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Angel investors' predictive and control funding criteria: the importance of evolving business models

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ANGEL INVESTORS' PREDICTIVE AND CONTROL FUNDING CRITERIA: THE IMPORTANCE OF EVOLVING BUSINESS MODELS

Introduction

The objective of this study is to investigate angel investors' decision-making in respect of taking an equity stake in a start-up firm with specific reference to facilitating an evolving business model. Entrepreneurial acts involving the initiation of start-up firms have been of interest for many years and incorporated studies from various business perspectives including government support, facilitating high-growth enterprises and reducing the risk of failure when identifying and exploiting opportunities (Storey, 1994; Hisrich and Peters, 1998; Stokes, 2002). However, an interest in business models within 'lean start-ups' is a relatively contemporary phenomenon, to both academics and practitioners (Osterwalder and Pigneur, 2010; Ries, 2011; Blank, 2013).

Nevertheless, the lean start-up movement involves more than a firm being under-resourced, and hence in need of investment, whereby a body of research exists on this topic (**most** noticeably Ries, 2011). For example, the need to 'build, measure and learn' during a fast moving process that avoids long-term planning cycles. Ries (2011) notes that management teams may undertake activities such as gaining feedback on minimum viable products (MVPs); likewise, consider fundamental questions such as can we make it (technical issue) and should we make it (marketing issue)? A key issue as Blank (2013) suggests is to get out of the building and talk to customers rather than engage in potentially wasted planning time. There is a consequently a need to implement an iterative business model that can evolve in line with changing conditions (Osterwalder and Pigneur, 2010). This is important since as Teece (2010, p172) points out: "whenever a business enterprise is established, it either

explicitly or implicitly employs a particular business model that describes the design or architecture of the value creation, delivery, and capture mechanisms it employs”.

In the specific context of this study, existing literature has suggested that **entrepreneurial** ecosystems (hereafter referred to as ‘ecosystems’) can vary (Blank, 2013). **Mason and Brown** (2014, p.5) view an ecosystem as follows. ‘A set of interconnected entrepreneurial actors (both potential and existing), entrepreneurial organisations (e.g. firms, venture capitalists, business angels, banks), institutions (universities, public sector agencies, financial bodies) and entrepreneurial processes (e.g. the business birth rate, numbers of high growth firms, levels of ‘blockbuster entrepreneurship’, number of serial entrepreneurs, degree of sellout mentality within firms and levels of entrepreneurial ambition) which formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment.’

Studies have established for some time that firms operating in particular sectors within certain countries with a relatively limited domestic demand, typified by New Zealand that features in this investigation, tend to have a need to internationalize quickly (Bell et al, 2004; Crick and Spence, 2005; Jones et al, 2011). This has given rise to terms such as ‘international new ventures’ and ‘born global’ firms (Oviatt and McDougall, 1994; Crick and Crick, 2014; Cavusgil and Knight, 2015; Coviello, 2015). For reasons such as scalability and viability, some entrepreneurs in smaller countries with limited domestic potential need to consider the notion of ‘international’ opportunity recognition and exploitation in objective setting (Mainela et al, 2014; Muzychenko and Liesch, 2015). In fact, as Onetti et al (2012, p337) point out, “the business model by which firms operate needs also to accommodate the spatial dimensions indicated by globalization; and the emergence of global technology markets”. These firms

from smaller countries with limited domestic potential sometimes need to be ‘global start-ups’ or certainly operate with a business model that facilitates a high international rather than global presence; in effect, be ‘born global or die local’ (Blank, 2014; Rasmussen and Tanev, 2015). Consequently, linking with the objective of this current study, without funding plus associated access to investors’ experience and networks, some ventures may not get past the start-up phase, hence understanding angel investors’ decision-making is vital for a number of entrepreneurs.

Positioning of this investigation is within the wider ‘entrepreneurial marketing’ literature. No agreed definition appears to exist concerning entrepreneurial marketing, something that is at times termed inter-changeably in existing research as the ‘marketing/entrepreneurship interface’ (Hills and LaForge, 1992; Morris et al 2002; Miles and Darroch, 2006). However, more important than debating different definitions is to understand the facets of entrepreneurial marketing to contextualise this study further. Morris et al (2002) propose seven facets of entrepreneurial marketing, namely: proactive orientation, opportunity-driven behaviours, customer intensity, innovation-focused behaviours, risk management, resource leveraging behaviours and value creation. This current investigation primarily focuses on the ‘risk management’ facet; that is, in respect of angel investors’ decision-making with specific reference to facilitating an evolving business model in their risks/rewards considerations. Understanding such decision-making is important to contribute to existing academic literature with respect to business models in lean start-up firms and underpinned in this current study by the effectuation and causation considerations of Sarasvathy (2001).

Additionally, the broader investment literature **further** underpins this investigation. Studies have existed for some time that consider funding sources and investment decision-making; for

example, ranking particular criteria deemed to be important across different funding organizations or individuals (Mason and Stark, 2004; Wiltbank et al, 2009; Fairchild, 2011; Maxwell et al, 2011; Collewaert, 2012; Dutta and Folta, 2016). Debate has arisen in respect of ‘predictive’ as opposed to ‘control’ criteria in decision-making and not least in respect of angel investors (Wiltbank et al, 2009). A predictive approach corresponds to some extent with conventional marketing wisdom, since it attempts to increase the likelihood that an investment will succeed via the use of tools such as market research and forecasting models. In contrast, the merits of a non-predictive approach may be important (Wiltbank et al, 2006). Angel investors may want control over outcomes and seek a systematic way to achieve this such as taking an equity stake and influencing decision-making.

Decision-making was restricted to angel investors in this current investigation due to their propensity to become involved at a firm’s start-up phase (Wiltbank et al, 2009); furthermore, this restriction also served to place a boundary on the study for methodological reasons (Stake, 1995). Wiltbank et al (2009, p116) note that an angel investor “typically describes a wealthy individual who acts as an informal venture capitalist, placing his or her own money directly into early stage ventures”. Therefore, a further consideration in setting the boundary for this study was that angel investors unlike certain **organizational** funding sources, such as banks, stand to personally benefit or suffer from risks/rewards based on perceived affordable losses in decision-making.

The findings of this study build on the work of Wiltbank et al (2009) and suggest that ‘opportunities’ as perceived by entrepreneurs may not translate into viable investments without giving due attention to an evolving business model and understanding the needs of

angel investors. Importantly, the study suggests that instead of viewing prediction and control as separate, in reality, angel investors will use both to varying degrees in their decision-making. The findings also suggest that a temporal component is important; that is, **an issue** counter-intuitive to popular television shows like the ‘Dragons Den’ and ‘Shark Tank’. Instead of a one-off investment after a pitch, various rounds of investments are likely, based on a combination of prediction and control **in decision-making**.

On the one hand, risks/rewards and affordable loss considerations suggest that angel investors may require **agility; for example**, the build, measure and learn guidelines of the lean start-up approach to implement pivoting strategies in relation to firms’ business models. On the other hand, while angel investors will want to reduce their risk of losses, by working with management teams and overcoming initial problems in their business models, they would equally want to increase their reward potential, but that may take time to become profitable. However, potential complications exist regarding skill shortages in building management teams within certain countries such as the context of this current study. A problem for angel investors is to know when to cut their losses and exit investment decisions as opposed to working with management teams and putting more time and money into building a business.

Furthermore, the findings indicate that the role of angel investors’ networks that span different ecosystems is important, especially in the United States as a perceived lead market, both to offset potential financial losses by co-investing, but also to open up opportunities internationally. However, this is at a cost to management teams in the sense that depending on the equity the investors acquire, they run the risk of losing decision-making in favor of the investors. This is contrary to literature that indicates the importance of a managerial mind-set

in their product-market decisions (Autio et al, 2000; Nummela et al, 2004); that is, if business model decisions are in reality heavily influenced by investors rather than management teams.

The organization of this paper is within five sections that start with this Introduction; this outlined the objective, context and contribution of the study. A Literature Review forms the second section followed by a consideration of the qualitative methodology employed that is the third section. The Findings are then summarised in section four, before the paper ends with a Discussion section. This final section contains the conclusions that relate findings back to the literature, the implications for practitioners, and limitations plus recommendations for future research.

Literature Review

Business Models

While a body of literature exists on business models, definitions and characteristics vary making comparisons across studies difficult (for example, Zott and Amit, 2010; DaSilva and Trkman, 2014; Bonnet and Westerman 2015; Spiegel et al, 2015). Baden-Fuller and Haeffliger (2013, p419) define a business model as “a system that solves the problem of identifying who is (or are) the customer(s), engaging with their needs, delivering satisfaction, and monetizing the value”.

Baden-Fuller and Morgan (2010) suggest that the study of business models is useful due to the multiple and mediating roles they play. Additionally, Chesbrough (2010) notes that the same idea or technology that an entrepreneur tries to take to a market via different business models will result in particular economic outcomes. Osterwalder and Pigneur (2010) popularized

what has become known as the business model canvas and this provides 9 building blocks as shown in Figure 1. While arguably geared to practitioners, the business model canvas is somewhat academic in nature since it has evolved from Osterwalder's doctoral study (2004).

Insert Figure 1 Here.

While seemingly discrete in nature, Osterwalder and Pigneur (2010) argue that the 9 building blocks are in fact inter-related; the way in which an entrepreneur or management team utilize these components leads to the formulation of a business model. In diversified organizations, different elements of the respective firm's overall portfolio of operations can be 'mapped' on a canvas in different colors to easily show their respective building blocks. In other words, different business models may be in place in the same organization in respect of particular product-market offerings (Osterwalder and Pigneur, 2010).

Furthermore, in terms of strategic renewal, a management team should not see its business model(s) as static but rather re-evaluation is important in line with environmental circumstances and not least changing competition (Osterwalder and Pigneur, 2010). This would be dependent on an industry and competing business models among firms can co-exist in a competitive market (McNamara et al, 2013). In short, a particular value proposition may be offered to different customer segments, which in turn have their own cost base, key resources, partners, activities, channels, relationships and may generate revenue in their own way; this interaction maps out a respective firm's business model.

An alternate perspective offered is in the research of Gassmann et al (2014). Their research found that over 90 percent of all business model innovations they studied recombined existing

ideas and concepts from other industries. Their study suggests that entrepreneurs and management teams can learn from a recombination and creative imitation of these 55 recurring business model patterns. Formulation of a business model is via key components of a 4-step framework. First, the customer (who); second the value proposition (what); third, the value chain (how) and fourth, the profit mechanism (why). The 4 dimensions offered by Gassmann et al (2014) have clear overlaps with the 9 aspects of the business model canvas offered by Osterwalder and Pigneur (2010); in principle, supporting the common underlying facets of a business model even if a definition cannot be agreed in the literature.

Not all firms will have a well thought out business model at the time of seeking investment and for those that do, the previously mentioned lean start-up principles that were **considered** in the Introduction section of this paper have been recognized as useful to guide entrepreneurs (Ries, 2011; Blank, 2013). In fact, a large percentage of start-ups fail (Blank, 2013). Under these circumstances, business models tend to evolve via a validation process. After the resulting customer interactions, it is likely that a pivot strategy will arise (perhaps several times) in the business model design, possibly affecting the development of a MVP according to Ries (2011).

Arguably, at the start-up stage, an entrepreneur's business model is simply a series of hypotheses, for example, mapped on the canvas proposed by Osterwalder and Pigneur (2010) that needs testing via customer feedback. This gives rise to the term 'customer development' (Blank, 2013). This is in 2 core stages, that is, first the search stage where the customer search will lead to business models being validated and pivoting strategies undertaken where necessary. Second, the execute stage where the validated business model will lead to customer

creation and on to the company building stage. Consequently, investors may play a role in this process and hence a review of existing literature follows.

Criteria for Investment

A body of literature exists on the broad topic of issues affecting investment in start-up firms in respect of opportunity recognition and exploitation. Debate exists over whether opportunities are ‘discovered or created’ (Alvarez et al, 2013), and in regards to the latter, not least via the implementation of the previously discussed business models. In fact, a more fundamental level debate also exists in respect of what constitutes ‘entrepreneurial opportunities’ (Gregoire and Shepherd, 2012; Davidsson, 2015). Specifically, measuring the construct itself and how it is applied, such as at the individual, venture or individual-venture relationship. This issue is important since an individual may be a novice, serial or even portfolio entrepreneur and hence have differing levels of experience. Moreover, the further experience of a team may also add value. However, an opportunity as perceived by an individual or team may not be achievable without a validated business model that appeals to investors.

A body of knowledge exists that considers funding sources and investment decision-making (see, for example, Mason and Harrison, 1995; 1996; Mason and Stark, 2004; Wiltbank et al, 2009; Maxwell et al, 2011; Collewaert, 2012; Dutta and Folta, 2016). A key issue is the notion of ‘risk’ that can be viewed in particular ways (Bromiley et al, 2015), but it is important to differentiate this from the notion of uncertainty. Drawing on the work of Knight (1921), risk suggests that a decision-maker can build on information to make a prediction based on probabilities in respect of future events. In contrast, uncertainty suggests an inability to assign probabilities on the outcomes of future events. Various issues affect funding decisions with a degree of commonalities across existing studies. For example, Maxwell et al

(2011) offer a summary involving: the nature of the product; market; entrepreneur; financials; and investment. Each of these main issues had their own sub-characteristics, for example, in terms of the last issue namely investment, this included the team characteristics, entrepreneur fit, business fit, location, referral source, co-investment, plus investor role.

Overall, some of these considerations come together in the formulation of a business model or as also stated in earlier research such as Mason and Stark (2004), what might be seen as a ‘business plan’ (although a business model and business plan are different). Evaluation takes place in respect of the risks/rewards considerations by investors; that is, in respect of an initial pitch plus subsequent interactions with entrepreneurs and management teams. For example, evaluating whether a management team may overestimate their competencies and conversely neglect those of their competitors (Jenkins, 2014). Alternatively, whether a management team may set unattainable goals (Baron et al, 2016); therefore, an investment may not be scalable and consequently worthwhile. However, causation versus effectuation perspectives underpin this current study drawing on the work of Sarasvathy (2001); in particular, assessing risks and rewards against affordable losses that shape investment (Wiltbank et al, 2009).

Debate exists on the work of Sarasvathy (2001) in respect of causation versus effectuation approaches (Arend et al, 2015; Read et al, 2016). Related work has applied this to entrepreneurs’ internationalization activities (Andersson, 2011; Kalinic et al, 2014; Sarasvathy et al, 2014; Galkina and Chetty, 2015). This is important since as already established, investment in start-ups may involve the consideration of the venture becoming scalable internationally to make it worthwhile and especially in small country contexts. Causation based decision making is viewed to be more effective in predictable environments and

effectuation where the future is unpredictable (Sarasvathy, 2001); a start-up firm might be viewed as highly unpredictable (Blank, 2013; Ries, 2011).

Causation suggests decision-making may begin with various alternatives and end in one objective; however, effectuation recognises that alternatives can end in different ways. Considerations are based on factors like what the entrepreneur knows that draws on the resource based view of the firm, plus who they know; drawing on the network perspective (Andersson, 2011). In the contemporary environment, this may extend to networks via social media (Fischer and Reuber, 2011; 2014). Decision-making under an effectuation approach is not linear, but iterative, based on an individual's interactions with various stakeholders (like investors); however, it is also contingent on factors such as resources and attitudes towards affordable losses (Sarasvathy, 2001).

The role of management teams in exploiting international opportunities is important (Reuber and Fischer, 1997). Decision-making from a team's perspective fits into the growing body of 'micro-foundations' research that aims to decompose macro-level constructs (like organizational routines) in respect of the behavior of members at various levels in an organization (Barney and Felin, 2013). In start-up firms, there is typically a very small number of employees, if not a single employee (entrepreneur). Consequently, the decisions that they (or he/she as the lead entrepreneur) take at a very early stage of a business; for example, even before inception, can influence the perceptions of investors in their funding decisions. Nevertheless, it is this latter perspective rather than that of the overall team that forms the basis of this current investigation; that is, in respect of addressing the research question.

Research question: what factors affect angel investors' decision-making in funding new start-ups with specific reference to their evolving business models?

To make this study manageable in respect of addressing the research question, the investigation is in the context of New Zealand to represent a small country with limited domestic demand. Specifically, this is important because without investors' support, a start-up firm may never be able to pass a developmental phase to implement their business model, let alone identify and exploit scalable opportunities domestically and abroad.

Methodology

Context and Potential Transferability

As previously outlined in this paper, the New Zealand context is important in this investigation given that ecosystems vary (Blank, 2013). The country is relatively small and geographically isolated. In terms of potential transferability outside of this context, studies such as Bell et al (2004) suggest that some businesses and not least high-tech firms in various countries often exist in small global niches with limited domestic demand; consequently, they need to rapidly exploit windows of opportunity. It follows that new venture start-ups in New Zealand and certain other small countries with limited domestic demand typically need to consider opportunities across national borders in pitches to investors at an early stage of funding rounds. Consequently, the study offers the potential for wider transferability across countries exhibiting similar characteristics. However, following the guidelines offered by Stake (1995), to 'generalize' outside of specified boundary of the study is potentially incorrect. It nonetheless offers opportunities for future studies, a point revisited at the end of the paper.

Case Study Research

The term ‘quasi-case study’ adopted in this investigation, results from criticisms that exist of research claiming to use a case study methodology without fully justifying the approach undertaken (Welch et al, 2011). The co-authors of this current study undertook efforts to address potential concerns in the research design, but encountered problems. One potential criticism of case study research is the failure to set a ‘boundary’ for the investigation in line with research such as Stake (1995). The boundary of this present investigation involves the perceptions of angel investors in New Zealand regarding their decision-making in funding new start-ups with specific reference to their evolving business models. As such, this directly influenced what Stake (1995) views as the ‘issues’ under investigation. Semi-structured interviews took place with 20 angel investors and a consideration of the sampling procedure, including theoretical saturation of data, follows later in this Methodology section.

A further criticism of case study research is that some studies do not gather rich data from multiple perspectives. Therefore, additional interviews were also undertaken with 3 managers in business incubators. This was important as they have regular dealings with entrepreneurs and investors and would be familiar with aspects of the business models employed that featured as a point of interest in this study. The incubator managers were able to offer their perspectives on certain entrepreneurs, their ventures (including business models) in an anonymous sense; also, perceptions of what had facilitated decision-making regarding funding.

Furthermore, secondary data gathering took place, where possible, for a further perspective. Collecting secondary data proved rather restricted via the angel investors due to the confidentiality of a good deal of the data, such as the names of entrepreneurs and/or the start-

ups. Incubator managers provided general secondary data on policies and practices. As such, the limited depth of data from multiple perspectives (albeit more than one perspective was collected) and the focus being on semi-structured interviews with angel investors, suggests that this current investigation is not ‘true’ case study research under established criteria (Welch et al, 2011). Consequently, the earlier mentioned label of ‘quasi-case study’ research appears more appropriate for this investigation or at least there needs to be a recognition that limitations exist; that is, no matter how hard the co-authors tried to obtain in-depth data from multiple perspectives.

Furthermore, criticism has arisen in case study research regarding the lack of detail in respect of the philosophical approach of the authors. This study is not a theory building or theory testing investigation given that certain literature exists on particular topics that underpin the research, but not in respect of answering the precise research question. As such, this study is a theory enhancement investigation, an issue of importance when guiding the analysis and discussed later in this section. The approach undertaken in this study largely followed an ‘interpretivist’ perspective drawing on quotes and the idea was to be non-positivist, as an argument is not put forward involving objectivity (Tadajewski, 2010). The interviewers reached agreement with interviewees in respect of the meaning of key terms such as ‘business models’. Therefore, while practitioner discourse varied from academic terminology, the shared meanings ensured the later data analysis undertaken involved consistent understanding of concepts under investigation.

Sampling

Various directories exist in New Zealand such as on-line platforms that show profiles of angel investors (location, experience, range of funding, sector interest etc.). However, no single directory exists to establish the total population of angel investors. These investors tend to network and attend various meetings with incubators, universities plus sector events to discuss issues with other investors and to search for opportunities. The co-researchers utilized networks with incubator staff members that had an association with the university that employed one of the co-authors; namely, to facilitate access.

Angel investors can exhibit varying characteristics and are not a homogeneous group, such as the number of investments made, the total amount of investment, whether they specialise in certain sectors and so on. Angel investors in New Zealand often have their own website that provides limited background data on them such as the typical amount invested and sometimes sector-based interests. After reviewing the existing literature and discussing potential selection criteria with 3 angel investors known to the researchers, semi-structured interviews took place with angel investors that first, had made a least three investments as a somewhat arbitrary cut-off point to demonstrate multiple experiences. Second, had a total investment portfolio of over one million New Zealand dollars to demonstrate a reasonable, but still somewhat arbitrary financial commitment. Third, had a high-tech interest, the rationale being that they were likely to have dealt with start-ups exhibiting international potential (due to limited domestic demand) and were experienced in evaluating various types of business models. In reality, each of the angel investors in this study typically looked to have a digital component in management teams' business models due to the growing importance and potential scalability, but it is emphasised this was not part of the initial selection criteria. The researchers asked interviewees to recommend names of other angel investors; therefore, a snowball approach

took place regarding the sampling procedure. Reaching a point of theoretical saturation can be hard to establish (Beverland and Lindgreen, 2010); however, diseconomies of collecting new and significant data resulted after 20 semi-structured interviews with angel investors.

Data Collection Procedure

Ethics approval by the university employing one of the co-authors guided procedures undertaken including the use of an interview template. Nevertheless, the semi-structured nature of the interview procedure lasting up to 60 minutes allowed prompts were necessary. Interviews took place in 2015. Questions asked related primarily to the previously mentioned ‘issues’ under investigation in line with Stake (1995). Nevertheless, interviews commenced with questions involving background characteristics of the interviewees before those related to the focus of this investigation; namely issues related to their decision-making with a focus on business models.

The need to address the trustworthiness of the data collection procedure is important (Guba and Lincoln, 1994; Sinkovics et al, 2008). The co-authors took particular steps and first set the previously mentioned boundary of the study. Second, despite the problems in gaining ‘depth’ of data from multiple sources as mentioned earlier, triangulation of the data took place where possible (the term ‘triangulation’ is sometimes avoided in qualitative research). Third, procedures existed to manage the data, namely comparing interpretations of the collected data among the co-researchers to avoid individual bias; also, recognizing the extent of the application of findings to other research settings.

Analysis

This study undertook an ‘abductive’ approach (Timmermans and Tavory, 2012) going back and forth between the data and existing literature that produced inferences as patterns emerged. Although this study reflects **certain** guidelines suggested by Stake (1995) as previously described, the work of Yin (2009) also underpins some of the methodological approach undertaken. At first sight, this mixed approach is somewhat contrary to the guidelines of case study research (Welch et al, 2011). Alternatively, Sinkovics and Alfoldi (2012) highlight that qualitative research is sometimes presented in a linear manner suggesting a predictable process and deductive reasoning whereas in reality it can be iterative.

Within and across case comparison took place in respect of the transcripts arising from recordings with the angel investors; that is, the first with the second and so on and then in overall terms in arriving at a more generalized understanding of ‘issues’ across interviewees. **As such, this was broadly consistent with the literal replication approach described by Yin (2009); that is, establishing the extent to which the cases corroborate each other.** Comparisons also took place with that of the incubator managers and the limited secondary data that existed (other than published academic studies that had already underpinned the study conceptually). Despite the cross-case comparison that is in line with Yin (2009), consistent with Stake (1995), was “particularization” as the co-researchers took account of the context, narratives and personal engagement undertaken. ‘Bracketing’ took place, namely in respect of quotes to use the interviewees’ own practitioner terminology and voice (Appendix 1). **All of the interviewees discussed the second order themes in Appendix 1 establishing consistency within the collected data.**

From the large amount of data such as the examples provided in Appendix 1, coding took place around first order concepts, second order themes and aggregate dimensions (Gioia et al, 2013). Specifically, quotes could be identifiable with second order themes and likewise narrowed down to a further higher aggregate level of dimensions. Appendix 2 provides a partial picture that draws on certain quotes consistent with Appendix 1 in a format to demonstrate analytical rigour and help address the notion of “credibility” (Morrow, 2005). Discussion follows in more detail in the Findings section.

Findings

To help avoid this section appearing descriptive in its summary of the key findings, reference is worthwhile to the ‘abductive’ considerations of the Methodology section in respect of the approach undertaken. Consequently, the derivation of second order themes influencing the aggregated themes in Appendix 2 are somewhat subjective in the sense that the analysis indicated angel investors considered these as differentiated factors in their own right, but the underpinning literature views some as related. For example, the literature suggests that the role of the international entrepreneur and his/her team are to some extent ‘key resources’ within a business model, likewise angel investors are ‘key partners’; hence, should not be second order themes in their own right.

Furthermore, dotted arrows could link paths that are different to the existing solid arrows in Appendix 2. This is because in some respects second order themes have a more direct link to a particular aggregated theme, but also a tangential link to the other aggregated theme. For example, the environment affects the decision for internationalization to occur rapidly due to the limited domestic market and hence is part of predictive criteria in decision-making.

Alternatively, angel investors potentially joining with co-investors overseas and influencing the strategies of management teams is part of control criteria in decision-making. Consideration of such issues follow in the sub-sections within the Findings section to elaborate on these points. In fact, if this were a quantitative study, the role of certain issues such as the ‘environment’ may be down-played and feature as a control variable as opposed to in this current qualitative study that views all aggregated second order themes as important; that is, as perceived by all the interviewees.

Environment

The first key theme related to the ecosystem under investigation. This was important as the limited New Zealand market meant that angel investors looked for opportunities that were scalable internationally otherwise risks/rewards under other circumstances would be restricted to the limited domestic potential. As one interviewee pointed out: “in a country with more sheep than people I am only interested in investing in something that has scope outside of New Zealand”.

Furthermore, angel investors personally knew, or at least knew of, other investors locally and importantly to some extent overseas. They also communicated with each other to varying degrees and as such were typically aware of entrepreneurs and their technology in start-ups that were pitching for investment. This meant that they were largely aware relatively soon after entrepreneurs’ ideation (idea generation) had taken place about disruptive or incremental innovation that was being developed. This was not least because entrepreneurs turned down by one angel investor would likely proceed to pitch to another or they might pitch to more than one at the same time.

Turning to another feature of networks, namely those overseas, angel investors had various potential partners in the sense they would offset risk by sharing investment in certain circumstances. Although shared investment occurred in the New Zealand context, this extended to partners based overseas that in practitioner discourse were referred to in terms such as ‘Super Angels’ through to ‘co-investors’. Not only would they offset the monetary risk of a potential failed investment but also allowed network experience to be capitalized upon where necessary and especially in lead markets like the US where some partners were based; for example, around Silicon Valley.

In fact, investment partners overseas could facilitate entrepreneurs opening sales offices as local bases in key places and not least around Silicon Valley. This added both prediction and control to decision-making since pitches would need to demonstrate scalability, but also the ability for an entrepreneur and/or management teams to work with investors domestically and probably overseas as well, who may heavily influence business models over time. As one interviewee commented: “I will only invest to a point and then look to bring in partners not just for the extra funding but so they can bring in their networks and experience”. The ability to work with an entrepreneur and/or management team links with the next two points that are considered together to avoid repetition.

International Entrepreneur and Team

The second and third key themes related to considerations associated with the relationship between the entrepreneur and their management team respectively; for example, what background do they have with the technology in the pitch, experience with a prior start-up, plus sector experience more broadly? Specific issues involve first, if they possess the passion to move things forward. Second, the resilience and perseverance needed over time. Third, the

vision to make things scalable internationally. Fourth, the ability to demonstrate learning and importantly what exactly that learning involved. Fifth, could they work with each other and manage dominance (and a legal agreement signed). Sixth, what growth plans existed. Seventh, could they work with investor and indeed did the investor like them? Nevertheless, as one interviewee noted: “I have to be able to work with them (the team) as I become one of them (team member), but they have to take the lead from me”.

A consideration of the dynamics of the entrepreneur and the team was especially important given that investors noted a potential skill shortage in the major cities that had boosted salaries (unless an equity share was part of the remuneration package). This consideration once again shows the link between themes in the analysis as the context of the environment was important. Consequently, as one interviewee noted vis-à-vis certain larger ecosystems that the investor was familiar with: “there can be a limited pool to draw from in order to form a team in a start-up”.

There was nevertheless a range of partnerships that entrepreneurs could draw upon to overcome, to a certain extent, skill shortages such as advice from staff employed in incubators through to universities. Angel investors were ready to point out that for some entrepreneurs, prior learning and utilization of support networks was often not apparent in their pitches. This was despite investors suggesting that there are advantages for these technology-based firms due, for example, to growth as a tech hub (especially in the capital city) and the support offered by agencies. Consequently, a mixture of prediction and control was apparent in that an investor needed to be predict that the correct **growth**-oriented entrepreneur and team was in place or could grow to fulfil aspirations. Additionally, that the investor could exhibit a degree of control by becoming part of the management team.

Opportunity Assessment

The fourth and fifth key themes, while different, had clear relationships with earlier points, the first relating to opportunity assessment. In pitches, prediction was important since aspects of both forecasting and research in the ideation stage had not always turned into an adequate idea validation stage for certain entrepreneurs. For example, angel investors would want to know the basis for forecasts plus whom had the entrepreneurs and/or **management** teams spoken to and what evidence of commitment as opposed to interest had they received. One interviewee mentioned that: “it is easy for potential customers to verbally suggest they were interested in an idea and possibly not want to be rude, but showing their commitment was different”. In convincing investors with respect to risk/reward decisions, examples provided from interviewees included the issue: had entrepreneurs created something to validate their ideas such as a mock landing page enabling customers to leave email sign-ups for interest as a stated commitment to purchase? This extended to lean start-up principles, for example, what had entrepreneurs spent money on such as a MVP for testing and if so with whom and what pivoting had taken place resulting from the learning? Due diligence in supporting data provided was **also** important for all of the interviewees.

Adding value was important in opportunity assessment. A common theme highlighted **by interviewees was** that a management team think a customer in a certain country has a particular problem or need, but testing may find they have a different problem/need and hence implementation was also important. There was a need to add value to customers in various product-markets in a potentially different way and simply trying to replicate experiences in prior employment may not necessarily work in implementation strategies. Nevertheless, practitioner discourse varied such as “differentiation” (**rather than ‘value proposition’**) and similar. Taking on board what existing competition may do in retaliation was also important

in any potential implementation process and hence as one interviewee commented: “could an attractive niche be targeted; if so, could dominance (over competition) there subsequently make the firm an attractive potential acquisition target?” Aspects of control also featured in risks/rewards assessment of opportunities. The earlier points meant it might take a while to get a product to a market and investment would not happen quickly; that is, be a staged process through funding rounds. Consequently, targets needed reaching in order to get the next round of funding.

Business Model

The interviews indicated that in all likelihood, angel investors’ decision-making takes account of an evolving business model based on validation that features some of the earlier considerations in this section of the paper. To minimize repetition from earlier points it is useful to provide specific examples mentioned by interviewees. An investor gave an example where personal frustration had been the motivator for the start-up process in one firm whose team have been involved with the design of apps for solutions that had frustrated members of the team. To demonstrate the interplay between the value proposition and customer segment facets of Figure 1, the investor proceeded to suggest that personal frustration only takes an entrepreneur/team so far and to be scalable the solution to the personal pain or frustration needs to be faced by enough customers so the business is profitable. Another example related to a different firm, this time in the cyber security sector that is capitalising on what is a bigger potential issue or problem for likely customers internationally. Pivoting had taken place based on elements of an evolving business model to account for the feedback from particular overseas customers.

Another example provided by an investor involved a firm whose management team recognised that better design of systems was important to meet the needs of respective firms' target customers and so involving customers at the heart of their process of testing a business model was a winning strategy to secure funding. Validation went through a series of steps but the key thing involved asking the correct people and this was important when targeting organizations not consumers. This had ranged from the end user through to others that played particular roles, like who would make the decisions, who might influence this technology, and more important, finding out who might stop orders being placed.

A different investor highlighted an example related to other aspects of Figure 1 and suggested that in minimising costs, some entrepreneurs test a business model in the local market and pivot as they think internationally. An example the investor provided involved a start-up that initially targeted boutique firms in New Zealand and learnt what worked, but the value proposition also became attractive to larger firms. It started looking to expand internationally but needed to change its business model to become scalable and not least recruiting new staff as a key resource but also a cost. That provided a problem as finding the necessary skill made hiring not as easy as that in some other sectors.

One investor discussed a firm linked to the farming sector as an example of a local venture that is succeeding by leveraging off another completely different sector; however, to grow and be sustainable it must break out and go international. The investor highlighted that it is easier to collect data and operate in an existing market; however, if regulation changes then so might a business model and this is especially important for an under-resourced firm whose management team is also looking to internationalize for scalability purposes. That would mean changing its business model and not least finding new customers, partners, changing its

cost structure; in other words, a large operating shift to secure the next round of funding. The investor highlighted that the validation process would establish the most appropriate channels and nature of customer relationships across particular markets. In short, aspects of both prediction and control featured as important among **all** interviewees' examples.

Prominent firms that seem to be in the news were highlighted by each of the investors as potential role models for entrepreneurial start-ups such as in cloud software or auction sites, but investors equally noted that getting the business model right is key to securing funding as risks/rewards need to be balanced. The abductive analysis found that consistent with the literature there was a key risk/reward consideration between the technology; that is, 'can we do it', in comparison to the perceived needs of the market, namely 'should we do it'. Therefore, in funding decisions the 'burn rate' was important in respect of identifying and starting to exploit customer segments before funds dried up otherwise a start-up would not get off the ground.

Discussion

In revisiting the objective of this study, this was to investigate angel investors' decision-making in respect of taking an equity stake in a start-up firm with specific reference to facilitating an evolving business model. Although Davidsson (2015) suggests an opportunity is potentially an elusive concept and depends on individuals' perspectives. In the context of this paper, an entrepreneurial vision may only translate into an exploitable opportunity after investment and/or changes in a management team (Bell et al, 2004); furthermore, opportunity exploitation may need facilitating via an evolving business model (Osterwalder and Pigneur, 2010; Gassmann et al, 2014).

Conclusions

It is first concluded that as Blank (2013) suggests, ecosystems vary in respect of environmental conditions. Entrepreneurs typically have access to support organisations that act as key partners such as incubators as well as potential investors that have experience to assist at the start-up stage. This might extend to ‘Super Angels’ based overseas like in Silicon Valley who can share funding with local investors and draw on their expertise to facilitate growth. Therefore, investor support can link in ways that may help the development of entrepreneurs’ evolving business models consistent with Figure 1 developed by Osterwalder and Pigneur (2010).

However, the background of the entrepreneur and interaction with the team plus investor is important, and not least in respect of the objectives and strategies implemented (Bell et al, 2004, Crick and Spence, 2005). As part of their key resources, they run the risk of facing a skill shortage in certain ecosystems due to other firms hiring the existing pool of qualified candidates in addressing their key activities. This also affects the cost base of the business model due to rising costs of hiring from this limited pool of candidates unless an incentive such as an equity stake, as an alternative to wages, motivates the team.

Second, risks/rewards of opportunities need consideration, balanced with affordable losses. In certain niche sectors with limited worldwide demand there may be a need for entrepreneurs to exploit opportunities overseas rapidly (Bell et al, 2004; Crick and Spence, 2005; Jones et al, 2011). However, in the event management teams forego equity to investors including their networks based overseas, the investors will heavily influence decision-making. This issue is somewhat contrary to literature indicating the importance of an international mind-set (Autio

et al, 2000; Nummela et al, 2004) if management teams are not actually making internationalization decisions.

Investors' decision-making regarding internationalization may affect validation of the evolving business model employed (Onetti et al, 2012); for example, since as previously mentioned, the limited domestic market may mean the business model is not viable due to the restricted revenue streams unless it is scalable overseas. As such, the need for validating customer segments and testing a suitable value proposition cannot be underestimated, but this can be expensive irrespective of lean start-up principles. In line with Figure 1, the validation process would apply to various aspects of the business model such as to establish the most appropriate channels and nature of customer relationships that may vary across particular markets.

Third, in line the earlier points, the study indicates that the causation versus effectuation nature of angel investors' decision-making in respect of funding potential entrepreneurial start-ups is not dichotomous and aspects of both predictive and control criteria are used. This can mean that investment decisions may take place over some time unlike that typified in television shows like the Dragons Den and Shark Tank where immediate investment appears to exist. In this study, predictive criteria included the need for entrepreneurs and management teams to convince investors of what research had been undertaken and the basis of forecasts. Control criteria included the need for investors to become part of the management team and influence decision-making. This extended to rounds of investment that in certain cases extended to investors based overseas.

Debate has arisen over causation versus effectuation thinking (Arend et al, 2015; Read et al, 2016) including with investment **related to prediction versus control** (Wiltbank et al, 2009). Aspects of both are likely and the extent will vary in line with respective business models. All investment opportunities in this study needed to be scalable **indicating a degree of prediction**, plus individual angel investors had their own checklist (weighting factors even in a notional sense) of things they look for to support this vision; this suggested a degree of causation based thinking **with a degree of control**. Nevertheless, trade-offs in risks/rewards were also evident in the way certain issues may be weighted lower than others in **particular** cases suggesting effectuation based thinking.

Implications

In broad terms, without the ability of the entrepreneurs and management teams to convince the investors about key criteria based on causation based decision-making, investment is unlikely. However, investors are likely to balance risk/reward decisions in the context of their own perceptions of affordable losses against predictive and control factors including an evolving business model. In overall terms, these factors coming together should provide a realistic opportunity for an angel investor to evaluate; for example, an entrepreneur's pitch should not place an over optimistic value on the firm based on traction gained to date balanced with future potential. Moreover, an entrepreneur should try to pitch to an angel investor who can add value other than funds such as their experience and networks (based on their past and present portfolio of investments) and links with other investors possibly overseas. Nevertheless, a problem for angel investors is to know when to cut their losses and exit investment decisions; that is, as opposed to working with management teams and putting more time and money into building a business. Specific implications arise from this study.

First, entrepreneurs in particular countries are unlikely to get past funding rounds without an early commitment to generate revenue across national borders due to a limited domestic market. Second, the international experience, mindset and collegiate nature of the entrepreneur and management team is important. Third, together with resources and capabilities, this collective mindset needs to translate into an identified ‘viable’ international opportunity that will influence decision-making in respect of risks/rewards in the funding decision. Fourth, validation is important; hence, this will underpin an evolving business model. Fifth, management teams need to be aware that foregoing equity will result in a loss of control in decision-making, but not taking on the funding, experience and networks of investors may mean they cannot exploit identified opportunities.

In short, many start-ups fail or at the very least do not get the traction and scalability that international entrepreneurs hope for (Blank, 2013). Investors are unlikely to make quick decisions based on a short pitch unless it is very poor; angel investors are likely to work with or get to know management teams before investing in a start-up presenting a potential ‘opportunity’. Furthermore, due diligence will be undertaken. Investment is likely to be phased; that is, within funding rounds against targets, that will include identifying **scalable** opportunities and an evolving business model to exploit them.

Limitations and Future Research

This study is not without limitations and not least in respect of first the sample size and second, the single country context. Like a number of countries, New Zealand has its own ecosystem (made up of several ecosystems across the major cities), but has relatively limited domestic demand for many products and as a differentiating point is somewhat geographically

remote. Consequently, the findings may not be representative of angel investors' attitudes elsewhere such as established ecosystems in countries with a large domestic market. Additionally, the angel investors had a focus on high-technology start-ups; entrepreneurs needed to demonstrate rapid **scalable** potential that might not be the same for other products and services.

It therefore offers a research platform on which studies can more fully understand the nature of 'opportunities' (Davidsson, 2015; Muzychenko and Liesch, 2015) from different stakeholders' perspectives. Understanding how the pursuit of opportunities varies across categories of individuals helps provide a 'micro-foundations' approach (Barney and Felin, 2013), since this study focused on investors' perspectives. Future research across sectors and countries can address the evolving business models adopted by entrepreneurs (Osterwalder and Pigneur, 2010; Blank, 2013); that led to some gaining traction; what pivoting was undertaken to make them scalable (Ries, 2011); plus the nature of risk/reward decision-making (Sarasvathy, 2001; Wiltbank et al, 2009).

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Appendix 1: Examples of Angel Investors' Perceptions: Deriving Second Order Themes

Theme and Sub-Themes	Example of Quote
Second Order Theme 1: Environment	
The nature of eco-systems vary	“We have a lot of creative people here in New Zealand using various digital technologies and obvious examples I can think of is business software and games designers. I know Wellington has been branded as a creative capital but that’s not to say everyone who pitches an idea is also business savvy. In my experience investors here are more risk averse than some other places I can think of.”
	“You have to understand that here in New Zealand funding is probably only likely up to a point and investors are likely to tap into networks overseas for future rounds.”
In small networks, communication takes place among Angel Investors	“It amazes me that people underestimate the networks of investors and especially those likely to be interested in this type of technology. They think we don’t talk to one another but we are all looking for opportunities that fit into our portfolio. Word gets around about a bad pitch.”
Second Order Theme 2: International Entrepreneur	
Passion combined with background	“Passion is important but also a track record.”
Resilience/perseverance	“What some inexperienced people don’t realize is that many firms will not make a profit for several years. It is costly getting a business ready to sell overseas. You have to be able to demonstrate that you will stay the distance.”
International mind-set	“I look to find out objectives like are they looking to grow or sell the business. I find out quickly if they realize the need to go international quickly to make money.”
Learning	“You can’t beat getting your hands dirty. I look for someone who has tried and learned but I am not going to back them in one failure after another.”
Ability to work with investor	“I need to work with someone for a while, see if they can take advice and be able to get on with them before I invest big-time.”
Likeability	“Would I back someone I don’t like – no!...Why would I?” The interviewee suggests they might still make money despite not liking the entrepreneur.

	“No – it’s too much hassle.”
Second Order Theme 3: Team	
Collegiality, resources (including networks) and capabilities	“You need to be able to demonstrate that a team can work well together and what each person can bring to the table. What have they invested? Do they know the industry? How? Do any of them have international experience, have contacts - I could go on!”
Link with investor	“An entrepreneur has to be able to eat a s**t sandwich because from above the investor will be on their back and from below there is often in-fighting among the team. I often see morale breaking down. Investors become part of the team and bring more to the table than just money.”
Teamwork and uncertainty	“You have to prove you can get your team focused when in reality you may wake up day after day thinking what problem do I need to solve today?”
Managing dominance	“You can’t get derailed by an engineer who thinks better coding will solve everything - the team has to work together and bring different skills.”
Team growth	“You’re not going to get a lifestyle business funded and it’s got to be scalable. Premature scaling is also bad like if someone thinks a start-up needs someone just in HR, Finance etc. like a large firm, it’s too early.”
Legal arrangement	“Has a partnership agreement been signed in case things go wrong?”
Second Order Theme 4: Opportunity Assessment	
Forecasting profitable international opportunities	“I hear the word ‘opportunity’ used a lot but to who? To me as an investor or to them asking for money? So how do we make money out of it? In New Zealand you have to think internationally from the start!”
	“Sometimes I hear pitches where the firm is totally over-valued and no thought has been given to market potential, you know, size of the market internationally and some realistic assessment of how much can be captured.”
Value	“An opportunity usually comes down to value and can you reduce some hassle or offer something

	positive to a customer to be different.”...“A fancy website with the latest digital technology is a waste of time if the offering is not viable”.
Risks/rewards	“It’s a numbers game and many start-ups fail. Some investors think big and lose big but hope the bigger wins will come from those that succeed overseas.”
	“I spread my risks and invest in rounds, not all at once in one firm, but on top of that invest in a number of firms at once.”
	“Often with start-ups if things go wrong they have no assets and they probably rent space, have a computer and little else. What little is left will probably go to the bank first as they have a preference on debts.”
	“If someone comes with evidence of high margins, high international growth and low risk any Angel Investor will snap them up, but how many have actually spoken to a customer? How many have a MVP (minimum viable product), or done any testing? Of course this is even harder with overseas customers!”
Market research (asking real customers overseas)	“Sometimes people tell you it’s a great idea but how do you know customers would buy it”, you know, what have you actually asked them? It’s typically engineers that think they have a great product but have they ever spoken to a customer? I often ask them - what if you’re wrong. How do you know what they want in overseas markets if you’ve never even spoken to someone in New Zealand?”
	“Some come to me and say they’ve tested an idea but then you find out who and it’s their mates. Is it a real problem or a solution looking for a problem? How do I know the same issue is important overseas? Which channels will they use, have they even thought of that?”
Implementation	“I want to know what the money will be spent on and if it’s just advertising that once it’s gone that’s it, and let me say it is almost too early to advertise anyway, then I won’t invest. Another thing is patents because depending where you file overseas the firm probably won’t be able to afford to fight a legal case if the idea is used by competitors.”

Second Order Theme 5: Evolving Business Model	
International business model design	<p>“I know that the local incubator I work with gets people on training courses to think about their business model and how to make pitches. What is important is that money needs to be made and that means selling overseas early on.”</p> <p>“There is sometimes a great deal of thought given to how technically brilliant the idea is and little thought how to get it to the market, create value, and start generating revenue.”</p>
Ability to pivot strategies	<p>“The business model must be adaptable and the people involved – what if they are told by customers the idea is ok but the way you are going about it is c**p? In fact, in my experience, the initial approach is often likely to be wrong.”</p>
Should not replicate large firm experience in business model	<p>“Typically engineers that worked for a larger firm come to me and think their start-up will just be a small version of their former firm and they have no idea how to operate and adapt.”</p>
Competitors	<p>“What really p*****s me off is when someone tells me this is such a great idea it has no competitors. May be not here but certainly overseas. Barriers to entry with the Internet are far lower than when I started working. It comes down to selling. If you cannot sell or should I say generate revenue, you have no business.”</p>

Figure 1: Business Model Canvas (Osterwalder and Pigneur, 2010)

The canvas is in the format used by Strategyzer (a firm run by Osterwalder) but is essentially the same as Osterwalder and Pigneur (2010).

Appendix 2. Examples from the Qualitative Data Analysis