THE COMPREHENSIVE AUSTRALIAN STUDY OF ENTREPRENEURIAL EMERGENCE (CAUSEE) HIGH POTENTIAL NASCENT ENTREPRENEURS: SOME PRELIMINARY FINDINGS

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ABSTRACT

The *Comprehensive Australian Study of Entrepreneurial Emergence* (CAUSEE) is the first Australian research to employ the large scale, longitudinal research originally developed for the *Panel Study of Entrepreneurial Dynamics* (PSED) (Reynolds, 2007.) In recognition of PSED-type random samples being dominated by imitative low potential ventures (non "high potentials": non HP), CAUSEE employed a methodology using novel criteria to develop theoretically representative samples of the "high potential" (HP) firms.

This paper presents preliminary results of the CAUSEE research. Comparing HPs with other firms, HPs spend a longer time in gestation, are more often created by teams, are male dominated, have higer use of outside advisors, venture capital and angel investment and exhibit more internationalisation activity.

INTRODUCTION

All firm start ups do not contribute uniformly within an economy. Some new ventures are more important than others in terms of their contribution and growth within business environments. Birch (1997) found that truly significant contributions to the economy are made by the fast growing HP "gazelle'' firms rather than other less ambitious or capable firms. This second category of firm is often imitative type firms and includes "Mom and Pop" lifestyle businesses that start small and remain intendedly small (Cooper 1981; Timmons, 1986**;** Cooper et al 2004.) Further, Gallagher and Miller (1991) studied the formation and performance of 2,600 new small firms in two regions of U.K. and based on performance they classified two cohorts of firms, high performers (high flyers) and low performers (sinkers.) The researchers argue (Gallagher and Miller 1991:100): "It is the high flying firms which create the jobs. The remarkable effect of a modest number of high flying firms on employment and turnover has been very clearly shown." Furthermore, media, research policy, government agenda and industry tend to focus on the high achievers- those highly successful entrepreneurs (e.g. Richard Branson) or high impact firms or "gazelles" (Birch 1984) that have the opportunity to make disproportionate contributions to the economy to innovation, job creation and regional economic well-being (Acs and Audretsch 1990; Davidsson, Lindmark et al. 1994; Reynolds 1994; Davidsson, Lindmark et al. 1998; Acs and Mueller 2008.)

There are thus good reasons to learn more about this important category of firm. However, because of their small numbers and the problem of identifying them at an early stage the amount of systematic, research-based knowledge about them is limited. This is particularly true for their early stages of development. Therefore, what we aim to contribute in this paper is a descriptive analysis of emerging and young high potential businesses in Australia. To this end we use data from the *Comprehensive Australian Study of Entrepreneurial Emergence* (CAUSEE.)

LITERATURE REVIEW

When studying HP nascent or very young firms, the first challenge becomes the definition of what "high potentials" are and the application of this term to specific industries. Research in nascent entrepreneurship has evolved whereby high technology or high innovation is often synonymous with HP firms. Research has evaluated innovative vs. imitative firms (Samuelsson 2001), high technology vs. moderate and low technology ventures (Liao and Welsch 2003; Gans and Stern 2000), knowledge intensive firms (Giarmartino, McDougall and Bird (1993) and high growth potential firms (Davidsson and Henrekson 2002; Hoang and Antoncic 2003.) Crick and Spence (2005) argue that different definitions exist within these classifications (e.g. high technology). Further, HP research often tends to focus on specific industries i.e. high technology (e.g. software, biotechnology).

Increasing focus has shifted towards knowledge intensive research based start ups and the evaluation of high technology firms (Heirman and Clarysse 2004.) These research firms have been found to contribute an important role in bringing new technologies to the market (Christensen 1997.) However, contrary to anecdotal evidence, successful business comes from a variety of industries and circumstances (Henrekson and Johnsson 2008) and research indicates rapid growth firms can be found in labour as well as knowledge intensive industries, and in both manufacturing and service industries (Davidsson and Delmar 1997, Wiklund 1998.) Research in HP firms often misses those novel innovative firms in less dynamic, mature industries. This research seeks to overcome these issues through the development of the HP judgement sample of firms.

Two conceptual dimensions can be identified when defining HP young and nascent firms. The first dimension deals with the expectations of the entrepreneur and future growth of the firm. Literature identifies expectations of the entrepreneur and future growth of the firm. This literature ties in with expectations of potential returns, including high expectation entrepreneurs (Timmons 1986) and application to different processes including internationalisation (Timmons 1986; Bloodgood et al 1996) and innovation and economic growth (Wong and Autio 2005.) It also has links with entrepreneurial cognition and overconfidence (Koellinger, Minniti and Schade 2007; Wickham 2006.)

The second dimension is aligned with strategy and resource based view of the firm (RBV) literature (Barney 1991.) It argues there are a combination of resources and their application to specific markets through venture creation processes that lead to specific above average outcomes. Explicit in this approach is the focus on performance/growth and firm outcomes – e.g. financial outcomes seen through disproportionate higher levels of sales or employment. In this approach, HPs are those firms that possess valuable, unique, nonsubstitutional resources that assist the firm to develop distinct strategic competitive advantages from which to to leverage further growth and profitability (Eisenhardt and Martin 2000.) This literature concentrates on young firms that have produced tangible outcomes and consider high impact firms and themes of innovation, occupational choice, human capital, venture capital, endogenous growth, knowledge spillovers, capital markets, entrepreneurial rents, and individual traits. (Acs 2008.)

This research defines new "high-potential," ventures as new entrepreneurial innovative ventures with high aspirations and potential for high growth. This distinguishes them from those non HP businesses that start small and are likely to remain small (Timmons, 1986.) Non HP firms may either have low aspirations or low potential for high growth.

CAUSEE RESEARCH DESIGN

Before outlining the methodology developed for this HP research, it is first necessary to explain the broader CAUSEE methodological context in which it sits. With close synergies with the PSED (Reynolds et al 1994, Reynolds, 2007; Reynolds and Curtin, 2008) CAUSEE aims to understand the relationships and the interactions of the venture creation process, resources, the opportunity, the environment and resulting firm outcomes (ref figure 1).

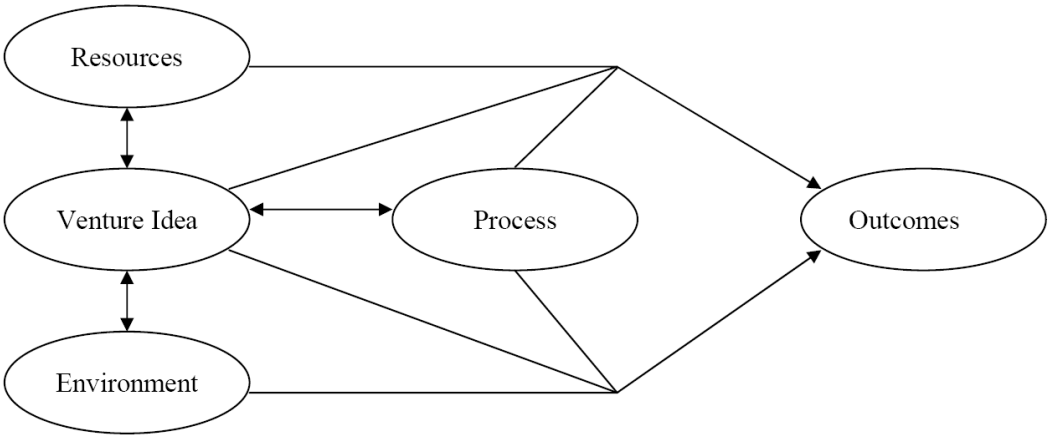

Figure 1. **The components of the CAUSEE research**.

While relying on data collected from (one of) the founder(s), CAUSEE seeks to evaluate these processes at the firm level. This is why no "box" labelled "Individual" appears in Figure 1 – from a firm level perspective the knowledge and motivation of the founder(s) represents resources at the venture's disposal.

Therefore, CAUSEE positions the founders and founding teams as one of the important *resources* that determine the fate of the venture. This is unlike much research in venture creation that evaluates the individual or founding teams (Liao and Welsch 2004; Shane and Venkataraman 2000; Shaver 1995.)

METHOD

The main sample

After comprehensive questionnaire development work, a version of the survey instrument was pre-tested on a convenience sample of 71 nascent and young businesses in Nov.-Dec., 2006. After analysis, re-design, programming and internal testing a full scale pilot test with computer aided telephone interviewing (CATI) using a random digit dialling (RDD) procedure was commissioned to TNS and undertaken in April-May, 2007. This pilot test included contact with some 1,810 Australian households for a yield of 78 nascent- or young firm founders who also completed the full interview [1] After further testing and re-design the large scale screening for eligible cases started in early July 2007 and continued into April, 2008. In the main study, a total of 28,383 adults (with equal male/female representation) in the randomly selected households completed a screening interview. In order to qualify for inclusion as NF or YF spokesperson the respondent first had to answer affirmatively to at least one of the following questions:

1. Are you, alone or with others, currently trying to start a new business, including any self-employment or selling any goods or services to others?
2. Are you, alone or with others, currently trying to start a new business or a new venture for your employer, an effort that is part of your normal work?
3. Are you, alone or with others currently the owner of a business you help manage, including self-employment or selling any goods or services to others?

Both categories of respondents also had to confirm that they were (or intended to be) owners or part owners of the (emerging) firm. Further, for the NF category they had to confirm they had undertaken some concrete "start-up behaviour" such as looking for equipment or a location, organizing a start-up team, and working on a business plan, etc., within the last 12 months. Otherwise, or else they were deemed under qualified. Conversely, if they confirmed that the firm's revenues had exceeded expenses for six of the last 12 months they were deemed over qualified (and instead tested for eligibility in the YF category). Finally, the preliminary YF cases were retained if they confirmed that they started "trading in the market doing the type of business you are currently doing" in 2004 or later.

In the random sample, this process yielded 977 Nascent Firms (3.4%) and 1,011 Young Firms (3.6%). These were directed to the full length interview (40-60 minutes) either directly following the screener or later by appointment. The full length interviews were completed by 594 NF and 514 YF cases to be used in our analyses.

The HP over sample

Traditionally, finding nascent firms in sufficient quantities has been a daunting challenge. To identify "high potential" businesses at an early stage for the purpose of comparing their characteristics with "regular" start-ups is a very challenging task Aldrich (1999.) As previously mentioned, there is no agreed-upon definition of "high potential" businesses (Crick and Spence 2005.) Second, by any meaningful definition they are rare, so obtaining a sizeable sample of them is even more difficult than is sampling "regular" start-ups at an early stage (before they appear in any registers) (Reynolds, 1997;Wong et al 2005.) A random sample of start-ups will, of course, include a proportion of HP start-ups; however, when a sufficiently demanding HP definition is employed that proportion is likely to be small Reynolds and Miller (1992.) Obtaining a large enough random sample of such entities may therefore be impossible or prohibitive in terms of costs. On the other hand, if they are identified through a single type of source (e.g., business incubators; business angel networks) the sample would almost certainly be biased compared to the theoretical category the study intends to investigate. Third, no single criterion (e.g., founders' track record; booming industry; being highly innovative) can with satisfactory accuracy determine whether or not a start-up has "high potential" (Gundry and Welsch 2001.)

Fourth, there is no natural dividing line between HP and non-HP businesses; in order to delineate such groups an arbitrary cut-off has to be introduced in what is truly a continuous distribution of varying potential. Hence, there is no "right" or "perfect" way to obtain a group of HP start-ups. No matter how it is done, a proportion of those defined as HPs will fail or show rather pedestrian development while some start-ups not defined as HPs will become successful and significant business entities. However, early definition of a group of HPs that eventually turn out to be markedly over represented among high performers should be possible.

Recognising some of the challenges with this cohort, we sought to identify a diverse sample of HP nascent firms. A variety of techniques were also employed to develop a multi level dataset of sources to develop leads and firm details. This dataset was generated from a variety of websites including major stakeholders including the Federal and State Governments, Australian Chamber of Commerce, University Commercialisation Offices, Patent and Trademark Attorneys, Government Awards and Industry Awards in Entrepreneurship and Innovation, Industry lead associations, Venture Capital Association, innovation directories including Australian Technology Showcase, Business and Entrepreneurs Magazines including BRW and Anthill. The use of many different sources serves to minimise any particular bias in the sample.

In total, over 480 industry association, government and award sources were generated in this process. Of these, 74 discrete sources generated HPs that fulfilled the criteria. The "suspected" HP cases were subjected to an expanded, multiple customised screening based on prior literature using a combination of criteria relating to:

1. *Human capital* (education, management experience, and start-up experience)
2. A*spirations* (growth orientation)
3. *Technological sophistication and novelty* (innovation; IP protection); and being in a "growth friendly" *industry*

A compensatory scoring system was developed such that no particular characteristic was necessary for HP status whereas a predefined total score had to be reached across the dimensions. Cases that reached this pre-defined total score were included in the study and subjected to the full length interview. The criteria for distinguishing between NF and YF were the same as in the random sample. In the oversample, 1116 firms were contacted as HP cases. 331 cases agreed to participate in the screener, with 279 firms (134 nascents, and 140 young firms) successfully passing the HP criteria. 222 Firms (108 Nascents and 113 Young firms) completed the full interview.

The HP and non HP cases contrasted in this report

One possible approach for analysing the distinctive characteristics of HP start-ups would be to compare the over sample just discussed with the random sample. However, such an approach would have certain disadvantages. First, as noted above a random sample will include a proportion of cases that also satisfy our HP criteria. This would blur the theoretical categories being compared. Second, preliminary analyses suggested this proportion was higher than expected (approx. 20%). This indicates that the original cut-off for HP eligibility may have been too lenient.

For the purpose of this report we decided to follow a slightly different approach. We raised the cut-off so that no more than approximately 10 percent of the random sample would reach it. We then combined the over sample cases that satisfied this stricter criterion (135 out of 222) with the randomly selected cases that also satisfied the stricter criterion (127 out of 1186) resulting in a total HP sample of 262 cases. Of the HPs, 155 are nascent firms and the remaining 107 are Young Firms. These will be contrasted with "regular" (or non-HP) start-ups, that is, those 1059 cases in the random sample that do not fulfill HP criteria.

Further preliminary analyses revealed that although the HPs drawn from the random and judgment samples both fulfill the same minimum criteria, the sub-group drawn from the judgment sample is in many respects more "distinct" or "extreme" than their randomly selected counterparts. However, by combining the two HP subgroups we argue we obtain a theoretically meaningful sample of HPs. This sample will be compared to a likewise theoretically meaningful group of non-HPs. While HP vs. non-HP differences are often smaller when only cases from the random sample are compared the differences we comment on are still substantial in such a comparison unless otherwise stated.

Using non-randomly sampled cases and multiple criteria for HP definition has some negative consequences. First, HPs will be different by definition from non-HP start-ups on all criteria included in the HP screener. Therefore, we report such differences as "sample descriptions" rather than as "findings". We will also be cautious with differences regarding characteristics that were not included as HP screener criteria but which more or less by necessity are correlated with them. Second, both this dependence on sampling criteria and the inclusion of non-randomly sampled cases make statistical tests ambiguous. Although we have employed such testing to make sure we do not over interpret results that could easily have occurred by chance we are aware that conditions for strict applicability of statistical inference are not fulfilled.

Importantly, CAUSEE employs the firm or "venture" as the focal level of analysis. This means, for example, that years of experience is calculated across all founders for team start-ups, and that the presence of this or that education or experience based knowledge means that any member of the founding team has it; not necessarily the respondent.

Table 1. Sample description

	Nascent Firms (NF)		*Young Firms (YF)*	
	High Potential	*Other*	*High Potential*	*Other*
Gender (female)	19	48	19	44
Uni education (1 or more of owners have), %	65	44	75	41
Prior start-up experience, %	82	53	83	43
Management experience, (median yrs)	20	10	20	10
Parent's Owned a Business	62	59	67	54
Expected revenue in 5 years (median)	6,000,000	100,000	7,750,000	120,000
Exp. No. of employees in 5 yrs (med.)	20	2	20	2
Max growth pref. to manageable size, %	90	15	83	12
Sees R&D spending as major priority, %	77	40	80	22
Perceives firm as high-tech, %	66	26	69	24
Has applied for IP protection, %	48	6	57	9
Novelty in venture idea (12 pt. scale)	5.5	3.6	5.2	2.2
Industry: Manufacturing, %	23	7	16	4
Industry: Communications, %	8	4	9	4
Industry: Business consulting, %	10	8	18	14
Industry: Retailing, % (not criterion)	5	18	5	10

Table 1 reports some of the differences between HPs and other start-ups along those criteria that were used to define the groups. As can be seen, the HP group seems to have much more education, experience and technological sophistication. They also have much higher aspirations. The median values for expected future size may not impress everybody in an absolute sense, but in relation to other start-ups they are massive and the HP medians not being even higher reflects that very few businesses grow to significant size at young age. The fact that YFs tend to be more modest than NFs on several criteria suggests the HPs aspirations are over- rather than under stated.

Let us here also comment on a number of differences that are indirectly (and not fully deterministically) driven by the HP definition criteria. Although not an explicit criterion the HP group also has much more industry experience than non-HP start ups (median 20 vs. 8.5 years for NFs and 24 vs. 10 years for YFs; i.e., the median difference is even greater than for management experience). According to some previous research this may be a major contributor to their eventual success (Wagner, 2004). The YF vs. NF difference we find in our data is in line with that notion. The higher levels of education and experience also translate to a range of functional areas. HPs report much more experience in all functional fields (sales/marketing; finance/accounting; administration/human resource management; industry-specific product/service development and production/service delivery knowledge). Education-based knowledge is also higher for HPs, but not impressively so as regards sales/marketing and administration/HRM. Given the high proportion of manufacturing firms among the HPs it is hardly surprising that a much higher proportion in that category has a product rather than a service focus. Among HPs 68 percent of the NFs and 59 percent of the YFs (intend to) mainly sell products. The corresponding figures for non-HPs are 45 and 30 percent, respectively.

Given their other characteristics it is hardly surprising that more money has been invested in the HPs than in other start-ups. In about half of the cases (46% for NFs and 52% for YFs) the HPs have invested $100,000 or more so far. The corresponding shares for non-HPs are 9 and 16 percent, respectively. Although this result is *not* driven by sampling criteria it may not surprise that HPs have higher (intended) proportion of their sales generated online. Given the low proportion of retailers among HPs such a result is not a given, although it does turn out to be the case for NFs. Among nascent HPs the proportion intending to have at least half of their revenue generated via the Internet is 40 percent. The corresponding figure for nascent non-HPs is 24 percent. There is no HP vs. non-HP difference for YFs as regards online sales.

Having start-up experience also makes it likely (but not a logical necessity) to find a higher occurrence among HPs of the founders running other businesses in parallel with the current start-up. This is the case, and the difference is pronounced. The NF and YF proportions running at least one more business in parallel is 66 and 59 percent for HPs, versus only 29 and 21 percent for non-HPs.

While “regular” start-up activity is approaching gender neutrality (only slight under representation of women), “'high potential” start-ups are still male dominated. About 80% of our HP interviewees are male. In addition, for all founders there is a high incidence of having parents who also ran their own business, but this is even more pronounced among HP founders (67% vs. 57%). We have already noted that HP founders are more experienced. All these findings can be interpreted as HP start-ups requiring more experience, including role modelling/vicarious experience (provided by parents and others). As the female start-up prevalence has only recently approached that of men, currently there are relatively few experienced female entrepreneurs and role models.

Overall, the descriptive data suggest our criteria have led to the delineation of a sub-group of start-ups that is markedly different from other start-ups and which can with reasonable justification be labelled “high potential start-ups”.

RESULTS

Who starts high potential firms? Teams do!

Both in research and popular media, “the entrepreneur” was for long portrayed as something of an omnipotent, lone wolf. It therefore came as something of a surprise when the PSED research showed that 50 percent or more of “nascent entrepreneurs” in a random sample work in a team (Delmar & Davidsson, 2000; Ruef, Aldrich, & Carter, 2003.) However, this may also have led to a misconception in the other direction, namely that the type of team that dominates textbook expositions (e.g., Timmons, 1999) – the highly educated; functionally well balanced team with high growth aspirations – is a very common phenomenon empirically. Ruef et al. (2003) showed that a large proportion of “start-up teams” consist of romantic partners creating life style businesses and that a large proportion of the remainder does not conform to the textbook norm, either.

However, the founders of HP businesses in the CAUSEE data to a considerable extent do match the textbook image of entrepreneurial teams. The difference is particularly pronounced when the YF category is compared concerning the prevalence of teams consisting of the respondent plus members other that than the spouse (or *de facto* partner.) A full 69 percent of HP-YFs are founded by such teams, while only 13 percent of the non-HP young firms have that type of founding team. This is a very sizeable difference. By contrast, the proportion of spouse teams is low among HPs. Table 2 summarises some of the differences.

Table 2. Prevalence of team start-ups

	Nascent Firms (NF)		*Young Firms (YF)*	
	High Potential	*Other*	*High Potential*	*Other*
Started by a team rather than single founder, %	68	47	79	44
Started by non-spouse team, %	54	21	69	13
Started by spouse team, %	14	26	10	31

The fact that among HPs the team proportion is higher for NFs than for YFs may indicate that HPs started by teams are more likely to get operational and survive the first, critical years (Ensley Pearson and Amason 2002.) The higher incidence of teams among HPs is in part driven by the education and experience criteria for inclusion as HP. All else kept the same, a team will have more human capital than a single founder. However, the full magnitude of the group difference, and in particular the spouse-team vs. non-spouse team pattern, cannot be explained as an artefact of the sampling criteria.

How are high potential start-ups initiated?

It is commonly believed that business founders first decide that they want to go into business for themselves; that they want to start a company. They are then assumed to search for and evaluate several alternative business ideas before they settle for one, which they develop further and eventually create their business around. Bhave (1994) found that an alternative process was also common. In this second model it is a specific opportunity rather than a long nurtured dream that triggers the decision to found a firm. Consequently, no search for alternative business ideas is involved; either a start-up is attempted around the one, triggering opportunity or no start-up is attempted.

In a previous report we showed that CAUSEE data suggest the latter, "business idea as trigger" process is much more common than is the sequence where the decision to start a business comes first (Davidsson et al., 2008.) As shown in Table 3, somewhat surprisingly the HP founders *even more* emphasise the idea rather than the wish to start a business as the trigger. The difference to other firms is sizeable, especially for YFs.

Table 3. Trigger of start-up process

	Nascent Firms (NF)		*Young Firms (YF)*	
	High Potential	*Other*	*High Potential*	*Other*
The specific idea for the business came first	67	47	60	34
The decision to start a business came first	13	16	21	25
Both together	21	37	20	41

However, these results should be interpreted keeping in mind the high levels of experience and parallel running of other businesses of the HP founders. Bhave (1994) arguable sketches two routes for a previous non-entrepreneur to switch to self-employment. Some nurture a dream of running their own business; actively seek and evaluate opportunities for doing so, and eventually take the leap when they have found an attractive enough business opportunity. Others have no intention to become self-employed but drift into that when they stumble over an opportunity that makes this a logical career choice. The CAUSEE data seem to suggest that often neither of these apply for HP start-ups. Rather, we are dealing with experienced entrepreneurs who are not determined to start another business or actively looking for opportunities to do so. They may instead be fully occupied with other ventures or having intended to retire. However, when coming across an opportunity that appears attractive they are willing to give it a go. Importantly, if this interpretation is correct it also means that they will be quite willing to give it up if it does not seem to deliver on the initial promise (cf. Gimeno, Folta, Cooper, & Woo, 1997.) This is unlike novice founders of start-ups with lower potential who may cling to the not-so-promising start-up. Future waves of CAUSEE data collection will show whether HP founders are more prone to terminate the start-up attempt.

Perceived competitive advantages

Parts of the CAUSEE data collection takes the Resource-Based View (RBV) as its vantage point (see, e.g., Barney & Arikan, 2001.) This theoretical perspective holds that the key to competitive success lies in the creation, identification and exploitation of the firm's unique (and preferably sustainable) resource advantages.

Considering their larger infusions of human and financial capital it may be viewed as self-evident that HPs would report more perceived competitive advantages. However, for at least two reasons – one methodological and one substantive – such a result is not obvious. The methodological reason is that more experience founders – which HP founders are – may be more *realistic* about their advantages and disadvantages relative to competition and therefore report less exaggerated responses. The substantive reason is that even if HPs are better resourced they are also likely to operate in much tougher competitive environments, so relative to their competition their position could well be weaker than that of non-HP firms.

Table 4. Perceived resource advantages

	Nascent Firms (NF)		*Young Firms (YF)*	
	High Potential	*Other*	*High Potential*	*Other*
Overall average	4.2	4.0	4.1	3.9
Uniqueness of Produce / Service	4.7	4.3	4.6	4.0
Industry Knowledge	4.2	3.9	4.1	3.7
Marketing	3.6	3.3	3.7	3.3
Technical Expertise	4.3	4.0	4.2	3.9
Flexibility	4.5	4.4	4.5	4.3
Cost advantages	3.8	3.8	3.9	3.7
Use of Networks	4.0	4.0	3.9	3.7
Difficulty of other firms to copy key advantage	3.4	2.8	3.6	2.8
Difficulty to overcome key disadvantage	2.7	2.7	2.9	3.0

Note: All entries refer to group averages on 5-point scales.

As shown in Table 4, the HPs do report more resource advantages than do non-HPs. We may also note that the high averages indicate considerable optimism in both groups. Considering characteristics reported earlier it is not a surprise that HP founders report more advantages in terms of product uniqueness, industry knowledge and technical expertise. The marketing advantage is not surprising given the HPs reported marketing experience. However, considering that the competition may be large firms it is somewhat surprising that this perceived advantage is of similar magnitude as those others just reported. Conversely, flexibility (hardly a "resource" but possibly a source of competitive advantage) is a typical small/new firm advantage, but only for YFs is there a significant difference between HPs and non-HPs.

It should be noted that the reported differences of 0.2 to 0.5 on a five-point scale are statistically significant but substantively not very large. The modest differences may be due to HPs facing a tougher competitive environment, as argued above. This could explain the otherwise surprising (in the light of their greater experience and incidence of team start-ups) lack of difference for use of networks. That HPs do not rely primarily on cost advantages is hardly surprising. It may be noted, though, that at least one comprehensive study suggested that to maintain their success, innovative "first movers" need to develop cost advantages (Durand & Coeurderoy, 2001.)

As regards sustainability of advantage a large difference was found for the perceived degree of difficulty for other firms to imitate the focal firm's key advantage. However, this difference is to be expected considering the higher frequency of IP protection among HPs. There is no difference between HPs and non-HPs in the reported difficulty to overcome key disadvantages.

HP businesses take longer/are harder to get up and running

An important part of the CAUSEE questionnaire investigates what "gestation activities" have already been undertaken, and when. This information is available only for Nascent Firms because Young Firms would presumably have completed all relevant gestation activities. A comparison of between HPs and non-HPs for this package of questions is telling.

These results are reported in Table 5.

Table 5. Completion of gestation activities

	Nascent Firms (NF)	
Gestation Activity (% "yes")	*High Potential*	*Other*
Activities with higher completion rate for HPs		
Business formally registered	75	55
Legal form established	83	65
Marketing efforts commenced	65	50
Proprietary technology developed [HP criterion]	50	8
Applied for IP protection [HP criterion]	48	6
Prepared written business plan	54	23
Competitor analysis	81	64
Assessed market opportunity	87	62
Financial projections	72	43
Assessed regulatory requirements	75	60
Opened bank account	66	39
Sought external funding	39	16
Received external funding	31	11
Established supplier credit	32	22
Started work full time for venture (any founder)	67	35
Hired employee(s)	38	11
Retained accountant	70	45
Retained lawyer	56	12
Joined trade association (for this start-up)	25	16
Contacted assistance organisation (ditto)	59	32
Joined business network (ditto)	21	11
Business contactable via phone and/or email	84	73
Registered for ABN	74	66
Registered for GST	61	35
Registered for PAYG	32	15
Activities with lower or equal completion rate for HPs		
Product/service ready for sale	43	54
Purchased/leased major equipment/facilities	45	51
Received income	40	48
Attended business class (for this start-up)	49	47
Arranged liability insurance	36	31
Joined online business community	27	21

These results clearly show that HPs have on average completed more activities. To some extent this could be because more activities are relevant in their cases (cf. Liao & Welsch, 2003.) However, it definitely also reflects that they have been in the start-up process longer. Based on the "time stamping" of the activities, the nascent HPs have on average been in the process for 35.5 months while the non-HPs have been attempting the start-up for less than 22 months. This is a sizeable difference[2] At the same time, the data show that despite this the HPs have to a lesser extent reached those milestones that are, arguably, the most essential for reaching an operational stage: getting the product/service ready for sale, and generating income. The fact that despite having worked on the start-up for a longer period HPs do not have higher frequencies for acquisition of major equipment/facilities or arranging liability insurance is probably also related to not being ready for the market for quite some time yet. Some of the other non-differences may be due to HP founders having more prior experience.

All in all, this analysis demonstrates that HP start-ups take longer time and are significantly more difficult to bring to completion.

HP start-ups are more internationally orientated

Table 7 shows that a large share of HP start-ups perceives market opportunities abroad to be more attractive than those available in the domestic market. Their sales in foreign markets – in the case of NF intended sales – are also much higher than for non-HP start-ups.

Table 7. Internationalisation

	Nascent Firms (NF)		*Young Firms (YF)*	
	High Potential	*Other*	*High Potential*	*Other*
International opportunities more attractive than domestic, %	63	22	51	18
Domestic opportunities more attractive than international, %	7	44	18	44
Proportion of (intended) sales generated in international markets, %	37	7	14	5
Export to Foreign Customers	23	11	50	18
Export through Australian intermediary	3	4	17	4
Export through international intermediary	7	3	27	3
Export through Foreign Office	3	2	12	1
Export directly to international customers	15	4	30	4
Import Good / Services	23	14	39	23
Exchange ideas in person with international colleagues	47	25	50	24
Exchange ideas with international colleagues via phone, email or internet	67	37	67	35
Collect written or electronic information from abroad about developments relevant to industry	79	51	79	45

This is in line with our predictions. However, there is another important observation to be made here. This is that despite their high evaluation of international opportunities the actual international sales of high potential, young firms are modest – 14 percent of revenue on average. This figure is also much lower than the 37 percent international sales that nascent HPs aim for. These results indicate that while international opportunities may seem attractive they are not easy to bring to realisation during the early life of a new firm. The lower rated attractiveness by YFs compared to NFs also indicates that international opportunities may sometimes seem less attractive when firms learn the true investment of money and effort needed to realise them.

Overall HPs are more internationally orientated in all respects. When analysing results collapsed across both categories, they are twice as likely to exchange ideas and information with colleagues abroad, whether face-to-face (48% vs. 24%) or via IT (67% vs. 36%). Collection of information from international (non-person) sources is also much more frequent in the HP group (79% vs. 48%). They are almost twice as likely to be importers (39% vs. 23%; YF only) and more than twice as likely to be exporters (50% vs. 18%; YF only), either directly or via intermediaries.

HP start-ups funding patterns are not as distinct as one could expect

We have noted above that, as expected, much more money has been invested in the average HP start-up than in its non-HP counterpart. In this section we take a closer – albeit still somewhat cursory – look at the funding patterns for HP and non-HP start-ups. More specifically, Table 6 reports what percentage in each sub-group uses a range of alternative sources of funding at all, either as a minor or a major source of funding.

Table 6. Sources of funding

	Nascent Firms		*Young Firms*	
Funding source (% using as minor or major source)	*High Potential*	*Other*	*High Potential*	*Other*
Personal savings	82	87	76	75
Personal credit card	48	46	49	47
Money from another business that the founders' also own	34	12	19	4
Government grants	24	7	39	5
Delayed payment terms from suppliers	20	13	30	16
Advance payment from customers	14	15	34	21
Loans from family members	16	14	19	8
Loans from friends, employers or colleagues	6	6	5	4
Founders' personal secured-bank loans	17	17	11	16
Founders' other personal loans, overdraft or other credit facilities from a bank	17	16	22	15
Secured bank loans to the business itself	7	9	13	9
Other loans, overdraft or other credit facilities from a bank to the business itself	6	7	16	8
Loans from any other organisation to the business itself	6	4	11	5
Equity from family members	6	6	19	8
Equity from friends, employers or colleagues	10	1	12	1
Equity from other private investors ("business angels")	17	1	17	1
Equity from Venture Capital firms or any other organisations	n.a.[1)]	n.a.[1)]	n.a.[1)]	n.a.[1)]

1) Due to an error in the data collection procedure this information was not correctly recorded. However, we know from ownership questions elsewhere in the questionnaire that 6 percent of the HPs and virtually none of the non-HPs had VCs as part owners.

There are two things from this analysis that we find particularly interesting. The first is the widespread *non-use* of many funding sources, even among HP start-ups. Only one source – personal savings – is used by a majority of all subgroups, and no other source is used by a majority in any analysed sub-group. Further, many sources of funding are used by 20 percent or less of the members in any sub-group. The second particularly interesting finding is the relatively small HP vs. non-HP differences that are found for many funding sources.

Where these differences are pronounced – for example, government grants and business angels – it is a direct consequence of the types of sources that have been utilised for the over sampling of HPs. In the randomly sampled part of the HP samples the proportions using these two sources are much lower; 5 and 8 percent for NFs, and 15 and 5 percent for YFs, respectively. For many other funding sources the HP vs. non-HP differences must be judged surprisingly small given the vastly different characteristics of the two groups (see Table 1 and surrounding text). This is perhaps particularly pronounced for bank products. Although this analysis is too coarse-gained to establish this with any certainty, the limited use of bank products for start-ups in general, and the similarity of use by HPs and non-HPs, may reflect that banks are not capitalizing on the start-up business market to the extent that they could, and that they may not be segmenting that market effectively in their efforts to serve it. This speculation, of course, is assuming that this market could at all be attractive for an actor that has the asymmetrical share in upside gain vs. downside risk that is typical for a lender.

The YF vs. NF difference among HPs is also worth noting in this table. It appears that due to their increasing funding needs, HPs use a broader range of funding sources over time without favouring any particular source very strongly (Table 6a). Interestingly, this also include a non-trivial occurrence of equity and loans from friends and family, which sources are less used by other categories of start-ups.

Table 6a. Diversity of sources of funding & advice

	Nascent Firms		*Young Firms*	
Mean number of funding / advice Sources	*High Potential*	*Other*	*High Potential*	*Other*
Sources of funding (major or minor)	3.32	2.59	3.92	2.41
Major sources of funding	1.94	1.47	2.02	1.19
Sources of advice (major or minor)	5.86	4.57	5.64	4.38
Major sources of advice	2.05	1.66	1.93	1.33

Finally, it is worth pointing out that even in a sample carefully singled out to represent the "high potential" end of the spectrum, business angels and formal venture capitalists are involved only in a small minority of the cases.

Use of advisors

We know that by definition, HPs have higher levels of human capital internally in the form of education and experience of the founders. But what about the use of external competence? In a previous section it emerged that nascent HPs to a much greater extent had already retained an accountant (70 vs. 45 percent) and/or a lawyer (56 vs. 12 percent). The latter, which is a very large difference for this type of data, is likely due to the greater monetary stakes involved and the higher incidence in the HP group of intellectual property that is potentially possible to protect.

Table 7 provides some further information regarding the use of external sources of advice among HP and non-HP start-up. The table is structured in the same way as Table 6, above. That is, for each of a range of sources the proportion using it as either a minor or a major source of advice is indicated.

Table 7. Sources of advice

	Nascent Firms (NF)		*Young Firms (YF)*	
Source of advice (% using as minor or major source)	*High Potential*	*Other*	*High Potential*	*Other*
Family members	36	53	47	49
Friends, employers or colleagues	67	64	64	63
External investors like venture capitalists or "business angels"	n.a.[1)]	n.a.[1)]	31	7
Board members other than those categories already mentioned	39	13	26	7
Bank staff member	19	15	17	12
Potential/actual customers	67	62	59	54
Potential/actual suppliers	56	43	35	36
Chartered accountant	50	38	54	51
Lawyer	41	18	49	20
Consultant at government agency or not-for-profit organisation	41	26	36	19
Independent tax consultant	23	19	17	26
Other commercial consultant	34	13	33	15
Internet websites or communities	57	51	53	44
Other business media (print & TV/radio)	48	40	46	38

1) Due to an error in the data collection procedure this information was not correctly recorded.

The results show that the higher internal competence of HPs does not prevent them from also using external competence to a greater extent than non-HPs. Where there are notable differences between the groups they tend to be in the direction of higher usage for HPs. The exception is in the use of advice from family members, which nascent HPs are less likely to rely on than are others. Conversely, potential suppliers appear to be more important for nascent HPs than for others. Much higher use for HPs than others are also found for board members, lawyers and consultants other than tax consultants.

Non-personal sources like Internet and business media are also used more by HPs, although the differences here are not dramatic. Bank staff members are reported as advisors by less than 20 percent of the cases, and the HP vs. non HP-difference is not pronounced for this source of advice. The use of the accountant is likewise not dramatically different between HPs and others, but more prevalent in all groups. As regards NF vs. YF differences a peculiarity is that board members are used much more by nascent firm founders than those running firms that are already operational.

CONCLUSIONS

In this research we have singled out an "elite" category of business start-ups that is characterised by having founders with high levels of education and relevant business experience and high future aspirations for the business, and being based on business ideas with greater novelty and technological sophistication. We call this group of start-ups the "high potential" (HP) businesses. Not all members of this group excel on every indicator of the above criteria; however, across the criteria they score higher in total than do start-ups not included in the HP category. Only about ten percent of start-ups in a random sample meet the minimum criteria for inclusion.

We have compared the HP start-ups with the majority of start-ups that do not meet our HP criteria. Many of these non-HP start-ups may excel on some individual criteria; however, in total they do not have a combination of human capital, aspiration and technological sophistication that warrants inclusion in the HP group.

When we contrast the groups we find the following results:

- HPs founded by teams

HPs are very often founded by teams, in particular by non-spousal teams. This difference is particularly marked among HP and non HP firms that have reached (and for some time survived) an operational stage. This indicates that having a team rather than going solo may be a success factor for HP start-ups (Feeser and Willard 1990; Ensley Pearson and Amason 2002.)

- Reactive vs. Proactive Opportunity Recognition

HP start-ups appear often to be initiated by experienced entrepreneurs who are not on a determined search for new opportunities to start another business, but who are willing to try it out when they happen to come across a promising opportunity. This pattern could also indicate that they are prone to give up the start-up effort if new information suggests it is less promising than first thought.

- Longer time in gestation.

We find clear evidence that HP business are harder to get up and running than are other start-ups. Despite having been in the process for a longer time; having completed more "gestation activities," and being run by more experienced founders, the nascent HP start-ups are less rather than more likely to have a product or service ready for sale or to have started to generate income (i.e. HP average gestation process 35.5. months vs. non HP average gestation less than 22 months).

- More use of venture capital and angel investment

Business angels and venture capitalists while almost exclusively engaging with HP rather than non-HP start-ups are involved with but a small minority of the HP category (e.g. Angel Investors invest with HP firms 17 percent vs. non HP 1 percent).

- More internationalisation activity

The HP start-ups are more attracted to international market opportunities. However, there is also indication that HPs find it hard to realise these international opportunities to the extent envisioned.

- Greater use of Outside Advisors.

Despite their higher internal levels of education and experience, HP founders use outside sources of information and advice to a greater extent than do non-HP founders. The largest relative HP vs. non-HP differences are found for the use of lawyers and commercial consultants other than tax advisors.

These findings are the preliminary results from the first wave for the CAUSEE study and represent just a glimpse of the rich academic and practice-orientated output that is expected from the project. They are the first steps in defining and developing an understanding of HP nascent and young firms in Australia, how they differ from the non HP cohort that makes up the vast majority of the new firms created each year. Further fine grained analysis is predicted to develop a more nuanced picture of this important cohort and provide practical implications for Governments in the design of better conditions for the creation of HP firms, firms who assist HPs in developing better advice and programs in line with a better understanding of their needs and requirements, and individuals who may be considering becoming entrepreneurs in HP arenas.

NOTES

[1] These cases from the pilot round are not included in the analyses presented in this paper

[2] This also means that the proportion of HPs of all start-ups that are *initiated* during a particular year is likely to be less than the approximately 10 percent we have in our sample. This is because the longer start-up process the HPs are eligible for sampling over a longer period of time and therefore – in a sense – over sampled when a sample of on-going start-up efforts is drawn on a particular date.

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