines and

systems that result in improved effectiveness and accelerated internationalization of the born global” (Weerawardena, et al., 2007: 296).

In a substantial departure, we observe that operational capabilities are not merely inherited by the firm but are developed consciously and systematically by the willful choices and actions of the managers (Grant, 1991; Lado, Boyd & Wright, 1992; Teece et al., 1997). Operational capabilities (collective knowledge routines) effectively capture and differentiate the multiple yet related knowledge resources that were brought into the nascent firm by the founders. For example, the founder of Case B in prior employment had developed technical capabilities in building conventional electrical transformers, artificial intelligence-based systems and satellite communication and international marketing knowledge. These knowledge resources, after being transformed to address the new market opportunity, differently affect the three phases preceding early internationalization.

Second, this phase demonstrates how dynamic capabilities were collectively built by founders and involve the capacity to transform an initial set of operational capabilities through which the primary value creation strategy of the firm is executed. In this phase, the microfoundational level activities of externalization and sense-making, and synergistic mutation and aggregation, paved the way to form dynamic capabilities. These microfoundational activities are guided by the founder’s collective sense-making in identification and exploitation of the intended market opportunity. In our case, the founder’s international vision builds these microfoundational activities so that the firm can respond to specific international contexts and international market opportunities envisaged as both desirable and feasible (Muzychenko & Liesch, 2015).

The need for knowledge transformation and the beneficial effects of transformed knowledge on firm heterogeneity has received attention within both the dynamic capabilities and organizational learning literature, but is inadequately examined in the industrial marketing literature. The ‘static experience’ or operating routines developed for one market have been suggested to sometimes impede a firm’s ability to enter a new market niche (King & Tucci, 2002). Our findings are more aligned with the capability-rigidity paradox (Leonard-Barton, 1992). It suggests that “successful product innovation

demands that a firm must exploit its existing capabilities while trying to avoid their dysfunctional rigidity effects by renewing and replacing them with entirely new ones” (Atuahene-Gima, 2005: 61). In our case, the operational capabilities captured by the new firm were often unfocused or had been developed in previous firms for a different strategic purpose. The mere aggregation of operational capabilities without transformation can lead to rigidities (Dierickx & Cool, 1989).

In the final phase, we observe the founders of B-to-B entrepreneurial firms harvesting the new knowledge configurations developed through transforming operational capabilities to build knowledge-intensive product and marketing innovations. In contrast to the path-dependent behaviors observed prior to the development of dynamic capabilities in the literature, at this phase we find that the founders now venture into a totally new product and market territory. This path-breaking behavior is made possible by the founding team and their dynamic capabilities. They can apply these dynamic capabilities to transform operational capabilities in-hand to address the potentially lucrative market opportunity as envisaged. Notably, we observed in our findings that the transformed capabilities: a market-focused learning capability, network learning capability, internally-focused learning capability and marketing capability, contributed differently in various phases of product development and marketing processes. Internal learning (R&D) and network learning capabilities were secondary in taking the products to intended international market niches where the role of market learning and marketing capabilities, in particular, were critical. Both the path-breaking product innovation and the innovative or market development strategies underpinned the early entry into international markets.

Our findings contribute to advancing the B-to-B global marketing literature in two specific ways. Generally, the findings contribute by focusing on the capability formation and transformation processes that occur at the nascent firm formation and early international market entry phases. The pre-internationalization phase has received limited attention in particularly the B-to-B global marketing literature. Our focus on pre-internationalization expands this global marketing literature and unites its stream of research on INV and born global internationalization explicitly. In this first phase, we specifically uncover the crucial role of dynamic capabilities that transform the operational

capabilities inherited through key founders into the form of the new operational capabilities that enable internationalization. Neglect of the pre-internationalization phase in research has resulted from both the relative dominance of the large firm in B-to-B global marketing research, and second, from the general models of internationalization (e.g., Johanson & Wiedersheim-Paul, 1975; Johanson & Vahlne, 1977, 2009; Cavusgil, 1984). These are concerned with incremental market knowledge acquired by the firm after international market entry decisions are made.

However, we acknowledge work on phases in the internationalization process that has recently entered the literature. Coviello (2006) applies a life-cycle model; Mathews and Zander (2007) uses an entrepreneurial model that crosses international boundaries; Gabrielsson et al. (2008) suggest opportunity recognition, growth and breakout phases; others such as Rialp-Criado et al. (2010) describe a configured holistic approach involving startup, pre- and post-internationalization; while Gabrielsson and Gabrielsson (2013) find that effectuation logic moderates growth and survival phases. Our work is distinct from the literature on phases in that, while we also report the existence of phases, their content and the transition between them follows the internal logic of capability development. It involves marshalling and applying both dynamic capabilities and transformed operational capabilities, while emphasizing the important pre-internationalization phase where this work is triggered, and which then sets the emerging firm on a sequence of path breaking initiatives. The previous work on phases uses, largely, borrowed models such as lifecycle (Coviello, 2006) or has to use a *deus ex machina* approach and integrates some external factor to make the phases function, having no internally supported logic by which this would happen (e.g. Gabrielsson & Gabrielsson, 2013). Distinct from others (e.g. Gabrielsson et al., 2008; Rialp-Criado et al., 2010), formalizing the venture is associated with the final phase of opportunity realization. The two specific contributions, chasm crossing and returning to entrepreneurial founders, are now discussed.

*Crossing the chasm* Our findings suggest that early international market entry requires firms to develop cutting-edge, technologically sophisticated products that address the needs of a viable market

segment. This requires them to build new sophisticated technological knowledge resources, the extent of which makes mainstream buyers skeptical. To cross this chasm (Moore, 1991), the new entrepreneurial firm needs to deploy new knowledge resources. As our findings indicate, at this phase, market learning and marketing capabilities are crucial to firms developing entrepreneurial market development strategies to reach mainstream buyers in global markets. However, as noted earlier, in spite of the increased recognition of Moore's (1991) view about the challenges faced by hi-tech start-ups reaching mainstream markets, literature examining how such firms effectively cross the chasm has been limited except for a handful of studies (e.g., Muller & Yogev, 2006; Vakratsas & Kolsarici, 2008).

Our findings extend the literature by suggesting that new product success critically hinges upon the firm's expertise in marketing activity and effectiveness related to new product diffusion (Cooper & Kleinschmidt, 1990; Gardner, Johnson, Moonkyu & Wilkinson, 2000). We also elaborate on the processes required to cross the chasm in B-to-B small-firm internationalization. Inadequate marketing attention contributes towards the high rates of venture failure in high-tech start-ups (Dunn & Probst, 2003; Arnolds, Tait & Dayen, 2006). However, we also find that external learning in networks and, importantly, an internally focused learning capability, must also be deployed in combination with the two aspects of marketing in crossing the chasm. The dynamic capability process emerges in Phase 1, using the inherited operational capabilities to transform them into strategically important knowledge routines that result in these transformed sets of new operational capabilities. The final phase of opportunity realization is again underpinned by an interaction of both dynamic learning and operational capabilities and their application to the tasks of new venture creation as well as new product, process and market establishment innovation.

Overall, the three phases demonstrate how the founders overcame their liability of newness and foreignness in international markets (Hymer, 1976; Mudambi & Zahra, 2007; Zhou, Barnes & Lu, 2010). These liabilities are curtailed by the founders developing new knowledge resources that will not only produce knowledge intensive products, but also take products to chosen niche markets

through entrepreneurial marketing strategies. In particular, as discussed in Phase C of our findings, the sampled firms ‘cross the chasm’ by using entrepreneurial market development strategies that are visionary and aimed at overcoming resource constraints (i.e., newness and foreignness) that are instrumental in limiting the reach for chosen niche markets. In particular, these strategies were aimed at gaining legitimacy in international markets, achieving competitive differentiation, and resource leveraging for greater market penetration.

*Role of entrepreneurial founders*            The dynamic capabilities framework adopted in this study facilitated our examination of the role of entrepreneurial actors and their actions (Teece, 2007, 2012; Pentland, Feldman, Becker & Liu, 2012; Felin, Foss, Heimeriks & Madsen, 2012) that enabled early international market entry. As noted earlier, the literature on early entry into international markets assigns a prominent role to the firm’s entrepreneurial founders (McDougall, Oviatt & Shrader, 2003; Oviatt & McDougall, 2005) but primarily focuses on the ‘founding coalition’ (McDougall, Oviatt & Sharader, 2003; Sharma & Blostermo, 2003). In a departure, our findings provide new perspectives on founding team heterogeneity in setting pre-conditions for early international market entry. As our findings demonstrate, the principal founder of our B-to-B entrepreneurial firms was instrumental in establishing the new firm, its operational capability building, visualizing a promising market opportunity, building a team with complementary operational capabilities, and then transforming and deploying operational capabilities as demanded by the market opportunity. Of these activities, a critical stage that sets the direction and viability of the new firm was the dynamic capability building activity that was led by the principal founder.

The principal founder was confident in the viability of the technology they had, and was thus willing to take the risks needed to make the technology marketable. The principal founder displayed resilience when the new product development process was taking longer and becoming more problematic than was hoped, often resulting in some members leaving the team. These findings extend the limited research on the role that individual founders play. Previously, it has been observed that the

principal founders' access to resources, diverse information through networked contacts, and considerable management know-how are more likely to propel the firm to enter international markets (Westhead, Wright & Ucbasaran, 2001). Nevertheless, little has been known of the processes through which these attributes are externalized into the firm. However, as our findings importantly suggest, the principal founder can sometimes be instrumental in entrenching rigidity-effects (Leonard-Barton, 1992), when knowledge development and transformation activities are needed.

Finally, our findings reveal that the majority of our sampled firms did not clearly perceive the nature of the final product they would be developing and the final market segment that would ultimately constitute their target market. The founders were self-assured that they possessed the know-how to develop a knowledge-intensive, cutting-edge product that they were confident of marketing, maybe even to a market that did not yet exist. This pattern of creating and exploiting entrepreneurial opportunity is consistent with the recent effectuation approach that seeks to understand decision making under uncertainty (Sarasvathy, 2001; Read et al., 2009), which has also been incorporated as a moderator by Gabrielsson and Gabrielsson (2013) in their application.

The B-to-B marketing literature has called for efforts to build B-to-B marketing theory (Hadjikhani & LaPlaca, 2013) as the literature highlights the inadequacy of existing approaches based on economic exchange theories. The need to adopt behavioral approaches has been emphasized (Alderson, 1965; Hadjikhani & LaPlaca, 2013). The dynamic capabilities framework adopted in our research contributes to this effort by revealing how founders of B-to-B born global firms build the preconditions for successful entry into highly competitive international markets.

*Managerial implications*            There are a number of implications for managerial practice. Our method of analyzing successful early entry into international markets suggests a feasible path for small, entrepreneurial B-to-B practitioners aspiring to such entry. At the core of this path is the development, transformation and deployment of new knowledge that enables the firm to develop cutting-edge products and the necessary accompanying marketing innovations. Our evidence suggests



that small start-up firms develop these knowledge-based operational capabilities very early in the careers of founders and that this knowledge becomes congenital knowledge of the nascent firm.

Whilst the founder's past experience will be helpful, it is but one element. A deliberate attempt must be made to develop knowledge-based operational capabilities that bring specialised knowledge to the firm's activities such as product development and international marketing. As our findings reveal, these capabilities were purposefully built by founders in their prior employment. A milestone in this process is acquiring dynamic capabilities that bring the capacity of the firm to change its new knowledge to address a potential market opportunity. This capacity result from the founders purposefully engaging in the processes of *externalization and sense-making* and *synergistic mutation and aggregation* to involve these capabilities within the firm. Dynamic capabilities enable the B-to-B entrepreneurial firms to transform the knowledge resources brought to the firm by founders to create a new set of capabilities. As our findings reveal, by managing these capabilities, the different phases in the internationalization process eventuate. In particular, the market learning and marketing capabilities support the firm to pursue a variety of entrepreneurial strategies that enable it to reach mainstream customer segments effectively. Our findings also provide new perspectives about founding dynamics within the firm that has an entrepreneurial founder. However, the principal founder's domination of the nascent firm can also lead to rigidities and commitment to particular activities and intentions that sometimes hinder transformative processes and international market entry, and thus possibly leads to venture failure.

We acknowledge there are limitations in this research. First, our study has been carried out within a single, developed economy. This limits generalization of the findings. However, our firms were purposively sampled to theorize the role that individual actors play in developing knowledge configurations for forming and deploying capabilities that lead to early international market entry in born global B-to-B firms. 'Second, our key informants were founders of the sampled firms. As the interviews were conducted many years after the firm was founded, such reporting may suffer from memory lapses and post-hoc

rationalizations. However, we took several steps to improve reliability of retrospective reporting suggested by Miller, Cardinal and Glick (1997). First, we used multiple informants such as other members of the founding team, current managers and archival/published records. Second, in our interviews, we consistently asked informants to report key events that took place in the pre-formation and pre-internationalization phase of the start-up firm. As our findings reveal all informants were consistent in reporting such phases and the knowledge routine development activities took place in such phases. Third, we assured confidentiality to motivate informants to provide a rich and true account of events.'

#### *Future research directions*

A possible future research direction will be to undertake cross-national case studies to validate our findings. Such research could be designed to investigate the phases of early internationalization and whether the country context results in contracting or expanding the phases. Second, our sample includes only B-to-B firms that produce high-tech, tangible goods. As knowledge management capabilities are present in service firms, validating the results in service-oriented firms with intangible goods or with firms focused on consumer markets might prove valuable. Similarly, in low-tech organizations, future research would benefit from examining these knowledge management capabilities and processes. Finally, as these firms grow from born-global to mature firms, future research could investigate whether they can sustain multiple markets by clinging to the same assortment of capabilities.

## **6. Conclusion**

This paper addresses the need to investigate how entrepreneurial founders of born global B-to-B firms acquire, transform and deploy new knowledge for early internationalization. Whilst the presence of a set of dynamic capabilities is suggested as a prerequisite, past research designs that were exclusively conceptual and cross-sectional have precluded an in-depth examination of how new knowledge

configurations are developed and deployed for early internationalization. Our chosen context of B-to-B firms provided a theoretically fertile context for this purpose. We report a set of transitional phases on how knowledge is acquired and transformed into capabilities for deployment to support global marketing for new B-to-B firms to enter international markets. We concur with those who advocate investigating B-to-B global marketing, providing a focus on B-to-B born global internationalization, and elucidating the role that individuals play in firms' strategic choices and in knowledge development and deployment to achieve strategic intent.

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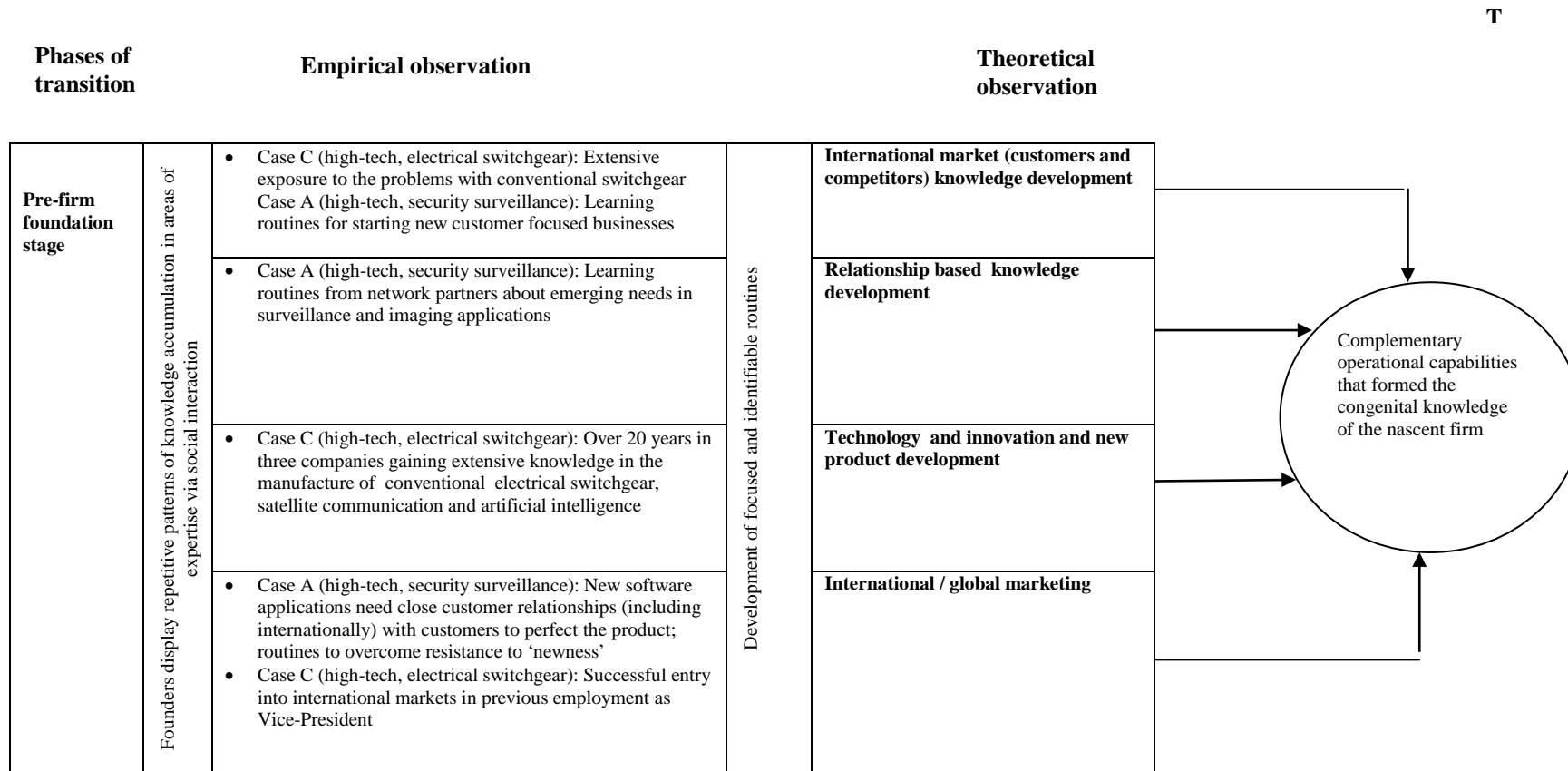
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**Table 1: Characteristics of the Sample**

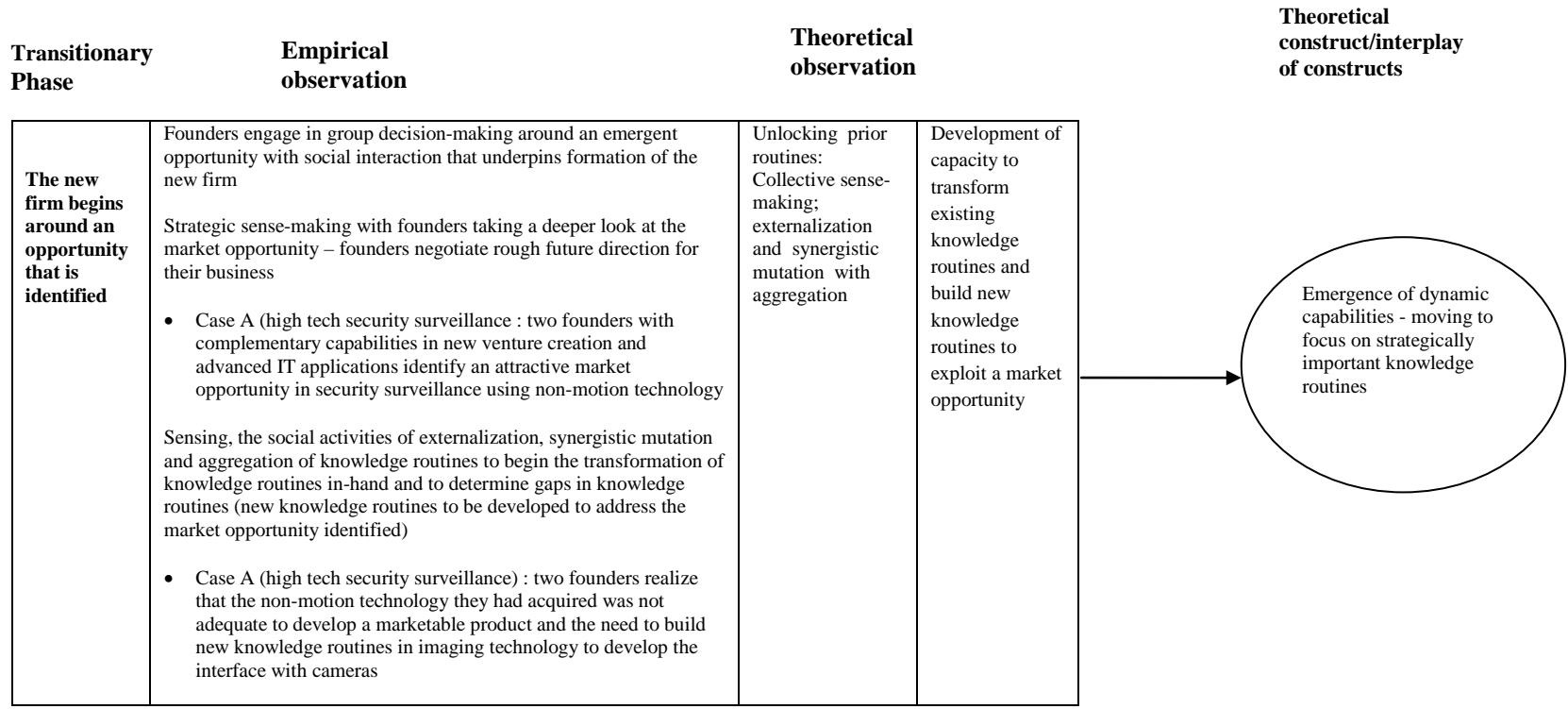
Case	Interviews	Nature of business	Export Intensity	Year of inception	Year first exported	Global value chain	Markets served (in order of entry)
A	Founders; Senior founder four times and co-founder once on revisit to this market; Over two years	Security surveillance B2B	60%	2001	2004	Yes – key IP sourced from USA	USA, Australia, Europe
B	Founders; Both founders; four times; website, media files; Over two years	Laser gun facilitated role playing game /online business B2B /B2C	70%	1991	1994	Yes – key components sourced in China	USA
C	Principal Founder five times; Factory visit twice; co-founders once each; website and DVD material; continuous communication and PR events attendance; Over five years	Electrical switchgear B2B	60%	2002	2005	No	70 countries including USA, UK, Latin America
D	Founder four times and Inventor twice; Members of product development team separately once each; archival data. Over two years	Tissue culture B2B	80%	1994	1995	Yes – production in diverse global locations	USA, China, Canada and India
E	Founder and founding team members; four times each, archival data. Over two years	Biometric identification B2B	70%	1997	2000	No	Singapore, UK and Japan
F	Founder twice and founder and members for original research team in the Cooperative Research Centre. Over two years	Biodegradable plastics B2B	80%	2001	2004	No	Germany
G	Founder and CFO, Founder twice. Archival data, extensive media files; Over two years	Transdermal delivery of medicine B2B	90%	1998	2000	No	USA,

**Figure 1a: Phase 1: Opportunity identification: Firm knowledge transformation to develop emerging dynamic capabilities**

**Operational capabilities endowed to the nascent firm**

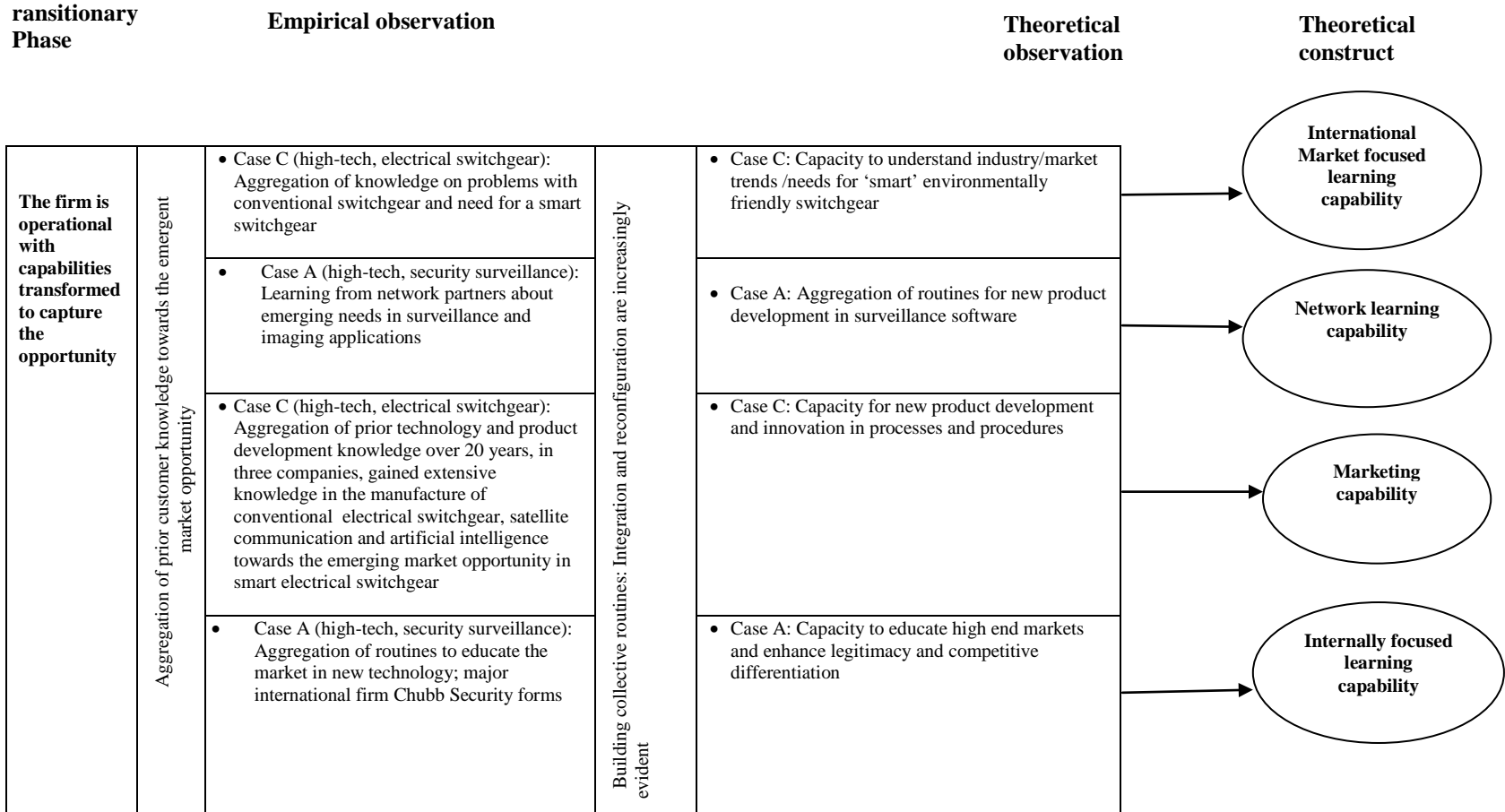


**(a) Emergence of dynamic capabilities**

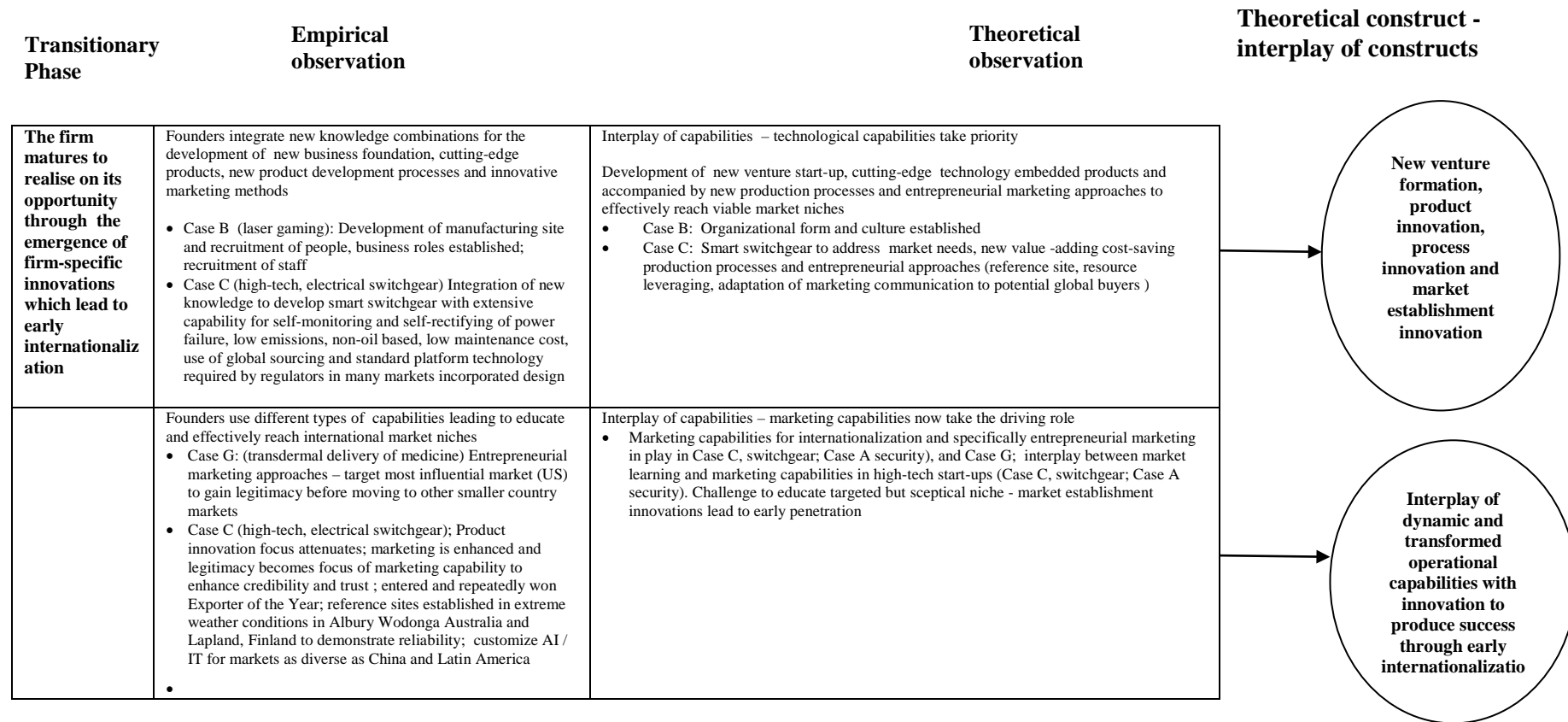




**Figure 1b: Opportunity capture: Emergence of transformed operational capabilities through knowledge transformation**



**Figure 1c: Opportunity realization: Product and marketing innovation through the interplay of capabilities leading to early internationalization**



**Figure 2: A critical incidents chart of the knowledge transformation and deployment in early internationalizing B-to-B firms**

