

What entrepreneurs do? Entrepreneurial action guided by entrepreneurial opportunities and entrepreneurial learning in early internationalising firms.

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What entrepreneurs do?

Entrepreneurial action guided by entrepreneurial opportunities and entrepreneurial learning in early internationalising firms.

Abstract

Purpose: There is a growing interest in exploring the interface between international marketing and entrepreneurial opportunities. This paper contributes by defining and elucidating entrepreneurial action in early internationalising software firms and the corresponding emergent international marketing activities. Entrepreneurial action in early internationalising software firms is explored through the operationalisation of a reconceptualised entrepreneurial opportunity construct and the associated entrepreneurial learning processes.

Design: The paper adopts an inductive approach, which traces the evolution of five early internationalising propriety software South African firms; from the new venture idea to the establishment of the international entrepreneurial opportunity.

Findings: The findings provide support for entrepreneurial action guided by: prior industry experience, entrepreneurial alertness, opportunity confidence and two levels of entrepreneurial learning; experiential and double-loop learning. Learning by doing allows for the continuous evaluation of the new venture idea leading to the international entrepreneurial opportunity. Market responsiveness and continuous product development resulting in the emergence of the firms’ inward international marketing activities constitute the key outcomes of entrepreneurial action.

Research limitations: The study is limited to a specific technology context, that is young software firms whose inward directed internationalisation activities coalesce around the development of their proprietary software technology.

Originality: Based on an original dataset of early internationalising software firms from South Africa, this paper inductively operationalises and conceptualises entrepreneurial action as the combined interaction of four key constructs: contingent effects, attitudes to opportunities, learning by doing and entrepreneurial activities leading to the firms’ inward international marketing activities and a diversified international client and end-user base.

Keywords: international entrepreneurial opportunities, entrepreneurial action, learning by doing, entrepreneurial learning, contingent effects, inward international marketing activities.

Introduction

There is an emerging interest in exploring the interface between international entrepreneurship and international marketing by tracing the evolution of international entrepreneurial opportunities (Chandra *et al.*, 2012; Chetty *et al.*, 2015; Yang and Gabrielsson, 2018). The opportunity construct has indeed been positioned as the cornerstone for defining entrepreneurship and elucidating entrepreneurial action. How entrepreneurs 'act' has been largely captured by the nature of the opportunity construct in so far as the opportunity can be ontologically viewed as being objective and or subjective (Alvarez and Barney, 2007; 2010; Alvarez *et al.*, 2013; Chetty *et al.*, 2015) lending itself to being discovered in the former or created in the later. It is through entrepreneurial action, that entrepreneurial opportunities and their associated early international marketing activities are realised.

Early internationalisation activities call for research approaches that recognise the origin of the firm by adopting a holistic approach to new venture firm internationalisation (Jones, 1999; Chandra *et al.*, 2009; Kriz and Welch, 2018). Opportunity based approaches, which incorporate and extend beyond official firm registration dates, are appropriate theoretical lens for exploring early internationalising firms. Where opportunity based approaches have been adopted in international marketing, the focus has largely been on outward directed foreign market entry opportunities (Galkina and Chetty, 2015; Yang and Gabrielsson, 2017; Chetty *et al.*, 2018; Miocevic and Morgan, 2018). By prioritising the entrepreneurial opportunities associated with the emergence of the early internationalising firm, we engage with the ongoing attempts to deconstruct the entrepreneurial opportunity construct (Klein, 2008; Davidsson, 2015; Ramoglou and Tsang, 2016; Davidsson, 2017; Kitching and Rouse, 2017). The individual level entrepreneur-opportunity nexus (Garud *et al.*, 2014), in turn calls for the inclusion of complementary theorisation, specifically the types of entrepreneurial learning processes defining the emergence of entrepreneurial opportunities (Jones and Casulli, 2014; Bunz *et al.*, 2017). We thus extend opportunity theorisation at the interface of international entrepreneurship and international marketing (Yang and Gabrielsson, 2018).

This paper addresses the research question on 'how entrepreneurial opportunities and their underlying learning processes inform entrepreneurial action in early internationalising software firms'. We investigate how entrepreneurial opportunities, through their broader set of constituent, operationalisable constructs (Tang *et al.*, 2012; Davidsson, 2015; Ramoglou and Tsang, 2016) together with their associated learning processes (individual level experiential and double-loop learning), inform entrepreneurial action in early internationalising firms. Our findings accentuate the international marketing activities undertaken by early internationalising firms. Entrepreneurial action, as conceptualised in this paper defines the formation of the firms earliest cross border links (Jones, 1999), that is primarily inward international marketing activities underpinned by interactions with a diversified client and end-user base.

The paper starts by outlining the key debates on entrepreneurial opportunities and entrepreneurial action within the context of early internationalisation activities. We then explore the role of knowledge accumulation and learning processes on entrepreneurial action. This is followed by an outline of the research methodology drawing on a sample of five purposively selected early internationalising software firms. After presenting the main findings of the research, we conclude by proposing an empirically driven integrated framework for entrepreneurial action and the associated international marketing activities. This framework focuses on the transitions and interactions between and within the four constructs of entrepreneurial action: contingent effects; attitudes to opportunities; learning by doing and entrepreneurial activities.

Theory Review

International entrepreneurial opportunities and entrepreneurial action

Discovery and creative approaches (Alvarez and Barney, 2007; Wood and McKinley, 2010; Eckhardt and Shane, 2013) lead the debates on how entrepreneurial opportunities come into existence in the entrepreneurship literature. Efforts to elucidate entrepreneurial action either align entrepreneurial opportunity approaches with their proposed entrepreneurial actions (Alvarez and Barney, 2007; Wood and McKinley, 2010; Maine *et al.*, 2015) or seek new theoretical hoists out of the discovery/creative dichotomy. Creative opportunities exist as abstract ideas tied to the entrepreneurs beliefs around a 'desirable and feasible future situation' (Wood and McKinley, 2010). Discovery opportunities, on the other hand, exist fully formed, akin to mountains or scattered dollar bill notes waiting to be discovered by alert entrepreneurs (Alvarez and Barney, 2007; 2010), with the necessary industry specific product and or market knowledge (Shane and Venkataraman, 2000).

When considering studies exploring international marketing through an entrepreneurial opportunity lens (Hansen and Eggers, 2010), the application of the discovery and creative approaches is in its nascent stages (Yang and Gabrielsson, 2018). Chetty *et al.* (2018) provide one of the earliest studies in international marketing to adopt both discovery and creative approaches. Discovery and creative approaches have been presented as ontologically distinct, polarised perspectives (Alvarez *et al.*, 2013), whereas Chetty *et al.* (2018) cede to the duality of discovery and creative approaches. The authors provide a novel hierarchical conceptualisation of the progression of international opportunities, linking higher order general country level foreign market opportunities to their specific lower order opportunities, for example the contract defining how the general opportunity is realised. The duality perspective (juxtaposing creative and discovery approaches) enables the concomitant deployment of both effectual and causally related entrepreneurial actions (Chetty *et al.*, 2018). Entrepreneurial action is thus guided by both, goal oriented proactive actions and the use of trial and error heuristics.

However within these studies the focus on market oriented opportunities aligned with the firm's cross border activities has been retained (Reuber *et al.*, 2018). There have been calls to consider the diversity of international marketing activities (Reuber *et al.*, 2017), including the consideration of inward international marketing activities (as for instance in; Welch and Luostarinen, 1993; Korhonen *et al.*, 1996) as crucial activities enacted by entrepreneurs in new or young firms (Jones, 1999).

Inward internationalisation activities have been defined according to the direction of internationalisation (that is the direction in which the border is crossed) and their association with alternative internationalisation activities and value chain activities (Jones, 1999). Firms engage in inward internationalisation by importing goods, licencing *in* technology from an international partner and conducting consultancy activities for international clients, from their domestic market (Welch and Luostarinen, 1993; Jones, 1999; Fletcher, 2001). The seminal international marketing literature has recognised the importance of inward internationalisation in the early stages of the firms development, specifically as a precursor to outward directed internationalisation activities (such as, international countertrade prior to outward exporting) (Welch and Luostarinen, 1993; Korhonen *et al.*, 1996). Inward internationalisation activities thus provide routes to internationalisation that occur in conjunction with or as an alternative to outward internationalisation activities (Fletcher, 2001). Despite the early recognition, research disseminating the range and role of inward internationalisation activities and their links with the entrepreneurial opportunity (both in terms of the initial opportunity and subsequent emerging international opportunities) has remained limited (Reuber *et al.*, 2017; 2018).

Regarding the opportunity itself, in what we view as a further attempt to minimise the gap between entrepreneurial opportunity theorisation and entrepreneurial action (i.e. exploring what entrepreneurs do), Davidsson (2015) reconceptualises entrepreneurial opportunities, into three constructs; the new venture idea, external enablers and the entrepreneur's opportunity confidence. In recognition of the attempts to disaggregate the antecedents of entrepreneurial opportunities, Miocevic and Morgan (2018) refer to market sensing operational capabilities as the construct through which exporting SMEs identify a wider repertoire of international opportunities. Davidsson (2015; 2017) however provides an avenue for distinguishing the formative "pre-action aspects of" entrepreneurial opportunities (p.679). What is novel here, and is yet to gain traction at the international entrepreneurship/international marketing interface is the initial 'pre-entrepreneurial action' disaggregation of the entrepreneurial opportunity construct; allowing for the separation of the notion of favourability from the opportunity construct and providing an avenue through which the evolution of the contents of an entrepreneurial opportunity (products, service, markets) can be traced. By definition, international opportunities aligned to the firm's foreign market entry activities are viewed as being favourable despite literature arguing for a non-linear approach to internationalisation, which recognises de-internationalisation activities. (Tang *et al.*, 2012).

The new venture idea – which includes the elementary contents of the new venture, for example potential product/services and access to relevant customers (Davidsson, 2015; 2017) – has been used to operationalise the entrepreneurial opportunity construct (Kitching and Rouse, 2017; Vogel, 2017). A comprehensive conceptualisation of entrepreneurial action is however needed to allow for the alignment of the new venture idea with the firm's early internationalisation activities (Chandra *et al.*, 2009; Sleuwaegen and Onkelinx, 2014; Ibeh *et al.*, 2019). The notion of favourability is captured through the opportunity confidence (OC) concept that represents the results of the entrepreneur's evaluation of the new venture idea or stimulus (allowing for the emergence of the new venture idea). Moreover, we also take into cognisance the central functional construct, entrepreneurial alertness (A), which has been aligned to the nature (discovery) of the entrepreneurial opportunity in exploring entrepreneurial action (Ardichvili *et al.*, 2003; Klein, 2008; Tang *et al.*, 2012). Entrepreneurial alertness is the ability of the entrepreneur to identify relevant opportunities that others do not recognise (Kirzner, 1997).

Entrepreneurial learning

The discovery and creation of international entrepreneurial opportunities relies on various forms of knowledge accumulated by entrepreneurs (Fletcher *et al.*, 2013). Entrepreneurs, as individual agents, transform knowledge, accumulated through their prior experiences - into the discovery and creation of opportunities in different markets (Zhang *et al.*, 2006; Bunz *et al.*, 2017). Entrepreneurial action, as the enactment of international entrepreneurial opportunities, is thus intrinsically linked to knowledge and therefore, *learning* processes. *Learning by doing* thus emerges as a key concept in understanding the entrepreneur's recognition and exploitation of international opportunities (Chandra *et al.*, 2009; Voudouris *et al.*, 2011; De Clercq and Zhou, 2014; Pellegrino and McNaughton, 2017). *Learning by doing* extends beyond the sole consideration of knowledge as a pool of resources. Instead, it refers to the behavioural and cognitive processes of knowledge acquisition, assimilation and organisation. In that sense, entrepreneurial learning includes; autodidactic activities, leveraging of prior experiences, and experiential learning processes (Corbett, 2005; Holcomb *et al.*, 2009), subsequently used in the internationalisation process (Jones and Casulli, 2014; Bunz *et al.*, 2017). Iterative and continuous, learning integrates prior knowledge with new knowledge acquisition (e.g. through interaction with customers), used further by entrepreneurs for specific entrepreneurial activities associated with the emergence of international opportunities and new market entry (Chandra *et al.*, 2009; Voudouris *et al.*, 2011).

This paper separates experiential and reflective learning processes and their impact on entrepreneurial action by distinguishing between different *levels* (Cope, 2005) or *types* of entrepreneurial learning (Corbett, 2005) occurring at the individual level of the entrepreneur. Entrepreneurial learning typologies adopted from organisational learning (Argyris and Schön, 1978; Miner and Mezias, 1996;

Miner *et al.*, 2001) and education (Kolb, 2014), are recognised in early internationalisation research as being central in differentiating between experiential and more reflective forms of learning (Jones and Casulli, 2014). Entrepreneurial actions derived from experiential learning and more reflective types of learning lead to different strategic outcomes. The former allowing adaptation whilst the latter is followed by major strategic shifts.

The first, lower level, is adaptive/instrumental (Cope and Watts, 2000), and relates to the know-how and the assimilation of factual information¹ emerging from an individual's experiences, also widely discussed as *experiential learning* (Corbett, 2005; Politis, 2005; Zhang *et al.*, 2006; Fletcher *et al.*, 2013; Bunz *et al.*, 2017). Experiential learning (EL) extends beyond the assimilation of information, as knowledge once acquired, assimilated and organised can be transferred to new situations and markets by the individual entrepreneur (Corbett, 2005; Fletcher *et al.*, 2013; Chetty *et al.*, 2018). Within experiential learning, individual entrepreneurs undergo trial and error learning drawing on competencies embedded within their prior experiences (Jones and Casulli, 2014; Bunz *et al.*, 2017). Entrepreneurs often rely on experiential learning to develop export capabilities and engage in the internationalisation process (Johanson and Vahlne, 2009; Miocevic and Morgan, 2018; Tiwari and Korneliussen, 2018). International marketing behaviour thus depends on how entrepreneurs accumulate and organise knowledge (Styles and Seymour Richard, 2006; Yang and Gabrielsson, 2018).

The second, higher level, *double-loop* learning (DL), is the transformation of knowledge and experience (*transformative* behaviour) following self-reflection (cognitive) processes (Argyris and Schön, 1978)². Double-loop learning (in contrast to experiential learning) implies the modification of a paradigm, essentially a cultural shift following a phase of self-reflection by the entrepreneur (Cope and Watts, 2000; Jones and Casulli, 2014), often leading to radical and potentially incremental (Pellegrino and McNaughton, 2017) changes in strategy and action. With double-loop learning, entrepreneurs do not only learn from previous experiences, as is the case with experiential learning, but also *learn how to learn* (Cope and Watts, 2000) through analogical reasoning (Cope and Watts, 2000; Jones and Casulli, 2014), a reflective mechanism implying a strong cognitive shift for the entrepreneur.

We are thus able to make a distinction between two types of learning: experiential (EL) and double-loop learning (DL)³. These two types of entrepreneurial learning together constitute this paper's

¹ Cope and Watts (2000) actually differentiate between three levels. However, levels 1 (assimilation of factual information) and 2 (transfer to other situations) can be merged into a single classification under experiential learning (EL).

² Given the importance of self-reflective practices in explaining changes in entrepreneurial perception and action, the main differentiating point between the types of learning is the presence or the absence of the reflective nature of the learning mechanism that will consequently lead (or not) to entrepreneurial action.

³ Miner and Mezias' (1996) notions of incremental or radical learning are not crucial to this distinction.

notion of *learning by doing*, incorporated in the operationalisation and conceptualisation of entrepreneurial action in the context of early internationalisation.

Methodology

A purposive sample of five software firms from South Africa was selected from an original pool of 35 technology-based firms (the original sample included biotechnology and consultancy firms) to address our research question on “how entrepreneurial opportunities and their underlying learning processes inform entrepreneurial action in early internationalising software firms”. High tech infant firms (Jones, 1999; Dimov, 2010), developing their initial proprietary technology product/platform⁴ allow for the exploration of international entrepreneurial opportunities in web-based environments, an area which has been recognised as a potential avenue for further research in international entrepreneurship and international marketing (Hallbäck and Gabrielsson, 2013; Kriz and Welch, 2018). We adopt an embedded qualitative case study approach (Yin, 2013; Hewardine *et al.*, 2014; Maine *et al.*, 2015; Ji *et al.*, 2019) to unpack the complexity of the international entrepreneurial opportunity and entrepreneurial learning processes underlying entrepreneurial action (Welch *et al.*, 2011; Klag and Langley, 2013).

The selected firms were all early internationalising software firms having started their internationalisation activities within 3 years from their inception. The software firms were aged between 3 to 7 years at the time of interviewing and could thus be categorised as new or young firms (Jones, 1999). Each of the firms had retained their original founding team allowing for links to be made between the new venture idea, entrepreneurial action and the subsequent early internationalisation activities. Furthermore, through the reflective accounts of the entrepreneur's experience during the interviews (Klag and Langley, 2013; Garud *et al.*, 2014), we could capture learning beyond experiential learning (Pellegrino and McNaughton, 2017) and uncover how entrepreneurs adapt and change their international marketing strategies; connecting customers, technologies and market conditions (Styles and Seymour Richard, 2006; Yang and Gabrielsson, 2018).

Each interview was conducted over a duration of 90 to 120 minutes, anonymised and fully transcribed prior to analysis. The interview schedule adopted a historical narrative approach, capturing “the language of the natives” (Wood, 2017) by uncovering the individual entrepreneur's prior experiences; the evolution of the ideas leading to the creation of new products and services; and the firm's

⁴ This means that the firm owns and develops their technology in-house and engages in different internationalisation strategies (such as managed services). In addition, the South African context is more comparable to Central and Eastern European technology contexts, where the skills are high, domestic conditions are favourable but the labour costs are still low. Apart from a deficit of legitimacy in the USA, firms from our sample are perceived as skilful in international markets.

subsequent cross border activities. The following questions were used for each section followed by relevant probes. The questions were designed to capture the emergence of the software firm from the founder's earliest recollection of the new venture idea and its future contents.

- Could you give a description of your background with regards to your educational background, previous work experience, the countries, which you have worked in, the companies, which you have worked for, and your role within these organisations?
- Could you describe your product/service development process to date, starting from the idea generation stage - that is how you identified the idea, moving through to how you have developed the products and services, which make up the firms current offering?
- Could you describe your internationalisation process to date? What are the firm's future growth strategy/strategies?

Additional secondary data was collected from business plans, company brochures, Curriculum Vitae (provided by the entrepreneurs), online secondary data from South African media publications (announcing the firm's major achievements) and online presentations delivered by the founders. Subsequently, two analytical methods were used to explore the data in a structured manner to ensure reliability and validity of the research approach (Sinkovics *et al.*, 2008), before theorisation (Eisenhardt and Graebner, 2007; Welch *et al.*, 2011). First, we used within-case analysis to trace the new venture idea defining the entrepreneur's actions and learning processes. Second, we conducted cross-case analysis to compare and contrast the central themes emerging from each case. As part of an iterative process of data analysis (Eisenhardt and Graebner, 2007) and methodological triangulation (Yin, 2013), data was coded independently by the two authors thus improving reliability (Miles and Huberman, 1994; Klag and Langley, 2013). Both authors subsequently compared their codes allowing additional themes to emerge. Four themes emerged from this independent coding process. These were further conceptualised as constructs of entrepreneurial action; contingent effects, attitudes to opportunities, learning by doing (experiential learning and double-loop learning) and entrepreneurial activities. More importantly, we focused on the transitions between the constructs⁵, which we then integrated into a theoretical framework. Finally, our findings on entrepreneurial action crystallise the firm's early international marketing strategies.

A systematic description of the firms and founder characteristics is shown in Table 1.

[Insert Table 1 here]

⁵ In the framework (Figure 1), we used verbs to highlight and characterise the transitions between the constructs.

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Analytical presentation of the findings

Based on the data analysis, we provide an analytical description of the findings. Four constructs; contingent effects, entrepreneurial attitudes, learning by doing and entrepreneurial activities emerge from the data analysis. These constructs are illustrated by relevant power quotes presented in Table 2 and are used to structure this section.

[Insert Table 2 here]

Contingent Effects

The second row in Table 2 outlines the entrepreneur specific circumstances (contingent effects) defining the context in which the new venture idea is embedded at the individual level (Garud *et al.*, 2014). The founders’ experiences are embedded in South African international and domestic market firms operating at the forefront of emerging ecommerce, software development and online marketing trends. In virtually all the cases (except Firms S2), the founders have held senior level organisational positions. Contingent effects include prior industry experiences (PIE); primarily the combination of technical know-how and the related client and end-user experiences of the founders. For example Firm S3’s founder has held a range of senior marketing positions and worked for the subsidiaries of both local and South African MNEs. Prior to establishing Firm S3, the founder was responsible for setting up all the SMS and mobile divisions for a South African headquartered international telecommunications company. Likewise, having worked within a range of positions in ecommerce, including vice-president of international business development and technology within an online casino group, Firm S1’s founder’s experience in technology (includes managing technology teams; web-developers and application developers) and the related markets (sales, pricing structures, online promotions and managing clients) provided him with an understanding of the online gaming industry. Firm S4’s, cofounder clearly highlights the importance of the compliment of his ICT skills and his co founder’s client network within the security industry. Both Prior Industry Experiences (S1, S3, S4, S5) and Personal End-user (S2) experiences in industries related to the new venture idea shape the knowledge structure of the entrepreneurs and provide insight into the potential future contents of the new venture idea. Personal experiences are potentially aligned to Chandra and Coviello’s (2010) recognition of customers as international entrepreneurs. The founders’ prior industry and personal experiences communicate the early formulation of the international marketing components of the emerging new venture idea.

Entrepreneurial attitudes

The fourth row in Table 2 focuses on the attitudes of the entrepreneurs towards new venture ideas and their level of (cognitive) alertness (A), as evidenced by the actions (behavioural), taken by the entrepreneur to crystallise their new venture ideas (Covin and Lumpkin, 2011). Entrepreneurs allude

to the availability of new venture ideas within their immediate context; international and or domestic market environment (S1, S3, S4, and S5) or end-user environment (S2). New venture ideas emerge through the entrepreneur's heightened awareness of the potential to provide web-based software solutions to an initial client and end-user base irrespective of their geographical location, emerging from⁶:

- changes in legislation encountered within the international online gaming industry (S1)
- perceived and actual gaps for online private sector security applications for domestic market private clients. (S4)
- international client request for the delivery of Short Message Service (SMS) campaigns (S3).
- perceived need for cheaper mobile phone cellular communication costs (S2)
- perceived need for an end-to-end supply chain relationship management application (S5)

Entrepreneurial alertness captures the early onset of the formation of the firms potential (S1, S4, S5) and actual client (S3) and or end-user customer base (S2). The sixth row in Table 2, considers the entrepreneur's opportunity confidence (OC), that is the founders evaluation of the new venture idea or the stimulus leading to the new venture idea (Davidsson, 2015). The ability to ascertain the 'attractiveness' of new venture ideas is highlighted by S1's CEO who initiates both the proposal and the new division, enabling him to explore the viability of the potential new venture idea whilst employed in the online gaming industry (see Table 2 row 4). Firm S1's founder had thus evaluated the new venture idea and the product-market fit based on online end-user engagement for his new venture idea. This prior evaluation reinforced his belief in viability of the opportunity and his commitment to the new venture idea leading to opportunity confidence being high from the onset.

Interestingly, for Firm S4 and S5's founders, opportunity confidence has increased through interaction with their initial (Firm S4) and potential (Firm S5) client bases. This interaction has led to the self-reflection evidenced in double loop learning (DL), where we observed a shift in their mind-set leading to an increased level of opportunity confidence. For S5's CEO, the shift from moderate to high opportunity confidence has occurred as a result of the opening up of an with an opportunity with an existing client to negotiate an agreement, which would position his firm as the key technology partner for the international client, a global food service group. Through this agreement, Firm S5 has co-ownership of the source code, which will now form the kernel of an end-to-end supply chain management system. Opportunity confidence is dynamic, it varies with time (Davidsson, 2015), the literature is yet to take into consideration the role of learning by doing even though it is inferred.

⁶ See also Table 1, for a more detailed description of each case.

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Learning by doing

Rows, seven, nine, ten and twelve in Table 2, highlight the two dimensions of 'learning by doing' that emerged from the data; (EL) experiential learning (the ability to transfer knowledge from one situation to another one), and (DL) double-loop reflective learning (Cope, 2005). Experiential learning is recognised through the entrepreneur's ability to transfer *both* technical and client specific knowledge from their prior experiences (S1, S3, S4 and S5), for example, by increasing existing client engagement and making incremental changes to their software applications. Double-loop reflective learning relates to the change in perception and mind-set of the entrepreneur leading to the revision of their new venture idea, by for example, educating their market (S4), adopting strategies which enable the firm to attain a technological lead over their competitors (S1 and S3), simplifying the initial new venture idea (S5) and incorporating variations in client technology infrastructure (S2). Double-loop learning thus translates into major shifts in strategy, action and behaviour

Through their initial unsuccessful attempts to introduce their security management software to their first customer segment, private sector security clients, S4's founders realised the need to step back, educate and incorporate their client's requirements. The inclusion of their clients' specifications led to the development of their first software application whose appeal extended beyond their initial market segment to South African headquartered MNEs operating in the mining sector. The firm has been pulled into inward internationalisation activities through their MNE clients' requirements to have their web-based security software deployed within their African subsidiaries. In line with S4, S2's CEO describes the process of rebranding and licensing out their software solution to their first international client as a steep learning curve which took longer than expected due to the need to understand their international clients business model, infrastructure, and how they planned to distribute the solution to their end-users.

There is agreement across the entrepreneurs that transitioning from a global corporate environment to a start-up environment calls for a shift in mind-set and a corresponding change in action and behaviour. This is emphasised in S3's CEO's reflections on the decision making processes within a corporate versus a new venture environment, where the former curtails entrepreneurial action through protracted decision-making processes. The CEO explains how he has organised his firm to enable decisions to be made swiftly, allowing his team to take what he refers to as 'aggressive' and 'bold wide ranging' acts. Double-loop reflective learning has in turn enabled a shift in entrepreneurs' mind-sets (S1 and S3) leading to the revision in entrepreneurial activities outlined below.

Entrepreneurial Activities

Key entrepreneurial activities (shown in row thirteen, table 2) are defined by market responsiveness (MR) and continuous product development (CPD). Market responsiveness (MR) highlights the

entrepreneur(s) ability to respond to market changes. Continuous product development infers the ongoing software upgrade and increasing addition of software modules. Such activity occurs in response to market changes (client, competitor and end-user) and leads to the transition from a single software application to a software platform (offering multiple applications). Entrepreneurial activities in turn elucidate the types of early international marketing activities defining the case software firms.

Entrepreneurial activities lead to an increase in the new venture idea contents and the range of services, which the firm is able to offer its client and their end-users. Through their entrepreneurial activities (see row thirteen Table 2), Firm S3 has extended their offering from an SMS campaign management tool to a partially complete modular web-based platform, which can be customised to deliver the entire mobile marketing strategy of a client in any geographical location where a cellular network can be accessed. The firm is thus able to engage in a range of cross-border activities, which include offering a managed service using their platform for their international clients (inward directed internationalisation activity) and licensing out their modules to international resellers (outward directed internationalisation activities). Firm S1 in turn has transitioned from developing bespoke static gaming sites for their clients to launching an online cross platform game management system (see Table 1). In a bid to develop what S1's CEO describes as the 'big daddy' of the gaming industry, further development activities have made their gaming system ubiquitous increasing both their international client and end-user base. At the time of interviewing Firm S1 had offered white-labelled versions of their online management system to 35 publishers and estimated that they had 40 to 50 million end-users accessing their system. The ability to offer both local and international clients a white labelled version of their online game management system defines SI's inward international marketing activities. Entrepreneurial activities require learning and knowledge accumulation of international market experience, mainly through engagement with international customers and end-users.

The interplay between the entrepreneurs, their client and end-user customer base is crucial here in terms of response and adaptation to new and existing customer segments changing needs through continuous product development. This highlights the importance of entrepreneur-customer' interaction in the pursuit and development of international opportunities (Choi *et al.*, 2019), especially in the context of proprietary software based firms from emerging markets, continuously looking to innovate and develop their proprietary technology in relation to customers' needs and demand (Fischer and Reuber, 2004; Snow *et al.*, 2011; Hewerdine *et al.*, 2014; Miocevic and Morgan, 2018). Furthermore, the entrepreneurial activities extend beyond new product development and lead to significant changes in the marketing mix (Alvarez and Barney, 2007). Market responsiveness is in turn aligned with the entrepreneur's attempts to increase their customer's dependence on their proprietary technology (software product or platform) through continuous product development (Snow *et al.*, 2011), promoting ease of use (S2), accessibility (S1,S4, S5) and superiority (S1,S3) of

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their software and services. These firms seek to attain technological superiority and dominate technology niches through their ability to offer a range of tailored managed services to their international clients, which in turn enable their client to increase the range of services offered to the end-users. These managed services are inward international marketing activities, from which these firms generate revenue from international clients (Welch and Luostarinen, 1993; Jones, 1999; Fletcher, 2001). They are indeed administered through the proprietary technology platform from their home country to an expanding international client and end-user base. Given the importance of interactions with clients and end-users, these inward international marketing activities also perpetuate the self-reinforcing relationship between continuous product development and market responsiveness.

Discussion

Conceptually, we ground our contribution on the combined interaction of the four identified constructs of entrepreneurial action presented above. We consider the enactment of the opportunity (the new venture idea) and the ongoing co-value creation with clients and their respective end-users as part of the framework (Figure 1). Based on our analysis of the data, we focus on the transition phases between the constructs and their analytical links (Jarzabkowski, 2004). Importantly, we integrate the four constructs within the framework as analytically separated constructs. The processes presented are non-linear in chronological terms, they include iterative and recursive mechanisms, characterised by feedback loops both between and within constructs.

We argue in our discussion that what entrepreneurs do, is best explored through an analysis of the specific circumstances and cognitive processes at the individual level (Jones and Casulli, 2014; Reuber *et al.*, 2018) to understand the entrepreneurial pursuit of opportunities among rapidly internationalising new ventures (Yang and Gabrielsson, 2017). As a result we are then able to provide explicit links between entrepreneurial action and international marketing activities.

A framework for entrepreneurial action

[Insert Figure 1 here]

The proposed integrated framework, bridging international marketing and entrepreneurship, is novel in three different ways. It first integrates and articulates the four constructs of entrepreneurial action processually and in relation to the new venture idea leading to the international entrepreneurial opportunity (Chandra *et al.*, 2009; Davidsson, 2015), recognising the importance of each construct and the transitions between them. Second, it explicitly recognises the importance of ongoing product development in relation to markets and customers, and the recursive and reflective nature of these interactions. Finally, it elucidates the relation between the individual level analysis of the opportunity

and entrepreneurial action with international marketing activities (Shepherd, 2015; Yang and Gabrielsson, 2018).

Contingencies provide the lens through which the opportunity is viewed

Contingent factors shape the context in which the opportunity is embedded (Anderson *et al.*, 2010; Garud *et al.*, 2014), providing the knowledge structure through which the entrepreneur assesses the opportunity. We focus here on *internalised* factor (that is prior industry and personal experiences) dynamics. We align with the strand of research in international entrepreneurship that considers the assessment of opportunities at the individual-level of the entrepreneur, and focuses on cognitive mechanisms (Tang *et al.*, 2012; Jones and Casulli, 2014; Bunz *et al.*, 2017; Reuber *et al.*, 2018). Individual entrepreneurs – micro level - operate within and interact with a given set of macro level structures (Chiasson and Saunders, 2005; Sarason *et al.*, 2006; Garud *et al.*, 2014). As *contingencies*, knowledge structures are socially constructed and internalised by the individual entrepreneur, they set the mind-set and cognitive frame for the entrepreneur's learning (Figure 1), subsequently precipitating the recognition, evaluation and re-evaluation of the new venture idea leading to the international entrepreneurial opportunity (Politis, 2005; Voudouris *et al.*, 2011; McCann and Vroom, 2015). In fact, knowledge structures pre-dispose their attitudes towards opportunities (Cope, 2005; Gemmell *et al.*, 2012; Tang *et al.*, 2012; Jones and Casulli, 2014), through a natural progression from prior experiences to the new venture idea and subsequent international entrepreneurial opportunity. Hence, contingent effects include the entrepreneurs prior industry experiences (PIE), which for proprietary software based firms is primarily gained by working in top management and corporate positions within the industry. Entrepreneurs' personal experiences (PE) gained through the use of technology as end-users become especially relevant when prior industry experiences are limited.

Our results show that contingent effects are an integral part of the entrepreneur's narrative and form the genesis of entrepreneurial action. Contingent effects in turn influence the context shaping the entrepreneur's attitudes towards new venture ideas. As displayed in Figure 1, contingencies provide the initial internalised knowledge structures, a lens through which the entrepreneur will perceive and assess new venture ideas leading to international entrepreneurial opportunities but also enable the entrepreneurs to build on, for subsequent learning. Such knowledge structures are developed during prior interaction with industry clients, and users and the corresponding technological fit. Prior experiences then influence the entrepreneur's attitudes towards opportunities, that is their entrepreneurial alertness and opportunity confidence.

Attitudes to opportunity enable learning

Entrepreneurial attitudes to opportunities refer to the entrepreneurs' ability to recognise and exploit international opportunities (entrepreneurial alertness) and gauge the extent to which the opportunities

are likely to lead to a favourable or negative outcome (opportunity confidence). Whilst entrepreneurial alertness has been traditionally applied within the opportunity debates (Ardichvili *et al.*, 2003; Tang *et al.*, 2012) particularly in relation to entrepreneur's ability to discover opportunities (Chetty *et al.*, 2018), further attention should be given to the opportunity confidence construct introduced by Davidsson (2015). Opportunity confidence relates to the individual's (internal) subjective, dynamic and idiosyncratic interpretation of new venture ideas and associated external events (Dimov, 2010; Davidsson, 2015). High opportunity confidence levels are associated with the degree to which entrepreneurs and entrepreneurial team's prior industry experience aligns to the global industry in which they recognise their new venture ideas. Our results recognise the importance of entrepreneur's prior corporate entrepreneurial activities in elevating their level of opportunity confidence in the new venture idea, explaining why they persist in engaging and pursuing the opportunity. The entrepreneur's attitude towards opportunities is nonetheless an ongoing process, through which they interact with the opportunities (Figure 1). In the context of the study, unlike with disruptive innovators (Kriz and Welch, 2018), entrepreneurs in software proprietary firms, do not necessarily create novel markets but rather develop – and enact (Best, 2015; Maine *et al.*, 2015) - opportunities that cross borders (Chetty *et al.*, 2018). Thus, entrepreneurial attitudes evidenced by the combination of entrepreneurial alertness and high opportunity confidence determine the extent to which entrepreneurs are able to engage in the ongoing development of the entrepreneurial opportunity emerging from the new venture idea. Particularly, higher levels of opportunity confidence reinforces the entrepreneur's conviction, and therefore, their engagement with the new venture idea, whereas a lower opportunity confidence could lead to the idea being discarded.

Learning leads to the revision of activities (and heightens opportunity confidence)

It is by interacting with and by exposing the initial new venture idea to their market that the entrepreneur is able to engage in both experiential and double-loop learning. Through their interactions with international competition, clients and end-users (or both in two-sided markets), they reach unanticipated outcomes, for example in the form of knowledge exchange with different partners (Choi *et al.*, 2019). At this stage, entrepreneurs rely on two types of *learning by doing*. Firstly, they engage in experiential learning (EL), building on prior knowledge and skills to act and react to the impact of the continuously developing the new venture idea, in contexts of increasing international client base and changing market conditions (Chetty *et al.*, 2015; Morgan *et al.*, 2015; Pellegrino and McNaughton, 2017). Prior experience is crucial for fast moving industries, where clients seek high quality tailored software solutions offering superior user experiences (Hewerdine *et al.*, 2014). However, we argue that experiential learning only allows for short-term adaptation to international market conditions (Jones and Casulli, 2014; Miocevic and Morgan, 2018). We posit that a higher level of learning by doing is needed to engage in the strategic shifts that require a change of mind-set for the entrepreneur. Through higher-level reflective learning, the entrepreneurs increase the potential

to offer a range of integrated software applications to a diversified client and end user base and leverage primarily inward international marketing activities around offering a range of managed services through their software platform. Self-reflection and double-loop learning (DL) (Cope, 2005), enable a change of entrepreneurial mind-set and attitudes, subsequently leading to the revision of their internationalisation activities. Depending on the entrepreneur's ability (and time) to engage in reflective double-loop learning, the entrepreneurs overcome the unexpected resistance they encounter when engaging with new client bases (for example, S4 and S5 in our data), including through direct interactions with end-users for feedback or development, by either taking a step back, reflecting, and in certain contexts, educating their market (Kriz and Welch, 2018). Thus, the entrepreneur co-creates their software applications or repackages and presents the original new venture idea in a format, which their client base can interpret. Entrepreneurs learn from their interactions with markets and customers, through the cognitive process of experiential learning. As displayed in Figure 1, double-loop and reflective learning is an iterative and interactive process through which entrepreneurs are able to revise the new venture idea (Cope, 2005; Wang and Chugh, 2014).

Entrepreneurial activities and interactions with clients and end-users

Understanding knowledge accumulation and cognition at the individual level of the entrepreneur helps to explain international decision-making by early internationalisers, and their subsequent international marketing activities (Jones and Casulli, 2014; Yang and Gabrielsson, 2017; 2018). Entrepreneurial learning allows entrepreneurs to redefine their international marketing strategies, and broaden their international client base, and international market segments, irrespective of geographical location. The quest for a product-market fit overrides geographical boundaries (Reuber *et al.*, 2018).

Product development is particularly crucial for early internationalising proprietary firms, because of the interdependence between internationalisation activities, technology evolution (Kriz and Welch, 2018), client and end-user needs (Chang *et al.*, 2013). As a result of learning by doing, entrepreneurs revise their international marketing activities, through continuous product development (CPD) and ongoing market responsiveness (MR). Subsequent international clients and markets are not as predictable or knowable, a priori, reaffirming the importance of reflective and recursive logics of knowledge acquisition in the pursuit of international opportunities (Chetty *et al.*, 2015; Yang and Gabrielsson, 2017). For proprietary based software firms transitioning to a platform offering, increasing software applications with the potential for locking in clients, we observe a change in the marketing mix as an outcome of the ongoing revision of the opportunity (Alvarez *et al.*, 2013) through interactions with both direct customers and end-users, as a two sided-market (Muzellec *et al.*, 2015). In similar cases of multi-sided platform development software, customers are partners and collaborators in the co-development of the product (Snow *et al.*, 2011; Büyüközkan and Arsenyan, 2012; Yang and Gabrielsson, 2017). Incremental, iterative and interactive co-development lead to

subsequent learning opportunities (see Figure 2). Continuous product development is thus achieved through new practices of international customer or end-user engagement from feedback to co-development. Moreover, entrepreneurial opportunities are revised by the entrepreneur in reaction to changes in market conditions, for example, by responding to new competitors' pricing, novel technology or changes in clients' needs (Chang *et al.*, 2013).

Their ability to quickly respond to competitive market change and client and end-user requirements depends on their ability to shift their marketing approach (Wei *et al.*, 2014) and assimilate new variables, that is to *learn*. Market responsiveness thus enables the enactment of international entrepreneurial opportunities by firms, which are able to deploy a broader range of international marketing activities, including by engaging with inward internationalisation activities (Welch and Luostarinen, 1993; Reuber *et al.*, 2017). Responding to initially unanticipated outcomes, we argue that market responsiveness and customer-centred product development are essential parts of entrepreneurial action. Ongoing market responsiveness and continuous product development signify the entrepreneur's ability to pre-empt and respond (Sarasvathy and Venkataraman, 2011; Bunz *et al.*, 2017) to expanding and changing client specific requirements (Fischer and Reuber, 2004; Matthews *et al.*, 2018) disrupting the product market fit. Adaptation or pivoting is possible due to the *learning by doing* mechanisms identified previously (EL and DL), mechanisms influenced by attitudes to opportunities (A and OC) and contingent effects (PIE and PE).

Conclusion

By exploring and conceptualising entrepreneurial action and opportunities, we make three main contributions to the interface of international marketing and international entrepreneurship.

First, we conceptualise entrepreneurial action as the interrelationship of four constructs; contingent effects, attitudes to opportunities, learning by doing and entrepreneurial activities. We argue alongside Yang and Gabrielsson (2018) that studies adopting an entrepreneurial lens to international marketing (Hansen and Eggler, 2010) are yet to fully embrace the current debates on entrepreneurial action and its underpinning constructs. Through the integration of our four constructs in a recursive framework, we advance international marketing research by acknowledging the micro foundations of entrepreneurial action. That is a focus on the individual level of the entrepreneur (Jones and Coviello, 2005; Autio *et al.*, 2013; Shepherd, 2015), on the understanding of marketing-related activities (Yang and Gabrielsson, 2018). In our study, we trace international entrepreneurial opportunities by linking them to the new venture idea (Davidsson, 2015), allowing for the early recognition of a 'product market-fit' that extends beyond geographically-bounded foreign market conceptualisations (Reuber *et al.*, 2018). This allows for the recognition of a broader client and end-user base irrespective of their

geographical location. Our conceptualisation thus allows for the exploration of international marketing issues that have potentially been submerged under macro-level constructs such as ‘innovation’ and ‘market orientation’. We in turn provide a theoretical hoist out of the creative/objective debates whose application, whilst relatively new within international marketing, is being increasingly questioned in international entrepreneurship research (Reuber *et al.*, 2018). We propose that this papers conceptualisation of entrepreneurial action be considered as a complementary lens through which international marketing issues are explored.

Second, we pursue an individual-based approach to opportunities and entrepreneurship (Jones and Casulli, 2014) by integrating learning by doing (Cope, 2005; Corbett, 2005) in the framework. We show how double-loop reflective learning leads to a shift in the entrepreneurs’ mind-set, altering opportunity confidence levels. Increased opportunity confidence levels allow for the re-evaluation and revision of the new venture idea. Double-loop learning also leads to the revision of the firms’ activities through continuous product development and market responsiveness, primarily to client and end-user specifications, allowing for value co-creation. Both clients and end-users do not necessarily hold the technological expertise necessary for product development, however, what they do provide is feedback and an expression of their expectations around the functionality and features, which they expect to be incorporated in future software applications. We posit that integrating entrepreneurial learning in the framework enables a finer capture and understanding of cognitive and individual base mechanisms on international market activities of the firm.

Third, our contribution extends beyond the focus on outward directed internationalisation activities inherent in research exploring marketing concepts through an entrepreneurship lens (Chetty *et al.*, 2015; Chetty *et al.*, 2018). Whilst proprietary software firms engage in collaborative and outward directed (licensing out technology) internationalisation activities, inward international marketing activities (Jones, 1999) emerge as the one of the key outcomes of entrepreneurial action. Inward international marketing activities are aligned to the firm’s ability to provide services for their client and their end-users by leveraging and expanding from their initial software platform. The development of product platforms and product lines in internationalising software firms is acknowledged (Hallbäck and Gabrielsson, 2013), however limited consideration has been given to how the technology evolves (Kriz and Welch, 2018). We show how the mutually reinforcing interaction between continuous product development and market responsiveness in software firms leads to an extended service offering to an increasingly diverse (non geographically bound) client and end-user base. Inward international marketing activities include managing and delivering client marketing campaigns, rebranding, customising and managing the firm’s proprietary software platform for their clients. As a result, clients can offer a broader range of services to their end-users. By providing a broader view of inward international marketing activities, we provide a complementary

understanding of international marketing activities of entrepreneurs, thus adding to the extant literature (Chandra *et al.*, 2009; Hallbäck and Gabrielsson, 2013; Kriz and Welch, 2018).

Finally, there are practical implications for entrepreneurs, business consultants and educators committed to supporting scalable new ventures, particularly within the ICT sectors. In these sectors, potential client and end user bases are international and accessible irrespective of their locations. Scalability is best attained through early internationalisation (e.g. Jones, 1999), both in terms of the initial entrepreneurial opportunity leading to the establishment of the new venture (such as a global market segment) and the entrepreneur's ability to act upon emerging international opportunities. We argue that support programmes should focus on enhancing entrepreneurs' attitudes (awareness and confidence) towards *international* opportunities.

First, this can be achieved by exposing entrepreneurs from new and young firms to international partners, clients and users. In addition to developing awareness of international marketing activities, this exposure would also strengthen the entrepreneurs' confidence towards international opportunities (as they would be more familiar international stakeholders) and their ability to continuously engage a growing international client and partner base (and therefore be more responsive to client and end-user needs). We envisage that access to international stakeholders will require coordination of different actors and support programmes (for example a coordination of entrepreneurship support institutions and academic departments from different disciplines).

Second, in terms of practice, entrepreneurs looking to scale-up should consider a broader (or holistic) range of international marketing activities (Reuber *et al.*, 2018), which allow for interaction between inward, outward and additional internationalisation activities (Korhonen *et al.*, 1996; Jones, 1999). This would in turn enable entrepreneurs to generate alternative revenue streams. For example, international marketing activities can be extended beyond unit sales derived from product exporting (outward), to include managed services offered on the back of a white labelled software platform (inward).

We also argue for a proactive approach to learning, which relies on the entrepreneur's continuous evaluation and revision of their new venture's activities. For entrepreneurs seeking to compete at the technological frontiers, there is a call for entrepreneurial support programmes to encourage the emergence of an ambidextrous entrepreneur who is able to engage in their current activities whilst simultaneously reflecting on what they do, with the explicit intention of revising their activities. From the onset, all entrepreneurial support programmes should be designed as a combination of experimentation and self-reflection (Cope and Watts, 2000; Kolb, 2014) to enable *learning by doing* as conceptualised in this paper.

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Table 1 Case Descriptions

Firm	Firm Age when interviewed (number of employees)	International sales % (total revenue)	Founder /Co-founder Prior Experience	New Venture Idea Initiation and Progression	Client and end-user engagement	Firm Internationalisation Activities	Secondary Data Sources
Firm S1 Online gaming software	4 years (7)	70% (2 to 3 million rands)	17 to 18 year's experience in IT and ecommerce. Worked in top management positions (e.g. director, vice president), for some of South Africa's leading global ecommerce development companies.	The new venture idea leading to the establishment of Firm S1 in 2004 was to build casual online gaming portals to attract both domestic and international clients using a limited marketing budget. Within 4 years from inception. Firm S1 has moved from developing bespoke static gaming sites to launching an entire online game management system in response to: client problems; the need to retain and engage their client's end-users (gamers); competitor analysis; and the emergence of new online platforms.	The firm has access to relevant user online traffic reports, enabling them to develop the system in line with the end-user's needs. The product evolved around the player's expectations and constantly benchmarking their offer with the competition. The firm is also working towards cross platform access ensuring that they are able to interface with all the end-users touch points; online, Facebook, google to gather information for development.	From the onset, the focus has been on building an international client and end user base using the internet as a marketing medium. Firm S1 receives and responds to enquiries from potential clients in different countries, the dominant markets are South Africa, the UK and the US. Firm S1 had offered white labelled gaming sites for over 35 firms (these include local and international publishers and advertisers) and estimated that they had 40 to 50 million end-users accessing their system.	Online media articles Online presentations CV
Firm S2 Mobile software application	3 years (9)	20% (0.5 million rands)	Computer Science undergraduates. The CEO and her cofounders have been driven by their mutual desire to avoid a corporate driven career progression.	The new venture idea emerged from the founders search for cheaper alternatives for making mobile calls in response to South Africa's high prepaid mobile phone rates. The team's initial research activities focused on different wireless technologies enabling them to build their application offering VOIP calls, voice instant messaging and SMS messaging. The first version of their application, launched through their website, enabled end-users to test their application, and provide feedback used to improve the usability and functionality of their software application.	The firm has developed a version of their software application which can be downloaded from their website by the end-user onto their mobile phone and a version for their clients within the telecommunications sector.	The plan has been to license their software application to both local and international telecommunications firms who would be looking at offering their end users a wider range of services. The firm has been approached by all their current and potential international clients because of their superior product which looks better; works smoothly; and offers a higher quality user experience.	Modified Business Plan. Online Media articles

International Marketing Review							
Firm	Firm Age when interviewed (number of employees)	International sales % (total revenue)	Founder /Co-founder Prior Experience	New Venture Idea Initiation and Progression	Client and end-user engagement	Firm Internationalisation Activities.	Secondary Data Sources
Firm S3, SMS Mobile Strategy Platform	5years (13)	35% (1 to 5million rands)	Has held a range of senior marketing positions e.g.: head of division; head of consumer products; and a variety of international Marketing manager roles.	Firm S3's new venture idea, a Short Message Service (SMS) campaign management tool, came from an international client request, which had been turned down by his employers. The SMS campaign management tool was developed as Firm S3's first product. Within five years Firm S3 has responded to competition by initially extending their product line to include bulk SMS messaging before developing a 75% partially complete web-based platform, which can be customised to deliver the entire mobile strategy of a client in any geographical location where a cellular network can be accessed.	The idea for the initial product originally came from a client request for an SMS marketing campaign management tool, which the entrepreneur's former employer turned down. From this initial product, they developed further applications and broadened their client base.	The aim from inception has been to access an international client base. The US, UK and South African offices were set up simultaneously at inception by the Founder. At the time of interviewing, Firm S3 had a client base of over 25 firms from more than 8 countries.	Business Plan. Company Website Online media articles Product Brochures
Firm S4 Security software	7years (30)	40% (9million rands)	Has extensive software development and systems administration prior experience, working and consulting for the IT departments of South African MNE subsidiaries, government agencies and parastatals.	Whilst working at a government security agency, the founder and his cofounder identified a gap in the market for security related software applications for private sector South African firms. The early versions of their software were aimed at South African security companies where the founder and cofounder had an extensive network. Firm S4 has diversified their initial core software to include additional applications that enable their online security software to meet the security requirements of a wider industry base. Their initial and subsequent software development upgrades have relied on client engagement and feedback.	S4 has had to educate and incorporate their client's requirements into the development of their security software application. The inclusion of their potential client's specifications has led to the further development of their first software application whose appeal extended beyond their initial market segment to include South African headquartered MNEs operating in the mining sector.	Firm S4's was initially 'pulled into' internationalisation by their initial South African clients, that is, MNEs in the security and mining sectors. For example one of their clients; a security MNE, has deployed their application to over 10 of their African subsidiaries. Firm S5 has installed their software and trained the staff of the southern African operations of South African mining MNEs. At the time of interviewing Firm S4 was looking at adopting a proactive approach to internationalisation based on their overhauled online security data intelligence system.	Online media articles Company Brochures

Firm	Firm Age when interviewed (number of employees)	International sales % (total revenue)	Founder /Co-founder Prior Experience	New Venture Idea Initiation and Progression	Client and end-user engagement	Firm Internationalisation Activities.	Secondary Data Sources
Firm S5 Supply chain relationship management software (SRM)	5years (8)	100% (projected revenues 7million rands)	Positions held in the IT sector include: senior business analyst, systems analyst, senior business consultant and developer. When reflecting on his prior experiences, he realised that he had been involved in working on different aspects of supply chain management throughout his career.	The initial new venture idea was to develop an end-to-end supply-chain management information system in partnership with a local university funded through the founder's independent consultancy services. Whilst consulting, an opportunity to negotiate an agreement which would position Firm S5 as the key technology partner for their international client emerged through the closure of the original technology provider, the Founders previous employer and subsequent client. At the time of interviewing the CEO had reached the decision to relaunch Firm S5 as an offshore software development firm offering a range of supply chain relationship management solutions.	Firm S5 has entered a software co-development agreement with their main European client, where they operate as their technology development partner. At the time of interviewing, they were now looking at offering SRM related services of the back of the redeveloped technology to additional clients (in any geographical location).	Firm S5 has engaged in internationalisation from the onset initially through the founder offering consultancy services to their international client, before transitioning to becoming this client's technology development partner. Having relaunched the firm as an outsource development house offering supply chain relationship management solutions the founder was now looking at expanding their European client base.	Business Plan. CV Brochures Online media articles

Table 2 Analytical Findings

Coding	Construct	Selected Co-founder Power Quotes (Pratt, 2008)	Supporting secondary data sources
Contingent Effects	Construct 1 Prior Industry Experience (PIE) Personal Experience (PE)	<p>"... I left and went into the casino industry. The online casino industry. [...] I was IT director there. We were the second largest online casino group in the world. [...]The big benefit there, obviously the market is ... it's not even cutting edge, its bleeding edge. You've got to be on top of your game day in and day out, otherwise you fall out. From a competitiveness point of view, I don't think there is anything more competitive than the online casino and poker industry. There ... I identified a number of opportunities." (Co-Founder Firm S1, online gaming software)</p> <p>"At that time it wasn't a well-considered decision it was just look I don't wanna join the corporate world, you don't wanna join the corporate world let's just try and do something. It wasn't necessarily that we had been planning it from day one or that we were great friends. It was more just people coming together to finding an alternative to getting a job." (Co-Founder Firm S2, mobile software application)</p> <p>"I mean I have worked for international companies with [MNE1] and [MNE 2] and [MNE 3]. I have always been involved in what the international companies where doing, always meeting with people, with contemporaries and colleagues in Europe and in America and dealing with customers over there and seeing what is going on over there". (Co-Founder Firm S3, SMS mobile strategy platform).</p> <p>"We ... I would say [...] we are an IT company. And in terms of that, my IT background definitely was a big advantage. From getting our products into the market perspective, we definitely needed the skills and the contacts and the network of Entrepreneur 2, because that gave us the platform to roll this thing out. So we could develop whatever we thought of, and he could take this to the market to sell it, and to make the market believe that that's what they needed." (Co-Founder Firm S4 security software)</p> <p>"I have been working for the last number of years in all the different aspects of specifically the supply chain. It was always somewhere in the supply chain, so it was either [...] to do with contract management or strategic sourcing or procurement or business to business commerce or whatever you want. It's always been in that area or somewhere. I've worked in that area and I have worked with different providers and one of the projects that I had done at that point was the [Project name] project for Company to go and investigate the SRM landscape in terms of IT solutions. The SRM we talk about the supplier relationship management if you think of SRM in terms of the reverse of CRM." (Founder Firm S5 supply chain relationship management software)</p>	As vice president international business development for the online casino group, one of the Co-founders primary roles included identifying what he refers to as international opportunities for the group (Co-Founder Firm S1, online gaming software CV)

Table 2 Analytical Findings

Coding	Construct	Selected Co-founder Power Quotes (Pratt, 2008)	Supporting secondary data sources
Attitudes to opportunities	<p>Construct 2 Alertness; Heightened awareness of potential new venture ideas.</p> <p>The kernel of opportunities are out there to be identified (Shane 2000).(A)</p>	<p><i>"The big thing in the casino industry is [that] you need to acquire players, and you need to acquire players cheaply, because, otherwise your return on investments [...] is non-existent. It was easy in the beginning, because we had the likes of Google and Yahoo as vehicles to actually place advertising and draw users into the system. They shut us [The founder's previous employer] out with legislation that came about in the US, which immediately cut off about 60 to 70 percent of our new user acquisition mediums. I then went to them with a proposal to set up casual games portals, which is exactly what [FIRM S1] [...] now does."</i>(Founder Firm S1, online gaming software)</p> <p><i>"Initially the idea was borne out of the fact that being students it was very expensive to call each other especially at the prepaid rates that [...] certain operators charge. So we were thinking that on a campus like [local University] it should be possible for students to call each other via Bluetooth or WIFI or something and not have to incur cellular calling rates and the like. So one of my partners [Co-founder] came up with trying to make calls over Bluetooth [...] that was the raw idea back then. It wasn't actually possible in that form but after that we developed the idea, things like Wi-Fi and 3G became more prevalent on phones"</i> (Founder Firm S2, mobile software application)</p> <p><i>"At that stage, me and my partner conceptualised the idea of building our own computer software applications, because we saw that there was a gap in the market in terms of the software that was purchased by these parastatals, or state bodies, in terms of what they wanted to do, in terms of law enforcement and security-related software applications [...]"</i>(Co-Founder Firm S4, security software)</p> <p><i>"But SRM is still relatively a new thing. So my vision at that stage was to develop an SRM [Supplier Relationship Management] system and what I am trying to say by that is at that time and still today you get a lot of players in the SRM space who have companies that specialise in contract management. You've got companies that specialise in procurement, market places and sourcing but there is no one solution integrated supply chain solution that exists today..... Completely there is none."</i> (Founder Firm S5, supply chain relationship management software)</p>	<p>The idea has been international from inception, all of Firm S2's communication highlights their vision to reach a global client base (Firm S2 summary business plan and presentation slides)</p>

Table 2 Analytical Findings

Coding	Construct	Selected Co-founder Power Quotes (Pratt, 2008)	Supporting secondary data sources
Attitudes to opportunities	Construct 2 Increasing Opportunity confidence; entrepreneurs evaluation and assessment of the new venture idea (Davidsson 2015). (OC)	<p><i>“And we set up a number of games portals, including one called [Game 1]. We set up a weekly million dollar lottery. We set up bingo sites. And really got, I think it was 250,000 registered users in the first three months. With a total marketing spend of \$5000, which is absolutely nothing. [...] We had retention rates of about 75 to 80 percent, of users coming into the system and staying within the system. I then saw this as a business opportunity and offered to buy that division out of the company, which then declined because they wanted it for themselves. I then in [...] 2004 started [...] Firm S1 basically started setting up casual games portals.” (Founder Firm S1, online gaming software)</i></p> <p><i>One of the things that we actually wanted to do when I was at [MNE Telco firm] [which] we thought was a very good idea [was to build] [...] an SMS service, a campaign management tool for radio stations, TV channels, newspapers. Basically [Telecommunications MNE] was asked to do that, they decided not to go forward with it and I decided it was a good idea so that was our first product. We built a web-based campaign manager for SMS [Short Message Service] campaigns- competitions, votes, dedications, comments; all of that type of stuff. And we packaged it in a way that it would suit a radio station or a TV Channel or a print media company. And we started off doing campaign management. (Founder Firm S3, SMS mobile strategy platform)</i></p>	Firm S3's founder headed the SMS [Short Message Service] division for the UK subsidiary of a South African headquartered Telecommunications MNE. (Firm S3 Business Plan).
Learning by doing	Construct 3 Experiential learning: knowledge transfer from previous experiences. (EL)	<p><i>“The other is obviously within the casino industry. How to do it, how to be aggressive, go for it, keep your eye on the ball, don't be scared to learn new systems and new techniques, and identify new opportunities as I did with the casual games portals, the lottery, the bingo. But have a game plan, and stick to it. I think that's exactly what we're doing here. We get a lot of opportunities; we get calls every week for different projects. We do some search engine optimisations. [...]But we get calls, constantly, to actually take over their search engine optimisation projects. Which is not what we're going to do, so we turn down a hell of a lot of projects, because it's not within the core of the business. So we stick to what we believe in.” (Founder S1, online gaming software)</i></p>	

Table 2 Analytical Findings

Coding	Construct	Selected Co-founder Power Quotes (Pratt, 2008)	Supporting secondary data sources
Learning by doing	Construct 3 Experiential learning: knowledge transfer from previous experiences. (EL)	<p><i>"Well the main lesson that we learnt really, or the thing that was most valuable for us was the fact that, [the] University does teach you to some extent, how to research and that was possibly the most valuable skill we needed in starting in a field where there wasn't a knowledge of body to draw from, it was purely research and putting information together so, by far your ability to source information is critical in this or any new or innovative industry and that's so University taught us how to find out what you don't know. None of the actual content was really that useful that we learnt directly from the University"</i> (Co-Founder Firm S2, mobile software application)</p> <p><i>"As you grow, obviously, you pick up things in the industry and ways of working, and it's basically ... you can call it a knowledge base of what we do, how we do it, what is required, who uses what, what works and what doesn't ... so yes, we definitely rely on that. And based on our history and where we're going, we rely heavily on our knowledge base in taking us there."</i> Co-Founder Firm S4, security software)</p>	Online Media articles provide support for Firm S2's founders establishing their firm immediately after completing their undergraduate degree programme at a local university. (South African online newspaper)
	Construct 3 Double-loop reflective learning based on previous experience; represents a shift in mind set. (DL)	<p><i>"What I found working for big [international] companies [is that][...] the bigger a company gets, with decisions [being made] by committee, you end up not making decisions; you become slow and you're not able to change as quickly as you need to, to adapt to new market conditions and new products[and] new technologies. So the whole point of having a small company which is run by a small group of management is that each person has their responsibility. They decide what happens for their division or their [...] sector completely and make the decision; you move forward with it, if you need to change things or go back on the decision, you do that. But [in] a big corporate - that doesn't work that way."</i> (Founder Firm S3, SMS mobile strategy platform)</p> <p><i>"The gap that we identified in the market, and initially it was very difficult because ... we would say that our market at that stage was not ready for what we developed. So it took us quite a while, developing software, showing it to the market, but them not being able to grasp the idea behind what we are trying to do. So we had to take a few steps back to educate our market to what they really require, before we were able to put these things in place."</i> (Co-founder Firm S4, security software)</p>	Firm S4 hosts annual user's conferences, and courses where attendees provide input on the features and functionality for future Firm S4's (Firm S4 Newsletter, online media articles) Firm S4's software applications are recognised as one of the most user friendly online security applications which their clients have worked with. (Client in Firm S4 Newsletter)

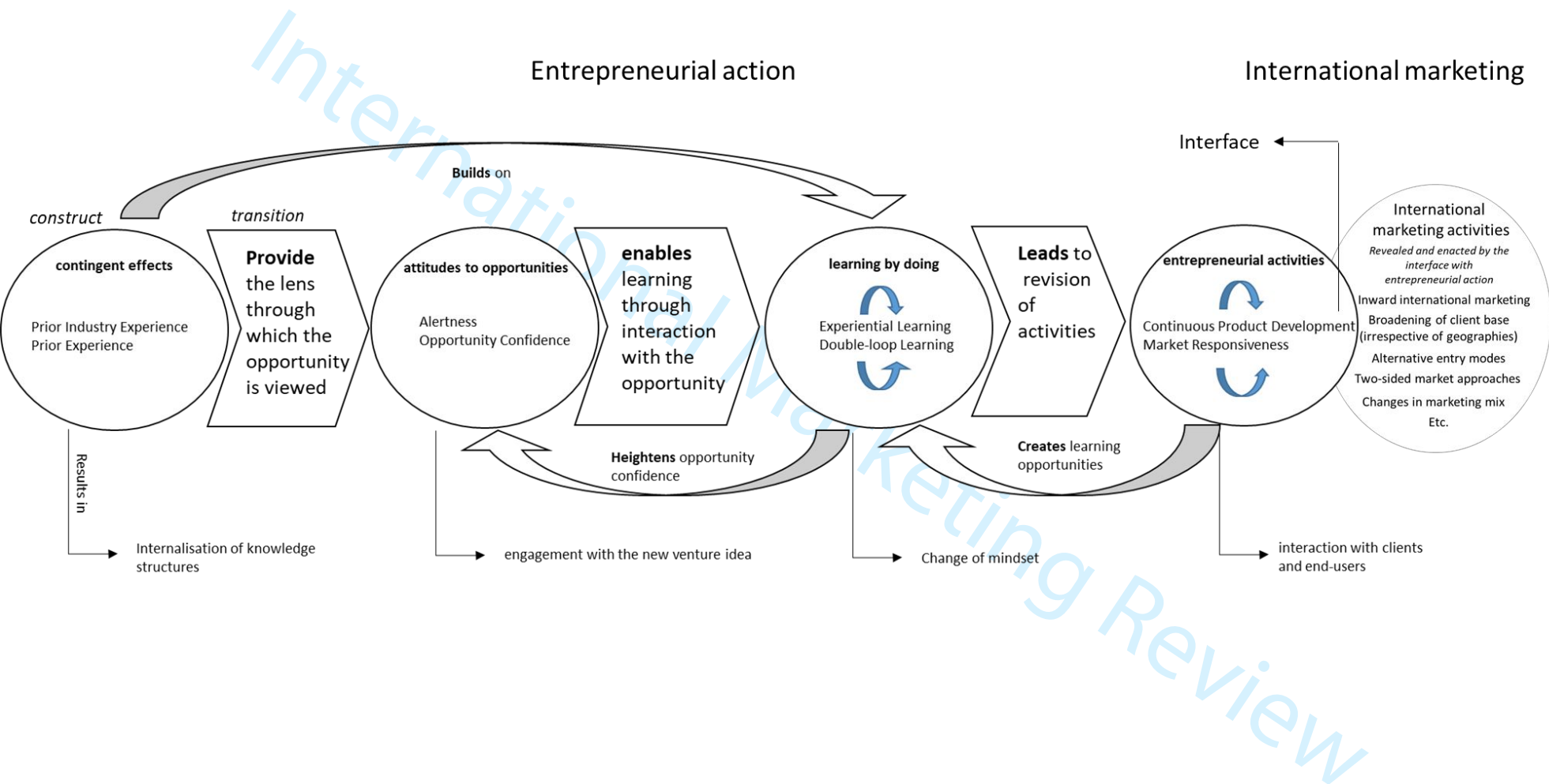
Table 2 Analytical Findings

Coding	Construct	Selected Co-founder Power Quotes (Pratt, 2008)	Supporting secondary data sources
	Construct 3 Double-loop reflective learning based on previous experience; represents a shift in mind set. (DL)	<p><i>"It's been quite a long process with them [international business client] and getting things in order for them and then because we were also keen to learn how to deal with a foreign based company, deal with an internationally based client. We also wanted to take them on so that we [could] gain some experience in future to be able to handle international clients better. So it's been a large learning curve for both of us in this instance and it was a good experience for us in that regard. It wasn't smooth at all but now that we have gotten through it we are much better poised to pursue [...] aggressively an internationalization strategy." (Co-Founder Firm S2, mobile software application)</i></p> <p><i>"We say we do SRM [Supplier Relationship Management] and they'll say, well what's that? [...] We will say its supply chain. But what's that? It's sourcing. But what's that? You have to spend two hours with somebody, trying you know, [explain] because SRM is [...] fairly [new], people don't know what it is, you know."</i></p> <p><i>"I realised that the ambition that we have is very complex and overcomplicated and expensive and how are we going to sell this thing. [...] That's when I realised but what we do on a day to day basis is enough of a service offering to just package it together and sell our ability to outsource for companies." (Founder Firm S5, supply chain relationship management software)</i></p>	
Entrepreneurial activities	Construct 4 Continuous new product development (CPD) based on local and international market responsiveness (IMR) leading to customers being locked into their products through the firm's ability to offer a wide range of services.	<p><i>"So it's really now becoming the big daddy of [gaming]... We went and did all the research across all the top game sites globally, and really looked to see what their unique selling proposition was, and took Firm S1 to the total next level. So we've incorporated a lot of what some of them [competitors] have, but have built a lot of uniqueness into our new platform as well." (Co-Founder Firm S1, oOnline gaming software)</i></p> <p><i>"The companies that have approached us; our current clients and the companies overseas they have approached us all unequivocally say that [our technology] is by far the best mobile application around, available in the world today (emphasis here) and that's after they have done a whole lot more research because they don't generally come, they don't generally try and get in touch with a South African company that's seemingly so far away for the fun of it. They go to the guys that are closest to them first and once they have given up they come here and that's a repeated statement on their part." (Co-Founder Firm S2, mobile software application.)</i></p>	Firm S2's partial business plan indicates that they had started working with domestic clients and were also interested in international clients. (Firm S2 partial business plan)

Table 2 Analytical Findings

Coding	Construct	Selected Co-founder Power Quotes (Pratt, 2008)	Supporting secondary data sources
Entrepreneurial activities	Construct 4 Continuous new product development (CPD) based on local and international market responsiveness (IMR) leading to customers being locked into their products through the firm's ability to offer a wide range of services technology.	<i>"What we found is that within a year there were a whole lot of other companies doing the same type of thing so we decided to expand our product line and we started doing bulk SMS messaging and then from there we decided to move into really, really cutting-edge technologies [for] which we could build a platform and then adapt that platform specifically to each one of our client's needs.[...]And we found that doing that we've been able to charge a premium for our services because it is a customised solution for each customer"</i> (Co-Founder Firm S3, SMS mobile strategy platform)	The bulk of Firm S3's competitors are international firms headquartered in the UK. (Firm S3 Business Plan) Firm S3 had developed their SMS/MMS platform offering six SMS products at the time of interviewing. (Firm S3 business plan and product pamphlets)

Figure 1: Proposed framework for entrepreneurial action: transition between constructs and interface with international marketing



Appendix 1: Construct Definitions

Themes emerging from the data	Key Author (s)	Underpinning constructs	Definitions (literature)	Operationalisation
Contingent Effects	(Shane, 2000; Tiwari and Korneliussen, 2018)	Prior Industry Experience	Technical know-how, Prior engagement with the market, internationalisation, or customers in the same industry	Technical know-how
	(Pellegrino and McNaughton, 2017; Tiwari and Korneliussen, 2018)	Prior experience	Knowledge and networks from past experiences	More general knowledge
Attitudes to opportunities	(Kirzner, 1997; Ardichvili <i>et al.</i> , 2003; Covin and Lumpkin, 2011; Tang <i>et al.</i> , 2012)	Alertness	Heightened awareness of potential new venture ideas - where new venture ideas infer potential products, markets, and product market- fit	Heightened awareness of the potential to address a market need. Emphasis here is on an evolving product - market fit
	(Davidsson, 2015; 2017)	Opportunity Confidence can only be determined via empirical analysis	The outcome of an entrepreneur's assessment of 'an imaginary combination of product/service offering, markets, and the means of bringing the offering into existence' (page 683). The actor's evaluation of the new venture idea as a stimulus.	levels of operation; High, Moderate, Low

Themes emerging from the data	Key Author (s)	Underpinning constructs	Definitions (literature)	Operationalisation
Learning by doing	Education Literature (Kolb, 2014) Entrepreneurship and internationalisation (Cope and Watts, 2000; Cope, 2005; Corbett, 2005; Politis, 2005; Bunz <i>et al.</i> , 2017)	Experiential Learning	knowledge acquisition through trial and error drawing on competencies from prior experiences which are transferable to other situations, also referred to as experiential knowledge of internationalisation (Fletcher <i>et al.</i> , 2013)	Mutually reinforcing interdependent constructs
	Organisation and education literature (Argyris and Schön, 1978; Miner and Mezias, 1996; Miner <i>et al.</i> , 2001; Kolb, 2014) Entrepreneurial learning and internationalisation (Cope and Watts, 2000; Cope, 2005; Jones and Casulli, 2014)	Double loop Reflective Learning	Transformative behaviour following self-reflection (cognitive) processes, leading to changes in strategies or action. Based on the entrepreneur's redefinition of their perception through knowledge organisation mechanisms. Learning how to learn based on reflection regarding international market selection and entry mode strategy.	
Entrepreneurial Activities	(Jaworski and Kohli, 1993; Chang <i>et al.</i> , 2013; Wei <i>et al.</i> , 2014)	Market Responsiveness	Has been discussed under market orientation, 'matching the market' and the ability to quickly respond to competitive market changes (e.g., competitors' price strategy, customers' complaints or needs)	Mutually reinforcing and interdependent constructs
	(Snow <i>et al.</i> , 2011)	Continuous Product Development	Ongoing and incremental collaborative / co-development of product with clients and end-users, see specifically Büyüközkan and Arsenyan (2012) for the collaborative aspect of product development.	

Table: Appendix 2: Secondary data sources and interview transcript word count

Firm	CV	Business Plan	Brochure (s)	Online media articles	Company external presentation slides	Interview transcript word count
Firm S1 Online gaming software	✓	✓	✓	✓	✓	14862
Firm S2 Mobile software application.	✓	✓		✓	✓	9652
Firm S3 SMS mobile strategy platform		✓	✓	✓		11493
Firm S4 Security software			✓	✓		10898
Firm S5 Supply chain relationship management software (SRM)	✓	✓	✓	✓		10419