HOW DO INNOVATIVE DIGITAL START-UPS ACHIEVE SUCCESS? PERSPECTIVES OF AUSTRALIAN FOUNDERS

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Abstract

This research project investigates innovative digital start-ups. A life-story approach, in which founders narrate their experiences, meanings and wisdom, is widely acknowledged as a method of entrepreneurial learning. The Sunrise Conference in which some of Australia's most successful digital entrepreneurs narrated the early days of their start-up journeys provided a rich pool of data. These narratives are supplemented with in-depth, semi-structured interviews to build twelve case studies.

Insights are generated from the founders' perspectives of their success, especially at the early stage that they often refer to as 'traction'. This knowledge is combined with received theory in entrepreneurship and modern practitioners' literature to propose 'TrAction'. The framework consists of 1. Setting a trajectory for success with vision, purpose, focus, timing, core values and powering it with founding team skills; and then 2. Taking actions to achieve product-market fit driven by user experience while excelling in branding, 'growth marketing' and constantly tracking performance in essential metrics. This study lays the foundation for more research in an emerging yet vital sector for the Australian economy.

Relevant ANZ FOR (Fields of Research) codes

150312 – Organisational planning and management (40%)

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Key terms and topics

- Digital start-up, e-entrepreneurship, digital technology-based innovative new venture (dTINV) (subjects)

- Entrepreneur, co-founders, founding team (actors)

- Growth, traction, scale, success, performance (goal)

- Business model, value creation, innovation, opportunity (key decisions)

- Product development, product-market fit, lean start-up, growth marketing, digital marketing (key actions and enabling tools)

Contents

Tables

Figures

Statement of the candidate

I certify that the work in this thesis entitled "How do innovative digital start-ups achieve success: Perspectives of founders" has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree to any other university or institution other than Macquarie University.

I also certify that the thesis is an original piece of research and it has been written by me. Any help and assistance that I have received in my research work and the preparation of the thesis itself have been appropriately acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

The research presented in this thesis is approved by the Macquarie University Ethics Review Committee via Reference number: 5201500359 dated 6 May 2015 and amended on 15 September 2015.

Hasnain Zaheer (Student ID 41397185)

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1. Introduction

You can stop an invading army but you cannot stop an idea whose time has come.
- Victor Hugo, French army general

Innovative digital start-ups have emerged as a major disruptive force to well-established industries (Nylén and Holmström 2015). A few such companies bringing about digital innovation in the form of Web-based and mobile applications are now household names: AirBNB as a marketplace of private accommodation is threatening hotels, motels and travel agents; Uber/X taxi booking app and a marketplace of local transport has jolted the entrenched taxi operators; WhatsApp's text messaging has dented the telecommunication industry's lucrative text service; Xero's accounting Software-as-a-Service (SaaS) has disturbed the comfortable position of incumbent software product MYOB.

Often, digital ventures transform basic aspects of human behaviour such as personal communication, social interaction, media consumption, the search for information, and the discovery and performance of professional work. This change is brought about when these start-ups organise structures, methods and techniques of performing personal, leisure or work activities (Gartner 2014). Construction industry personnel such as asset owners, contractors, architects and engineers have gradually learned to collaborate on the Aconex cloud-based platform instead of primarily relying on papers, files, phone calls and meetings. Freelancer and Upwork as marketplaces of freelancers and small employers enable finding and engaging a remote workforce when earlier there was no organised market for small tasks.

Whether disruptive or organising agents of change, innovative digital start-ups are changing human behaviour and transforming industries. Marc Andreessen, one of the Internet's pioneering innovators, has described this phenomenon as "software is eating the world" (Andreessen 2011).

An open economy such as Australia cannot avoid the disruptive effects of digital business. However, by choosing to participate more vigorously, this country stands to

benefit immensely. There is no 'tyranny of distance' on a global network of more than 2.8 billion Internet connected users worldwide (Meeker 2015) with improving quality of broadband connections and rising smartphone penetration. Continuing mainstream adoption of e-commerce, peer-to-peer marketplaces, cloud services, mobile apps and innovations based on emerging digital technology-driven business models are expected to disrupt the consumer and enterprise markets for many years. It is not surprising that cities and nations are competing for the jobs and economic benefits that start-ups will support (City of Sydney 2015, 1).

Innovative start-ups drive immense growth in industries (Schumpeter 1934; Kressel & Lento 2012, 1) and contribute to overall economic growth (Abernathy and Clarke 1985). As a sub-stream of technology entrepreneurship, innovative digital start-ups share in the sector's potential to create disproportionate economic growth and employment (Shane 2009; Wong, Ho & Autio 2005). The disproportionate contribution of technology start-ups to an economy is reflected in the estimates of a Sydney based start-up research group (StartupAUS 2014) which claims that the "Australian technology startup sector has the potential to contribute $109 billion or 4% of GDP to the Australian economy and 540,000 jobs by 2033". The technology sector has a particularly large impact on jobs - to the extent of three to five times as compared to non-technology new ventures (Moretti 2012).

Australia is not untouched by this 'digital start-up revolution'. In fact, Freelancer, the world's largest outsourcing marketplace, was founded by Sydney's Matt Barrie. Aconex, the construction industry platform, was created in Melbourne. Mathletics, the well-known Mathematics e-learning website also, is an Australian creation. So are CampaignMonitor e-mail marketing service, BigCommerce pioneering cloud-based shopping cart, 99 Designs crowdsourcing marketplace and Atlassian enterprise tools for software development. These success stories are attracting young, educated professionals to start new ventures. A few areas of Sydney and Melbourne have emerged as start-up 'hot spots' in their own right with a smattering of start-up co-working spaces, accelerators and entrepreneurial education ventures (StartupAUS 2014, 39; City of Sydney 2015, 1). In fact in 2013-14, approximately 1500-2000 founders in about 1000-1500 start-ups operated in Australia (PricewaterhouseCoopers 2013; StartupAUS 2014).

However, a matter of concern is that the growth of the digital entrepreneurship sub-sector in Australia is not keeping pace with its impressive record in general entrepreneurship. On one hand, the Global Entrepreneurship Monitor (GEM) data suggests that entrepreneurship plays a major role in Australia where the entrepreneurship rate is second only to the USA among developed countries; about 1.48 million people are early-stage entrepreneurs; and measures of quality such as innovativeness are above-average (Kelley, Singer and Herrington 2012). But on the other hand, only one Australian digital technology-based company appears in the global list of 138 'unicorns' – private technology companies valued in excess of $1 billion (CB Insights 2015); none as a 'super-unicorn' – technology companies valued in excess of $100 billion of which only 1-3 have appeared in a decade in the past five decades (Lee 2013); only $92 million (after excluding one large deal of $250 million) in 90 venture capital deals took place in 2014 (CB Insights 2014) which was up from only $21 million in 39 deals in 2012 (PricewaterhouseCoopers 2013); only 14 angel investors exist per million of population in Australia as opposed to 832 in USA and 91 in New Zealand; and only 20-30 technology start-ups per million of population were formed in Sydney as opposed to 250 start-ups per million of population in San Francisco (Heber 2015).

There is a large gap between the present state of the digital start-up sector and the expected growth over the next 20 years. In fact, the digital start-up opportunity has most of the hallmarks of higher expected value that entrepreneurs look for: high expected demand, high profit margins, early part of technology life cycle, density of competition is not too high or too low and learning from others is possible (Shane and Venkataraman 2000). Fortunately, it seems that there are several advantages at this point in time for Australian digital start-up founders.

First, it has become easier and cheaper to start a new venture. In the Startup Genome Report, Marmer, Bjoern, Dogrultan and Berman (2012) explain this as:

> It has never been easier or cheaper to create a startup thanks to infrastructure like open source software, software as a service, cloud hosting, globally ubiquitous payment processing, viral distribution channels, real-time collaboration, on demand logistic services and hyper-targeted advertising.

The implications of this development benefit founders with an increased ability to 'bootstrap' so that they can develop their ventures to an advanced stage without getting distracted by major capital considerations.

Second, we now know much more about how to create value online (Amit & Zott 2001), how to build strategies with business models, business platforms and other frameworks (Zott, Amit and Massa 2011; Osterwalder and Pigneur 2011; Dubboson-Torbay, Osterwalder and Pigneur 2002; Davidsson and Klofsten 2003); and how to execute product and market development with an agile, lean methodology that reduces the likelihood of failure (Blank 2013). Although a few of the emerging concepts of 'persist-or-persevere', 'pivoting', 'fast-failure' and agile development may sound superficial at first, these represent the evolution of new venture development and start-up growth to the next, more scientific methods-based phase. In other words, the 'art' of a digital start-up is rapidly becoming a 'science' (Marmer et. al. 2012a), thereby reducing risk for nascent entrepreneurs.

Third and finally, institutional support, which has hitherto been very weak, may increase with an emerging realisation on both sides of Australian politics and governments that innovation is important to replace the weakening resources sector at the core of the Australian economy (Powell 2015; Barouch 2015; ALP 2015).

However, at the same time, innovative digital start-ups are beset with a very high failure rate. As Marmer et al. (2012) have claimed:

> ...despite the increasing economic importance of scalable startups, we still don't understand the patterns of successful creation. More than 90% of startups fail, due primarily to self-destruction rather than competition. For the less than 10% of startups that do succeed, most encounter several near death experiences along the way. Simply put, we just are not very good at creating start-ups yet.

Founders of innovative digital start-ups are highly talented and motivated, often well-educated professionals who invest much of their physical, financial and emotional resources into their start-up (Ries 2011). The contribution of this study is to enhance the understanding of success in innovative digital start-ups by learning from predecessors.

This study is a snapshot in which the founders of innovative digital start-ups are the subject-in-focus. But due to the subject's novelty, it is surrounded by a broad range of entrepreneurship insights to provide context to aid in better understanding. These include new ventures in technology, technologically innovative and even non-technology products and services. The objective is to generate unique insights on how founders of innovative digital start-ups achieved success in the early stage of their journey. Perspectives of founders will be supplemented by peer-reviewed literature and well-known work done by practitioners.

In the next chapter on literature review, the definition, features, types, lifecycle and measures and indicators of success in innovative digital start-ups are explored. Next, human and social capital of founders, their organisation structure, strategy creation to explore and exploit the opportunity, and product and market development processes employed by start-ups are explored in the extant literature. As this is a new subject matter, peer-reviewed literature is supplemented by well-known work contributed by practitioners.

The third chapter discusses the methodology used to conduct an empirical study. This includes a detailed description of methodology with advantages and limitations associated with the choice of research methods, population, sample, data collection and analysis. Chapter four provides the findings of an analysis of narratives and interviews with successful founders to tap into their experience-led insights and wisdom. The objective is to enhance the learning of new digital start-up founders. In chapter five, insights from the perspective of founders, academic literature and practitioners' work are brought together. New directions discovered in this study are suggested as a 'TrAction framework' that highlights the key aspects of human and social capital, strategy building processes and product and market development processes needed to achieve scalable and sustainable success. We end with a concluding note and future research directions.

2. Literature review

There is nothing more practical than a good theory.
- Kurt Lewin, Psychologist and author

2.1 Introduction

The emerging subject of digital start-ups has a preponderance of valuable practitioner literature in start-up growth and development in the form of books written by experienced entrepreneurs such as Eric Ries (Ries 2011), Ash Maurya (Maurya 2012) and Steve Blank (Cooper and Vlaskovits 2010) and pioneering research within the start-up industry conducted by Marmer et al. (2012). On the other hand, peer-reviewed theory building in entrepreneurship and the strategic management field covers a broader range of subjects. Therefore, the insights derived from practitioner literature on digital start-ups are blended with theoretical work on the broader range of new ventures to derive an optimal level of quality and quantity of knowledge about innovative digital start-ups.

Within the peer-reviewed entrepreneurship literature, e-entrepreneurship is still a developing field. Therefore, studies on technology entrepreneurship and technologically innovative new venture (TINV) are emphasised within a broader review of the field. In strategic management literature, the theories of business models, value creation and new venture development and growth have recently found widespread application in digital start-ups. Therefore, these studies are part of this review. The approach of finding critical insights by blending entrepreneurship and strategic management literature has a precedent. Amit & Zott (2001) took a similar approach when they explored the "sources of value creation (in e-business) implied by a range of theoretical perspectives…" in these two areas of scholarship.

In this review, first, key constructs are defined and delineated - what is an innovative digital start-up, what is its typology and what are the stages in its life cycle. This is followed by a review of how entrepreneurial success is measured and indicated, especially at its initial stage. Then, theory about entrepreneurial characteristics, capabilities and background are derived from the literature. Opportunity exploration strategies and processes follow. Finally, a review of the literature on opportunity exploitation processes and actions appears. Studies are discussed in decreasing order

of relevance to the topic at hand, not by their peer-review status or academic and practitioner categories. Therefore, studies that address digital start-ups, often from the world of practice, appear first.

2.2 Innovative Digital start-ups

2.2.1 Digital start-ups in the practitioners' world

In practitioner literature, Marmer et al. (2012) in the Startup Genome report defined start-ups as "temporary organisations designed to scale into large companies." Start-up stages form the key basis of analysis. They further defined early stage start-ups as entities "designed to search for product/market fit under conditions of extreme uncertainty" and late stage start-ups to be "designed to search for a repeatable and scalable business model and then scale into large companies designed to execute under conditions of high certainty." They have identified six dimensions of start-up ontology: customer development, product development, team, financials and business models. *The Startup Genome* remains one of the most comprehensive studies specific to the subject at hand, with 663 start-ups in the sample and a range of insights on start-up success. However, this report has not been published in an academic journal despite the fact that it has a scholar as a co-author, and the methodology is not clearly described. Ries (2011) in *The Lean Startup* has described a start-up along similar lines, as "a human institution designed to deliver a new product or service under conditions of extreme uncertainty."

2.2.2 Digital start-up

Quinones, Nicholson & Heeks (2015) present the digital start-up (DS) as "a start-up born on the Internet to sell only digital products / services exclusively online". It may be noted that even as Marmer et al. (2012) and Ries (2011) propose the growth intent and behaviour of the start-up, they steer clear of its content. However, this is not the case with Quinones, Nicholson & Heeks (2015). Selling "only digital products and services…" may exclude a large number of organisations that deal in physical goods and services but have online business models for distribution. Such potential exclusions can be e-commerce stores such as Amazon and marketplaces of real world goods and services such as eBay, AirBNB and Uber. Even so, Quinones, Nicholson & Heeks' (2015) review of e-entrepreneurship remains the most important academic study on the specific subject of this study to date.

2.2.3 Technology and technologically innovative start-ups

A glance at subjects that may be considered adjacent to DS reveals Koberg, Sarason and Rosse's (1996) high-tech firms that exhibit the distinguishing features of a technology-intensive strategy and environmental volatility; Tanev's (2012) characteristics of a born-global technology firm; Barnir's (2012) TINVs that are "based on new technologies where the intent is to make technology a core component of the new venture, or in which the entrepreneur substantively incorporates new technologies in the operation or design of the new venture". These studies have a broad range of technologies in scope and innovation in the technology dimension is covered.

2.2.4 Innovation

Most new enterprises are born for self-employment and don't intend to innovate. It is a very small number of new companies that account for disproportionately large wealth and job creation (Shane 2009). Therefore, innovation should accompany high growth intent of a start-up. Barnir's (2012) description of an innovative new venture "in terms of introducing new products, targeting new markets, defining new business models, establishing new distribution channels, introducing new organisational forms or launching innovative technologies" seems relevant to digital start-ups, particularly as none of the reviewed definitions covered innovation.

Therefore, use of the Internet, exclusive online sales, search for a product-market fit, high growth intent, manifest innovation, and a highly volatile environment are a few of the elements of an emerging definition. No single definition was found that captures innovative digital start-ups in a way that is generic as well as distinct i.e., the definition can adequately describe the general features of innovative digital start-ups as well as can be applied to a new prospective member in order to validate whether it belongs to the innovative digital start-up group or not.

2.2.5 Start-up lifecycle stages

Digital start-up practitioner-driven literature has emphasised 'life stages'. It has advocated closely tracking the firm's progress to take decisions and execute activities that are consistent with its stage. In the *Startup Genome Report*, Marmer et al. (2012) have recommended that the "foundational structure of start-up assessment is the start-up lifecycle". The four 'Marmer stages' (Marmer, Herrmann, Dogrultan, Berman,

Eesley and Blank. 2012b) that are based on product evolution are 1) Discovery; 2) Validation; 3) Efficiency; and 4) Scale. The fifth and sixth 'Marmer stages' of 5) Profit maximisation and 6) Renewal, are outside the start-up phases of a company. Startup Genome conducted a quantitative survey of start-up firms, classified their respondent start-ups into stages and followed this up with a stage-wise description of the period of time that start-ups spent; funding raised; number of employees; monthly user growth; competitive advantages; and top challenges in each stage. The authors have attempted to prove that 'Marmer Stages' indicate levels of progress, and prescribe that start-ups must move through the Marmer Stages in sequence; those that don't follow the exact sequence or skip a stage, a phenomenon that they describe as 'premature scaling', must pay a penalty by experiencing below-average performance. Greater use of methodological and statistical details may have increased the generalisability of this report.

Steve Blank (Cooper and Vlaskovits 2010) has recommended 'four steps to epiphany' in his Customer Development Model: 1) Customer discovery; 2) Customer validation; 3) Customer creation; and 4) Company building.

The conventionally practised method of start-up development, referred to as the Product Development Model by Steve Blank (Cooper and Vlaskovits 2010), which consists of 1) Concept / seed; 2) Product development; 3) Alpha/beta test; and 4) Launch / first shipment, is still relevant in its core. But when the Product Development Model steps are executed in the environment of the Customer Development Model, the recursive arrows in each step encourage the founders to not go left-to-right in a product development journey, but to go backwards again and again with a learning and discovery orientation. In fact, the Customer Development Model represents the contemporary thinking in digital start-ups.

Maurya (2012) has proposed three stages of a start-up: 1) Problem-solution fit to determine whether there is a problem worth solving by asking if it is something customers want (must-have), will they pay for it (viable) and can it be solved (feasible). This stage helps derive the minimum feature-set needed to address the right set of problems. It results in a product referred to as the minimum viable product (MVP); 2) Product-market fit which involves testing how well the solution solves the

problem or in other words, measures if the entrepreneur has built something that people want. Maurya considers crossing this stage as the first significant milestone for a start-up as the "plan is starting to work in terms of signing up customers, retaining them and getting paid". Maurya terms this 'achieving traction'; and 3) Scale, in which the focus shifts to growth or scaling the business model. Before Product-Market Fit (BPMF), the focus of the start-up is learning and *pivoting* whereas After Product-Market Fit (APMF), the focus shifts to growth and optimisation.

In the peer-reviewed literature, stage based indicators of progress bear a resemblance to the Business Platform Model (Davidsson & Klofsten 2003). An instrument to measure success in a nascent firm, it is presented as a "quantifiable, holistic and action oriented instrument for assessing and assisting the development of young firms". It is based on eight cornerstones: business idea, the product, the market, the organisation, core group expertise, core group drive / motivation, customer relations and other relations. The progress in these cornerstones and achieving a minimum level in each cornerstone leads to reaching a business platform.

Entrepreneurship thinkers in the peer-reviewed literature have not traditionally posited "life stages" of a new venture as crucial. Rae & Carswell (2000) have posited five broad "life stages" of an entrepreneurial person's career: "1) Early life – family background, education, adolescence; 2) Early career – first job, vocational or professional learning; 3) Engaging and entering a venture – selecting, starting, acquiring, joining a business; 4) Growing a venture – taking control, driving, leading, developing people in the business; 5) Moving out and on from a business – selling, leaving, finding new opportunities." Koberg et al. (1996) have identified four major types of 'high tech' firms based on stages: embryonic, start-up, growth and mature.

2.2.6 Start-up typology
Typologies of digital start-ups are proposed by Marmer et al. (2012) in the *Startup Genome* on the basis of need for marketing; and Blank (2015) on the basis of market entry. *The Startup Genome* (Marmer et al. 2011) classifies start-ups on the basis of their location on a line that has two extremes of focus on marketing and focus on sales.

Figure 1: Types of start-ups according to Marmer et al. (2012)
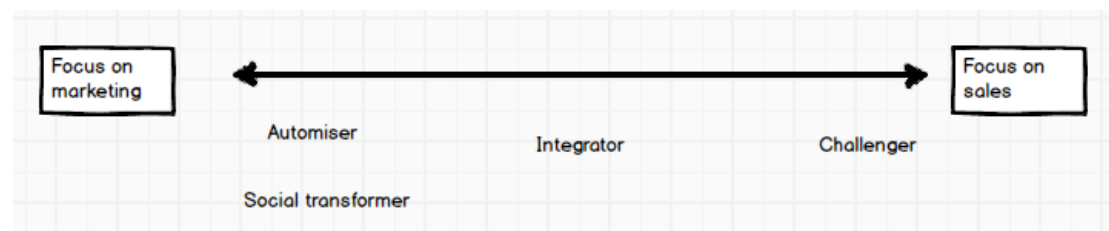
1) The automiser type is located at the extreme of the 'Focus on marketing' end. It automates a manual process, has self-service customer acquisition, is centred on product and focused on consumer, and oriented towards fast execution driven by technology. In essence, the sales and delivery process is automated and user experience is paramount. An example is Google AdWords. 2) The Social Transformer type is a variant of Automiser but with network effects. In this case, the product itself benefits from more people using it. An example is Facebook. 3) The Integrator type is in the middle of the marketing-sales line. It needs to rely on lead generation using inside sales representatives, and is generally focused on small business in smaller markets. An example is Hubspot. 4) The Challenger type is located at the 'Focus on Sales' end and relies on enterprise sales, targets, complex and rigid markets and there is a need for a sales process often involving meetings, lead time and some product customisation. Although the product is digital, it is generally a 'big-ticket item'. An example is Salesforce. This classification by Marmer et al. (2012) is indeed useful to understand and classify innovative digital start-ups but there is scope for a company to innovate and add value by violating these 'rules'. Indeed, Atlassian's product features approximate to a Challenger but it was launched as an Automiser.

Steve Blank's (Cooper and Vlaskovits 2010) Customer Development Model classifies start-ups on the basis of the market in which entry is made: 1) existing market; 2) re-segmented market; 3) new market; and 4) clone market. Blank (2015) claims the type of a start-up affects the size of the market, cost of entering the market, type of launch required, competitive barriers and positioning. It also affects sales decisions, finance and types of customers. Lee (2013), who is the first practitioner to refer to 'unicorns' in popular literature, has claimed that "companies fall somewhat evenly into four major business models: consumer e-commerce, consumer audience, software-as-a-service (SaaS) and enterprise software". There is a need for further classifications and

typologies on the basis of rigorous research so that scholars may engage with particular start-up types to enrich the pool of start-up knowledge.

2.3 Entrepreneurial success – Measurements and indicators

2.3.1 In digital start-ups

In the practitioner literature of digital start-ups, a few specific varieties of user growth, customer churn and retention rates, revenue, conversion rates such as leads-to-customers, gross profit, cost of acquiring customers and lifetime value have emerged as metrics. Venture capital firm blog Andreessen Horowitz (Jordan, Jeff., Hariharan, Anu., Chen, Frank., Kasireddy, Preethi 2015) has recommended 16 digital start-up metrics to track and represent current thinking in start-up metrics. Croll and Yoskovitz (2013) have recommended methods and cases in a more comprehensive work.

Nascent entrepreneurs of digital ventures often refer to 'traction' as an indicator of success. A novel method to measure whether a start-up has achieved success in the early stage is the 'investablity test'. This is "the ability of the company to raise capital from professional investors at arm's length". Proposed by PricewaterhouseCoopers, it is claimed to be an indicator of high growth potential (StartupAUS 2014). While using growth in users as the key metric to track and reaching the stage of 'scale' as an indicator of success, Marmer et al. (2012) have advocated stage consistency i.e., performing activities consistent with the milestones of its stage of development, as a sign of success.

2.3.2 In a broader range of ventures

Success in a new venture has been measured by a variety of indicators by scholars. A few of these 'dependent variables', as they are often referred to in quantitative studies, ordered by the lifecycle stage in which they are generally applied, are: early survival (Duchesneau & Gartner 1990; Baptista, Karaoz and Mendonca 2014; Bosma 2004; Barjatgal 2007), first sale (Davidsson & Honig 2003), venture capital funding event and / or valuation at the time of funding (Hsu 2007; Gompers et al. 2010), initial public offering event, market capitalisation or a liquidity event such as acquisition by a larger company (Startup Aus 2014), employment generated (Bosma 2004), firm size or market share (Ganotakis 2010) profitability (Bosma 2004; Davidsson & Honig

2003), stability (Davidsson & Klofsten 2003), growth in: sales; profit; employees; and market share (Cheng-Nan Chen, Cheng-Nan, Lun-Chung Tzeng, Wei-Ming Ou and Kai-Ti Chang. 2007). First sale, profit and the speed with which gestation activities occur are discussed as indicators of 'emergence' of nascent firms (Davidsson & Honig 2003).

Digital start-up practitioners and their 'eco-system', such as venture capital partners, trainers and consultants, have admirably developed definitions, typologies, performance measurements, and indicators that signal traction and success. There remains a need for further engagement by academicians, perhaps in collaboration with the practitioners, to impart rigour. Specifically, further research and development of an instrument similar to the Business Platform Model of Davidsson and Klofsten (2003) built specifically for digital start-ups is needed. Next, the factors that lead to entrepreneurial success are explored. This section of the review is based in large part on the scholarly literature.

2.4 Strands of studies in entrepreneurial success

Three broad 'strands' of entrepreneurial performance factors are found in the literature. The first of the three strands pertains to the entrepreneur: their human and social capital, background, capabilities and characteristics. The second strand pertains to the organisation and orientation of the entrepreneurial firm and its environment; and the third relates to action viz., decisions taken, systems built and actions executed.

These 'strands' reflect several categorisations of factors found in entrepreneurial literature. A framework to include entrepreneurial success factors was proposed by Gartner (1985) and included 1) entrepreneur 2) organisation 3) environment, and 4) process.

Figure 2: A framework for describing new venture creation
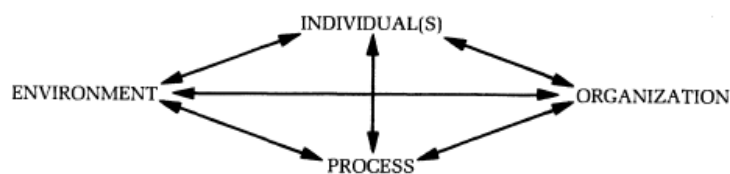
Source: Gartner (1985, 168)

Later, when studying new venture success and failure in an emerging industry, Duchesneau & Gartner (1990) examined three categories of factors: "(1) the characteristics of the lead entrepreneur, (2) startup processes undertaken during the founding of the firm, and (3) firm behaviors after start-up, including management practices and strategic behaviors". Stevenson & Jarillo (1990) divided all entrepreneurship studies into "1) what happens when entrepreneurs act; 2) why they act; and 3) how they act." Shane and Venkataraman's (2000) categorisation was based on three questions based upon opportunity: "(1) why, when, and how opportunities for the creation of goods and services come into existence; (2) why, when, and how some people and not others discover and exploit these opportunities; and (3) why, when, and how different modes of action are used to exploit entrepreneurial opportunities." Baum, Locke & Smith (2001) proposed an integrated, multi-level model of growth with "five antecedents of performance: personality traits and general motives, personal competencies, situationally specific motivation, competitive strategies, and business environment". Significantly, not just multiple simultaneous direct effects but also the web of complex indirect relationships among these dimensions were studied. Chen et al. (2007) identified (1) characteristics of entrepreneurs; (2) dynamics of entrepreneurial teams; and the efficacy of new venture strategies as popular categories of studies whereas Davidsson & Gordon (2012) have considered person, process and outcome as sub-streams. Kakati (2002) evaluated 38 criteria under six groups: entrepreneur quality, resource-based capability, competitive strategy, product characteristics, market characteristics and financial criteria.

Indeed, the relative popularity of these 'strands' of success factors has ebbed and flowed over time. Focus on 'traits' or entrepreneurial characteristics was the dominant theme in the 1980s and 1990s (Rae & Carswell 2000). Quantitative studies that tested a range of factors in human and social capital, orientation and environment flourished in that period.

Around and in the first decade of the new millennium, in the turbulence of the Internet boom-and-bust cycle, business model decisions and value creation models were of much interest. These continue to inspire a large volume of academic output (Zott, Amit & Massa, 2011; Morris, Schindehutte & Allen 2005). There was also a focus on exploration and exploitation, discovery and creation of opportunity. The

representative studies of this period were Shane and Venkataraman's (2000) opportunity based entrepreneurship and Amit and Zott's (2001) value creation in e-business.

In the present decade, longitudinal studies such as Panel Studies of Entrepreneurial Dynamics (PSED) and the large dataset-based Global Entrepreneurship Monitor (GEM) are gathering interest (Kelley, Singer & Herrington 2012; Davidsson and Gordon 2012). In methodological review, even as case studies are growing, the field is still dominated by quantitative research, which enjoys a distinct methodological bias (McDonald et al. 2015; Davidsson & Gordon 2012; Moroz & Hindle 2012).

A second Internet boom with its Web 2.0, social media and mobile apps has coincided with the growth of start-up development models as practitioners and academics are attempting to "crack the innovation code of Silicon Valley and spread it to the rest of the world" (Marmer et al. 2012). The 'translation of the innovation code' that has been so ably executed by practitioners such as Steve Blank (Cooper and Vlaskovits 2010), Ries (2012), Maurya (2013) and Marmer et al. (2012) needs even more work. There is a need for engagement by academicians in the study of digital start-up growth and development. There is also a need to expand the scope of digital entrepreneurship from processes and metrics to also cover human and social capital, clusters and networks, ethics, organisational decision-making and sustainable growth. With an understanding of how success is understood and measured and a broad review of the directions that entrepreneurial literature has taken, there is next a discussion of factors that scholars consider as responsible for success.

2.5 Entrepreneurial success factors

As founders play a central role in a new venture (Casson 2005; Arvanitis & Stucki 2012), a brief review of the literature on entrepreneurial qualities, characteristics and capabilities is presented first. Studies on environmental and organisational factors are also reviewed, followed by strategic decision-making and growth and development actions.

2.5.1 Founders' background

Duchesneau & Gartner (1990) have asserted, "Lead entrepreneurs in successful firms were more likely to have been raised by entrepreneurial parents". An entrepreneur's

family background affects human and social capital and eventually determines performance. So, "class matters" (Anderson & Miller 2013). Further, those who gave up their previous employment to start a business i.e., opportunity-driven entrepreneurs could take advantage of their capabilities more effectively as opposed to those who founded a business following an unemployment spell. The latter are called necessity-driven entrepreneurs (Baptista, Karaoz and Mendonca 2014). Erosion of their skills because of a lack of work and less flexibility in making decisions leads to a decrease in their performance. Fortunately, only one in five ventures in Australia started out because of necessity, according to GEM data (Kelley, Singer & Herrington 2012). Further, entrepreneurs with a track record of success in earlier ventures are more likely to succeed in their new venture. Skill, as well as perception of skill attributable to previous success induces this performance persistence (Gompers et. al. 2010).

2.5.2 Motivation and commitment

Erikson (2002) presented a "parsimonious model of entrepreneurial capital defined as a multiplicative function of entrepreneurial competence and entrepreneurial commitment." Both components must be strongly present. Entrepreneurial competence without any commitment creates little value in the start-up. Entrepreneurial commitment without adequate entrepreneurial competence may be regarded as a waste of time and resources. "Organisations led by highly motivated entrepreneurs may begin to reflect the character of these entrepreneurs, which may further enhance performance" (Baum, Locke & Smith 2001).

2.5.3 Human capital

"Traits are important predictors of venture growth but they operate through competencies, motivation and strategy", according to Baum, Locke and Smith (2001). They have further claimed that "technical and industry competencies are an important form of expert power that facilitates the implementation of the entrepreneur's vision and strategy". Successful founders, according to Duchesneau & Gartner (1990), "have had a broader business and more prior startup experience, seek to reduce risk and see firm success as within the sphere of their control."

However it is not just talent but investment in specific human capabilities that makes a difference. As Oe & Mitsuhashi (2013) note, "Startups reach their break-even point faster when their founders have had work experience in the same industry, and that

this effect becomes stronger when these firms commit more resources to information distribution and interpretation." In a study of Taiwanese technology firms, it was found that there was no automatic advantage because of an entrepreneurs' management capabilities. In the same vein, "R&D capabilities were found to be a prerequisite for new ventures but superior R&D capabilities do not guarantee success" (Lin, Li & Chen 2006). Ganotakis (2012), in a study of UK new technology based firms found that high levels of formal business education, commercial, managerial or same sector experience of founders create success.

Performance can improve through the "combination of heterogeneous but complementary skills, including, for example, technical education and commercial experience or managerial-technical and managerial-commercial experience". Bosma et al. (2004) are unambiguous in the finding that specific skills matter: "Former experience of the business founder in the industry in which he starts his business appears to improve all performance measures. Moreover, experience in activities relevant to business ownership (e.g. experience in leadership) increases the firm's survival time. Age appears to affect none of the performance measures. Highly educated people make more profits, while those who have experience as an employee create more employment".

So, endowed talent is not the sole determinant of success, it is the development of the talent that makes the crucial difference. Industry-specific and entrepreneurship-specific investments enhance performance, according to Bosma (2004). This reflects Drucker's (2014) view that entrepreneurs are made, not born and that entrepreneurship is behaviour, not a personality trait. Interestingly, Saraswathy (2001) contends that what makes entrepreneurs entrepreneurial is their effectual thinking which leads them to shape their future and not predict it. Shane (2000) asserts, "Entrepreneurs discover opportunities related to the information that they already possess." This advantage of industry experience is in line with Venkataraman's (1997) description of individuals and opportunities in which day-to-day knowledge associated with particular occupations is obtained in a particular 'knowledge corridor' that leads to some profit making 'insight'. Dyer, Gregersen & Christensen (2009) determine that five 'discovery skills' distinguish innovative entrepreneurs:

associating, questioning, observing, experimenting and networking. Fortunately, these skills can be developed.

The importance of innovative venture has been discussed earlier in this study. Who is an innovative entrepreneur and what makes an entrepreneur decide upon starting an innovative venture? Founder characteristics such as university education, preferably a combination of technical and commercial education, prior experience in R&D, and motivation to implement their own ideas increase the likelihood of the start-up being innovative by as much as 40% (Arvanitis & Stucki 2012). A significant finding by Barnir (2012) is that the main driver of entrepreneurs starting a TINV is self-fulfilment, desire for personal growth, and self-realisation, not business opportunity or wealth attainment. Gender differences exist. General human capital such as education and employment breadth is a stronger factor for women to decide upon starting technologically innovative new ventures (TINV) whereas specific human capital such as industry and occupational background drives men to take the decision of going the TINV way. Hsu (2007) found that in the Internet industry, founding teams with a doctoral degree holder are more likely to be funded via a direct venture capital (VC) tie and receive higher valuations, suggesting a signalling effect.

2.5.4 Social capital

Social capital, both offline and online are important. Davidsson & Honig (2003) find that bridging and bonding social capital helps advancement through the start-up process. Song & Vinig (2012) studied the size and structure of entrepreneur social networks that form their network-of-networks (NoN). LinkedIn network size has a positive relationship with entrepreneurial survival but this is not the case with Facebook and Twitter. A significant study of social capital was conducted with a sample of open source firms in the Netherlands by Stam & Elfring (2008). It was found that a founding team's intra- and extra-industry network ties shape the relationship between entrepreneurial orientation and new venture performance.

Drawing a link between human and social capital, Hsu (2007) found that "training and prior professional experience (traditional conceptualisations of human capital) not only contribute to what you know, it can also contribute to who you know." Social ties with venture capital firms result in better performance. In addition, prior founding

experience (especially financially successful experience) increases both the likelihood of VC funding via a direct tie and also enhances venture valuation. Also, founders' ability to recruit executives via their own social network (as opposed to the VC's network) is positively associated with venture valuation.

2.5.5 Organisation

Duchesneau and Gartner (1990) found successful firms to be "more flexible, participative, and adaptive organisations." Lumpkin and Dess (1996) found that an "organic structure characterized by decentralization and low formalization and integrating activities in entrepreneurial orientation will enhance performance." Further, a quick response strategy is not conducive to performance of innovative firms. However, Sine, Mitsuhashi and Kirsch (2006) oppose the long held view, established by Burns & Stalker (1961), that in dynamic economic sectors, firms with organic structures are more effective than those with more mechanistic structures. They insist that the proposition does not hold for new ventures in turbulent, emergent economic sectors. Building on Stinchcombe's (1965 in Sine, Mitsuhashi and Kirsch 2006) arguments concerning new ventures' liability of newness, they prove that new ventures with higher founding team formalisation, specialisation, and administrative intensity outperform those with more organic organisational structures.

In functional capabilities, it seems that the entrepreneurship literature values marketing capabilities. Zhao, Song and Storm (2013) see a founding team to have an appropriate mix of marketing, market linking, and service design capabilities to build scalability and protectability. The marketing capabilities of the entrepreneurial firm have been predicted to positively influence firm performance by Qureshi and Kratzer (2011). Entrepreneurial marketing (EM), as the degree of complementarity between entrepreneurial orientation and market orientation as well as marketing capabilities, enhances competence exploration and exploitation that helps firms in succeeding in their first product (Ahmadi and O'Cass 2015). Thamhain (1990) identifies 10 strongest driving factors towards new product success in a team as well as early warning signs of problems with innovative team performance. Zhao, Song and Storm (2013) confirm this position in asserting that marketing capabilities are "very important for new ventures' efforts to create scalability and financial performance".

Chen et al. (2007) suggests that the relationship quality of social interactions may determine marketing capability.

2.5.6 External factors - Clusters, networks & environment

The presence of networks and clusters and their role in the performance of enterprises that are part of such clusters has been an important part of the business strategy literature (Jackson 2015). Ramachandran and Ramnarayan (1993), in a study of Indian entrepreneurs, found pioneering and innovative entrepreneurs (PI) exhibit greater networking. Gilbert, McDougall and Audretsch (2008) found that "ventures located within geographic clusters absorb more knowledge from the local environment and have higher growth and innovation performance. But contrary to conventional wisdom, technological spillovers are not the contributing cause of higher performance observed for these firms".

On one hand, "Ventures in stable, munificent, and simple environments will achieve the highest growth" (Baum, Locke & Smith 2001) but on the other hand "conditions in ossified industries get ripe for a burst of regeneration spearheaded by vigorous entrepreneurial management" and there is a significant positive association between environmental turbulence and risk-taking (Khandwalla 1987). "Two characteristics drive the entry decision: the munificence of opportunities and the availability of resources and capabilities" (Baptista, Karaoz and Mendonca 2014).

2.5.7 Key insights discovered in entrepreneurial success factors

Human and social capital, organisation and environment are important to study the phenomenon of entrepreneurship including in digital start-ups. Lin, Li and Chen (2006) found that "high-tech entrepreneurship is a complex phenomenon with a wide range of factors, including societal contexts, entrepreneurial strategies and entrepreneurs' capabilities" and "successful entrepreneurs are those who can adjust their entrepreneurial strategies according to their social capital and capabilities". But studying these factors is difficult. Davidsson and Klofsten (2003) feel that "quantitative, explanatory models based on additive effects of comprehensive lists of presumed causes based on individual, firm and environmental levels of analysis do not provide full explanation of outcome variance". On the other hand, they feel that "qualitative, holistic research has not been generalisable". To complicate the matter, many of the reviewed factors not only influence entrepreneurial performance but also

influence each other.

2.6 Strategic decision-making to explore opportunity

At this stage in the report, an entrepreneur can be visualised as a person with a mixture of human and social capital operating in a start-up eco-system that is part of their environment. Now, this entrepreneur will need to explore the opportunities, determine how value will be created and how the architecture of a successful business will be laid.

Many academics such as Venkataraman (1997) have disagreed with putting the entrepreneur in the centre. After all, economics is not defined by defining the resource allocator. Sociology is not defined by defining society. Therefore, "it would be a mistake to define our field (entrepreneurship) by defining the entrepreneur". Rather it should be defined "in terms of the central issues which is understanding how, in the absence of current markets for future goods and services, these goods and services come into existence" (Venkataraman 1997). There has been a shift in academic emphasis from entrepreneurial capital to entrepreneurial processes. Therefore, following is a discussion on the decisions and actions of entrepreneurs, on how they explore opportunity and make decisions to create value.

Are opportunities discovered or are they created by entrepreneurs? Alvarez and Barney (2007) have debated this question comprehensively and found that both these theories are internally consistent. Seven entrepreneurial actions – leadership, decision-making, human resources practices, strategy, finance, marketing and sustaining competitive advantages are key drivers. Trimi and Berbegal-Mirabent (2012) have deemed the start-up process a very complex task. It involves setting boundaries and defining products and services in a limited time-span.

2.6.1 Value creation decisions

Knowledge of how an innovative digital start-up creates value is vital. Amit and Zott (2001) observed that new value can be created by finding out how transactions are enabled. Their model suggests that the value creation potential hinges on four inter-dependent dimensions, namely: efficiency, complementarities, lock-in, and novelty.

Figure 3: Sources of value creation in e-business
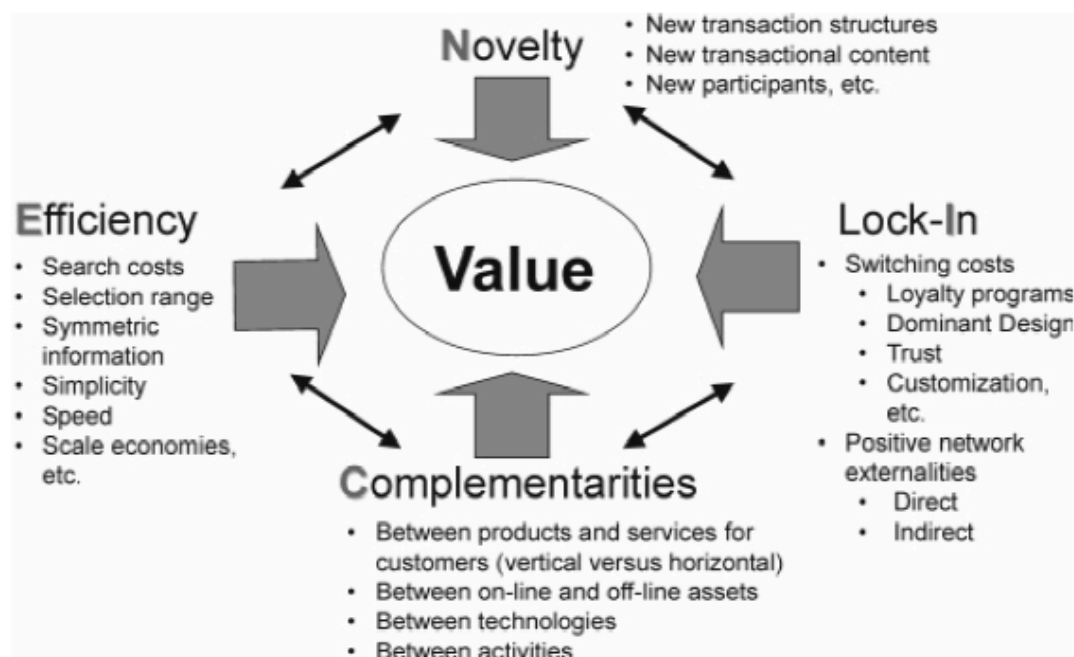
Source: Amit and Zott (2001)

2.6.2 Role of business planning in entrepreneurial strategy

As a representative early entrepreneurship study, Duchesneau and Gartner (1990) focused on the planning process, "Successful firms spent more time planning (237 hours) than unsuccessful firms (85 hours). The use of outside professionals and advisors for help in solving specific problems during startup was important for success as well as the advice and information provided by other industry participants, particularly customers and suppliers."

However, with the rise of digital start-ups in the new millennium, there has been a shift of attention from business planning to business models. Brinckmann, Grichnik and Kapsa (2010) have differentiated between the planning school that prefers a systematic and formal approach that helps in prediction and the learning school that focuses on learning, strategic flexibility and controlling resources, especially in uncertain conditions. It is the learning school that contemporary start-up development theorists and practitioners favour. In fact, Mullins and Komisar (2009) have explained why entrepreneurs must never get too attached to a business plan. In their view, the

purpose of a start-up is 'to evolve to a successful business model'. In fact, current practice leaders such as Ries (2011) recommend against writing business plans.

2.6.3 Role of business model in entrepreneurial strategy

The business model has been a part of business from early times but has been in public discourse from the beginning of the new millennium (Teece 2010). Economic theory, which is based on trade in tangible goods in markets with perfect competition and in general equilibrium, hardly addresses it at all. After all, there is no value of invention or innovation in building a traditional company that uses the same resources, does the same activities, has the same partners, incurs the same costs and earns the same way as others in the industry with only a differentiation in its value proposition. But in the case of online innovation, businesses are often conceptualised as a unique configuration of building blocks and require the discovery of a business model (Teece 2010; Osterwalder and Pigneur 2011). Therefore, business models have a central place in entrepreneurial strategy.

2.6.4 Business model decisions

One of the most important decisions that digital start-up entrepreneurs take, whether explicitly or implicitly, is to "employ a particular business model that describes the design or architecture of the value creation, delivery and capture mechanisms" (Teece 2010). The business model is described by Shafer, Smith and Linder (2005) as a "representation of the firm's core logic and strategic choices for capturing and creating value within a value network" while Osterwalder and Pigneur (2011) describe it as a "blueprint for a strategy to be implemented through organisational structures, processes, and systems".

Zott, Amit and Massa (2011) capture the essence of business model literature as "(1) the business model is emerging as a new unit of analysis; (2) business models emphasize a system-level, holistic approach to explaining how firms 'do business'; (3) firm activities play an important role in the various conceptualizations of business models that have been proposed; and (4) business models seek to explain how value is created, not just how it is captured." Doganova and Eyquem-Renault (2009) describe a business model as a "narrative and calculative device that allows entrepreneurs to explore a market and plays a performative role by contributing to the construction of the techno-economic network of an innovation"   .

2.6.5 Business models in digital start-ups

Dubboson-Torbay, Osterwalder and Pigneur (2002) propose an e-business model framework and a classification of generic business models using a multi-category approach considering that a business model could be positioned with regards to several dimensions. They follow up on the earlier work in e-business models classification by Timmers (1998), Tapscott, Ticoll and Lowy (2000), and Rappa (2001). Morris, Schindehutte and Allen (2005) propose an integrative framework consisting of three decision making levels.

The business model now occupies a dominant position in entrepreneurial literature as well as in practice. In fact, the Business Model Generation (Osterwalder & Pigneur 2010) book and its Business Model Canvas tool made business modelling in a shared, team approach a mainstream practitioner tool.

However it is not enough to configure a business model and implement it. The start-up's business model changes several times in its early stages as its founders learn, discover and achieve a product-market fit. The decisions they have taken about customers, value proposition, markets, partnerships and other building blocks of a new venture will be re-thought throughout the start-up lifecycle. Practitioner tools and frameworks such as the Customer Development Model (Cooper and Vlaskovits 2010), The Lean Startup (Ries 2011), Getting to Plan B (Mullins & Komisar 2009) and Running Lean (Maurya 2012) emphasise the gradual discovery of a viable business model.

The most popular tool, *The Lean Startup*, is built by start-up practitioners for their fellow practitioners to develop their product and achieve a product-market fit. It comprises of a set of principles that encompass the process of turning an idea into a product, described as the 'Build-Measure-Learn Loop'; validation of its concept and value proposition, described as 'Validated Learning'; metrics, milestones and priorities, described as 'Innovation Accounting'; and managing the start-up as an institution, described as 'entrepreneurship management'. Bosch et al. (2013) have contributed by proposing how to operationalise the Lean Startup principles in digital start-ups.

But a business model should not only be attractive at the beginning of a business. It must be scalable. Nielsen and Lund (2015) have proposed that scalable business models are characterised by exponentially increasing returns to scale (RTS); these business models are not constrained by capacity; partners add to the value proposition but not at the cost of profits; stakeholders have multiple roles and are mutually beneficial; and the business model acquires the form of a platform that attracts more partners, including competitors.

The business model literature by scholars has substantially contributed in the practice of start-up strategy. Practitioners have, in turn, built methodologies and tools to help entrepreneurs discover their business model. The last part of this review, which follows in the next section, discusses the actions that digital start-up founders take to achieve traction and success.

2.7 Growth and development actions to exploit opportunity

"Even with product/market fit, traction is tough" (Ellis 2014). Several practitioner tools have emerged in the past 2-3 years to enhance the effectiveness and efficiency of a start-up's development. The Hook Model (Eyal 2014), STEPPS (Berger 2013) and Understand-Discover-Define-Refine steps (Wendel 2013) are behavioural frameworks. The objective of using these frameworks is to take advantage of insights from psychology and design to create value propositions and user experiences that impart the qualities of 'viral' or 'sticky' or both into digital products. The Start-up Pyramid (Ellis 2010), Pirate Metrics (McClure 2014) and Lean Analytics (Croll & Yoskovitz 2013) are key contributions to the emerging growth hacking frameworks.

As digital marketing channels have proliferated, selecting the most effective channels to effectively and efficiently pursue growth has emerged as a key challenge. Sean Ellis' *The ICE Score* (O'Neill 2014) and *The Bullseye* (Weinberg & Mares 2014) have emerged as channel selection frameworks. In academic contributions, a model to evaluate and choose the best advertising formats for start-ups containing three stages of feasibility, efficiency and effectiveness has been proposed by Valerio De Simone, Marco D'Avino, Massimiliano Maria Schiraldi and Marco Iannucci (2015). They found buzz marketing, guerrilla marketing and viral marketing to be the three most effective forms of entrepreneurial marketing. This discussion suggests that

contemporary digital start-up's growth is being engineered by testing and evolution and not just by betting on an idea.

2.8 Research question

The question formulated for this research study is: From the perspective of successful founders, how do innovative digital start-ups achieve traction?

3. Methodology

3.1 Overview

The research question is located at the intersection of the social science fields of entrepreneurship and strategic management. Exploring entrepreneurial decisions and activities that drive innovative digital start-ups to 'traction' is an example of social science research. The study of people and their behaviour provides the insights and understanding of the phenomenon at hand. Exploratory research allows flexibility to define the problem at hand without narrowing it down to its essence (Bryman 2014). As innovative digital entrepreneurship is a new field, the intention is to deliver a high level of application that contributes to increasing the learning and efficiency of new entrepreneurs in this field.

"Methods should fit your research question", advises Silverman (2011, 5). As a holistic approach that involves discovery (Williams 2011, 2) and with a view to generating novel theory (Eisenhardt 1989), qualitative research was identified as a suitable approach for this study. As an "unfolding model that occurs in a natural setting, it enables a researcher to develop a level of detail from high involvement in the actual experiences" (Creswell 1994 in Williams 2011), a qualitative approach offers scope to engage with digital start-up success in depth. Further, an inductive approach as opposed to a deductive approach is taken, keeping in view the exploratory nature of this inquiry while taking cognizance of received theory in the fields of technology entrepreneurship, e-entrepreneurship, business models and new venture development.

The study is designed to explore the research question while leveraging the availability of a unique pool of data. First, received theory is explored to achieve an understanding of the topic and issues involved. Then, qualitative methods of inquiry - thematic analysis of transcripts of the respondents' conference presentation narratives and semi-structured interviews are used to build multiple case studies, which have helped in generating theory grounded in data.

3.2 Case study

Case studies are "useful for exploration for those who search for explanatory laws" (Stake 1978). Even as "case study research remains one of the most challenging of all social science endeavours", it is a method of choice when the researcher "1) seeks to answer 'how' or 'why' questions; 2) has little control over behavior; and 3) is focused on a contemporary phenomenon" (Yin 2014, 2). Our research situation satisfies all three conditions as we are investigating a "contemporary phenomenon in its real world context when the boundaries between the phenomenon and context are not clearly evident" (Yin, 2014, 2). An innovative digital start-up is indeed influenced by a number of factors that operate differently by geography, industry, and stage of venture, to name just a few of the mediators.

Moreover, the case study "tries to illuminate a set of decisions: why they were taken, how they were implemented, and with what result" (Schramm 1971 in Yin, 2014, 15) further sealing its appropriateness to answer this particular research question. An "(up)-close or otherwise in-depth understanding of a small number of cases set in their real world contexts" (Yin 2012) will hopefully "result in new learning about real-world behaviour and its meaning" (Yin 2012) in regards to success in building an innovative digital start-up.

3.2.1 Case study design

Yin (2012) has suggested explicitly designing the case study to research systematically. His steps in defining the case, selecting one of the case study designs and using theory in design work are applied in designing our case study:

> A case is generally a bounded entity (a person, organisation, event or other social phenomenon) but the boundary between the case and its contextual conditions – in both spatial and temporal dimensions - may be blurred.

Out of the four types of case study designs suggested by Yin (2012), an embedded (multiple units of analysis) 'multiple-case' design is used (Yin 2012; Yin 2014, 18), placing our choice in the bottom-right block in the figure below.

Figure 4: Basic types of designs for case studies (Yin 2012)
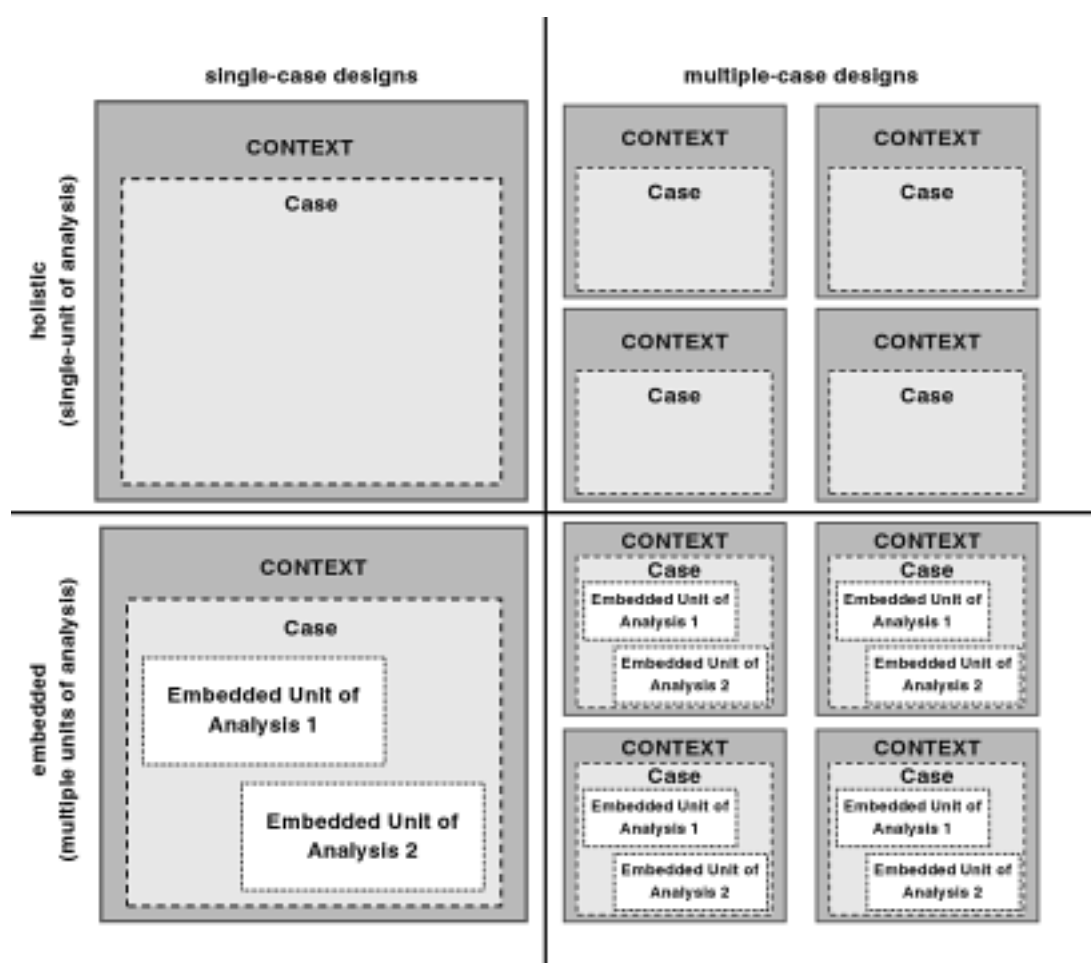
Source: COSMOS Corporation in Yin (2012)

3.2.2 Use of theory

Yin (2012) has claimed "a case study that starts with some theoretical propositions will be easier to implement than one having no propositions". In fact, he has gone on to suggest that "in general, the less experience you have had in doing case study research, the more you might want to adopt some theoretical perspective" else "you might risk false starts and lost time in doing your research". Eisenhardt (1989) has concurred in arguing, "A priori specification of constructs can help to shape the initial design of theory building research." However, "it is equally important to recognize that both are tentative in this type of research. No construct is guaranteed a place in the resultant theory." These pieces of advice were valuable and are applied in this research. Based on this advice, analysis was based on abductive reasoning, drawing on insights from the extant literature to generate key questions and problems to study but in conjunction with research findings.

3.3 Population

The population of potential participants consists of founders / co-founders of Australian innovative digital start-ups that are considered 'successful' in their current venture or in one of their preceding ventures within the past 10 years. To elaborate, a participant must be either a sole founder or a founding team member, not one of the initial employees, investors or partners. They must have been engaged full time in the new venture to have full knowledge of events, decisions, challenges and situations in the founding of the company. The participant as well as the business must have been based in Australia when they started it and achieved their initial success. The new venture must have innovated in terms of "introducing new products, targeting new markets, defining new business models, establishing new distribution channels, introducing new organisational forms or launching innovative technologies" (Barnir 2012) and its innovation must be based on the Internet, whether as a web or mobile application.

There is no authoritative database of current or past digital start-ups due to this category of firms being fragmented across industries, sectors, business models and geographies. PricewaterhouseCoopers (2013) estimates 2000 entrepreneurs in 1500 start-ups whereas the Crossroads report (StartupAUS 2014) estimates 1500 start-up entrepreneurs spread across 1000 new ventures. Besides the disagreement about the numbers involved, the innovation and success dimensions are not known.

Only one Australian digital start-up, Atlassian, appears on a global list of 'unicorns' (CB Insights 2015). An examination of ASX listed companies (ASX 2015) reveals about 12 digital technology-based companies. But most successful digital start-ups don't appear as a listed company. These start-ups are acquired, stay private or move to another country. Therefore, a list of successful innovative digital start-ups (appendix 1) was manually built with data collected from the Crossroads report (StartupAUS 2014), from the list of participants in The Sunrise Conference (2014) and a range of business and start-up media. This list is a working list of start-ups whose founders are eligible for inclusion in the population for the purpose of this research report.

3.4 Sample

Cases are "chosen to replicate previous cases or extend emergent theory" in theoretical sampling to maximise the theoretical inferences in an ongoing process. Sampling was determined by the source of data. Nine of the founders of digital start-ups who participated in The Sunrise Conference 2014 and 2015 were judged by the researcher to satisfy the definition of innovative digital start-up founders. These were chosen as sample in groups – first a group of four founders, then a group of three founders and finally a group of two founders in three successive stages on the basis of theoretical sampling. Their conference presentation narratives were analysed.

In a final round of data collection, the founders who presented in the conference were approached with a request for interview with the intent to 1) benefit from multiple sources of data to build more in-depth case studies; and to 2) build a richer set of data. However, no founder agreed to participate in these interviews. Therefore, the conference narratives were supplemented by interviews with founders outside of The Sunrise Conference set. These interviews were requested to cover the gaps in founders' narrations, such as human and social capital.

3.5 Case study data collection

"Case study research is not limited to a single source of data. In fact, good case studies benefit from having multiple sources of evidence" (Yin 2012). Sources of data used in this research can be classified under three out of six common sources of evidence in conducting case studies (Yin, 2012) viz., 1) Physical artefacts (Yin 2012) or commercial media accounts that are part of public archives (Berg 2004); 2) Documents; and 3) Interviews.

3.5.1 Physical artefacts from The Sunrise Conference 2014 and 2015
Physical artefacts are the most important data source in this project. A large pool of data is publicly available in the form of video recording of conference presentations of Australian start-up founders narrating their early days of (eventually successful) company founding (The Sunrise Conference 2014). Sessions of that conference are hosted on Youtube (The Sunrise Conference 2014). Described as "The Silicon Valley Myth explained" and "You know the end but not the beginning", the conference was positioned to attendees as "Your chance to learn why they succeeded" as it showcases

"the early days of Australia's great technology companies and how they got started" (The Sunrise Conference 2014).

Transcripts of presentations and responses to audience questions were used as raw data as these were deemed valuable because of the similarity of the conference's purpose with that of this research project. As an unobtrusive strategy that involves examining and assessing human traces, commercial media accounts in the form of recorded material produced for general or mass consumption (Berg 2004) include video tapes. A highly celebrated example of using written transcripts from the audio portion of video tapes is Molotch & Boden's (1985) examination of the Watergate hearings of 1973, which justifies use of this pool of data.

3.5.2 Documents

Newspaper articles, blog posts, profiles on social media, especially Linkedin, and other public documents were used to clarify the context and add to the interview protocol. This source of data helped in building richer descriptions. Collection of documentary information about each case study was the first step, albeit this step was performed in stages with a higher level of detail in successive stages as case studies gained depth.

3.5.3 Interviews

Semi-structured interviews were conducted to build on and confirm data from a new set of founders, after the analysis of conference presentation narratives. While interview data "reflects a reality jointly constructed by the interviewer and the interviewee" (Seale 2004), following an interpretivist approach, the choice of a semi-structured organisation was partly made to move it towards a relative positivist frame. The interview protocol was derived out of the case study protocol which itself was based upon the list of issues, topics and themes that emerged out of the two other (unobtrusive) sources of evidence, besides the theoretical perspective received from the literature review. The interview protocol is placed in appendix 2.

3.5.4 Case study protocol

Unlike an interview protocol, the questions in a case study protocol are "directed at the researcher, not the field participant" (Yin 2012). "The set of questions to be addressed while collecting the case study data will 'act as a mental framework' such

that 'specific questions posed to any participant are tuned to each specific interview situation'. Thus the questions as actually verbalised in an interview derive from this (mental framework or) line of inquiry, not from a verbatim script (questionnaire)" (Yin 2012). The case study protocol consisted of:

1. What role, if any, did human and social capital play in achieving traction? Explore the characteristics and capabilities of the founding team. Also note any specific capabilities in different functional areas that were vital in the initial stages of a digital start-up.

2. What process did the founder(s) follow in identifying a start-up opportunity and conceptualising, modifying and moulding it into a business model?

3. What process did the founder(s) follow in developing the new product and its market to a stage when it achieved traction? Explore how the product was tested at different stages of its evolution, what was the role of the customer, the role of the team, investors, media or any other participants in achieving traction.

"Drawing from a continual sense of skepticism as the case study proceeds", data would be sought to examine rival explanations. "Skepticism involves 'worrying' about whether events and actions are as they appear to be and whether the participants are giving candid responses. Rival explanations are not merely alternative explanations. True 'rivals' compete directly with each other and cannot co-exist" (Yin 2012). These 'rivals' were sought throughout the case study data collection.

3.6 Data coding and analysis

"It is the intimate connection with empirical reality that permits the development of a testable, relevant and valid theory" (Eisenhardt 1989). This advice about the importance of frequent overlap of data analysis with data collection lies at the core of coding and analysis in this study.

Rapley (2011) has suggested that in the process of moving from the "particular to the abstract", analytic approaches such as thematic analysis, grounded theory, framework analysis and interpretative phenomenological analysis "share some family resemblances". "They all start with a close inspection of a sample of data about a specific issue. This close inspection is used to discover, explore and generate an increasingly refined conceptual description of the phenomenon." Ryan and Bernard (2003) have described eight observational techniques and four manipulative techniques of processing text. "The resulting conceptual description therefore

emerges from, is based on, or is grounded in the data about the phenomena. The focus shifts from what is said by participants, what you have observed them doing and what you read in a text to exploring and explaining what is underlying or broader or to distill essence, meaning, norms, orders, patterns, rules, structures etc". In other words, the challenge of designing data analysis is to develop a method and process to move from the "level of description and summary" to the "level of concepts and themes" (Rapley 2011).

Following the recommendations of Rapley (2011) and Ryan and Bernard (2003), the data coding stage started with a close and detailed reading of a sample of the data; followed by reading and systematically labelling the data archive, which in this case was the initial group of transcripts of The Sunrise Conference; then reviewing and refining the labels and labelling practices; making notes on the ideas that emerged during the labelling; and returning to the field with the knowledge gained, letting this knowledge modify, guide or shape the data to be collected next, which were the successive groups of conference narratives and semi-structured interviews. This approach closely corresponds with the process of building theories from case study research recommended by Eisenhardt (1989). It benefits from a few of Eisenhardt's (1989) distinguishing features of a priori specification of constructs, population specification, flexible instrumentation, multiple investigators, cross-case analysis and several uses of literature.

A list of NVIVO categories (and sub-categories) derived after reading the literature and first level of labelling are placed in appendix 3. Another list of categories (and sub-categories) that existed at the conclusion of analysis is placed in appendix 4.

When creating field notes to perform within-case analysis, Eisenhardt's (1989) advice was taken of asking questions to oneself such as "What am I learning?" and "How does this case differ from the last". The questions in the case study protocol were answered by triangulating and synthesising multiple data sources. The overall idea was to become intimately familiar with each case as a stand-alone entity. Afterwards, in searching for cross-case patterns, the risk of the researcher leaping to conclusions was high owing to the presence of "elite" informants and "vividness" displayed by some of them (Eisenhardt 1989). This risk was kept in mind by the researcher.

Within-group similarities coupled with inter-group differences were listed in each category and sub-category of labelled data.

Owing to a limited number of cases that belonged to start-ups in a diverse range of industry sectors and different types in terms of business models, consumer and business orientation, there is no analysis performed by segments. Cases were not grouped in any form. However, cross-case analysis was performed. Cross-case analysis, which helps primarily in finding patterns among multiple cases while looking out for disconfirming evidence, led to the shaping of the final model. But on the way, a constant comparison between data and constructs helped lead to refinement of the definitions of constructs. The emerging theory from the first phase of analysis was used to shape and refine case study protocol and interview protocol, new interview data was collected and a new phase of analysis undertaken. This iterative process continued for at least three cycles. In the last step, emergent relationships between constructs were verified to fit with evidence applying replication logic (Eisenhardt 1989).

Theory building in case study research also comprises enfolding literature (Eisenhardt 1989). The emergent concepts were compared with the broad range of extant literature (Bryman 2014) in technology entrepreneurship and new venture development that was studied prior to data analysis, noting the similarities and conflicts. The conflicting literature especially provided an opportunity to contribute in theory building by finding how innovative digital technology-based entrepreneurship differs from other varieties of entrepreneurship.

3.7 Justification, advantages and disadvantages

3.7.1 Prior studies
Examples of prior studies prove the applicability and appropriateness of the proposed research strategy and the methods to explore questions of a similar nature. First, this project is inspired by Amit and Zott's (2001) study of drivers of value creation in e-business. That topic was located at the intersection of entrepreneurship and strategic management although closer to strategic management, whereas this study is closer to entrepreneurship. Amit and Zott also used an inductive case study approach after a study of theoretical perspectives. They conducted in-depth inquiries into 59 e-

business firms with the help of open-ended questions that were answered by multiple investigators using public documents to generate insights grounded in data. Therefore, Amit and Zott's (2001) study, based on a multiple-case study design using unobtrusive methods to collect data to theorise about drivers in creating value in e-business, has similarities to the present study across several dimensions.

Second, Doganova and Eyquem-Renault's (2009) examination of the role of the business model in the innovation process with a single descriptive case study of an entrepreneurial venture is an example of the case study approach in this area. Third, Sosna, Trevinyo-Rodrguez and Velamuri (2010) studied the drivers of business model innovation by documenting a firm's new business model in two phases of its launch: 1) the experiment and exploration phase; and 2) the high growth exploitation phase in a single case study, which was an example of case study design to study a new venture.

3.7.2 Narratives

The use of the narratives from The Sunrise Conference is supported by the life story approach which was used by Rae and Carswell (2000), who justified it as follows:

> …life stories allow entrepreneurship to be understood as an evolving and narrative based living theory, composed of the collected experiences, meanings and wisdom of successful entrepreneurs who pass them on through stories and practice to other entrepreneurs.

Further, if the subject is reversed from failure to success, the methodological approach finds resonance in Mantere, Saku, Pekka Aula, Henri Schildt and Eero Vaara (2013) who used "post-failure accounts from individuals involved in failed ventures to analyse the various ways in which different actors explain and make sense of entrepreneurial failure". Further, Johansson (2004) has suggested that a narrative approach can benefit entrepreneurship research.

3.7.3 Case study

Emergent theory in case study research is testable because of measurable constructs and verifiable hypotheses that result from repeated verification in the theory building process. It is also likely to be empirically valid because of the intimate interaction with actual evidence which often produces theory that closely mirrors reality (Eisenhardt 1989). As Stake (1978) writes, "Because of the universality and

importance of experiential understanding, and because of their compatibility with such understanding, case studies can be expected to continue to have an epistemological advantage over other inquiry methods as a basis for naturalistic generalization", further buttressing the appropriateness of the design decisions to this study.

But there is a flip side to theory development from case studies. One may be developing specific explanations for narrow phenomena that cannot be generalised to a higher level. Also, voluminous data may result in theory that is rich in detail but lacks simplicity, especially as the researcher is at the risk of not being able to assess the most important relationships (Eisenhardt 1989).

While a longitudinal approach to the systematic, large scale study of ongoing new venture start-up processes 'as they happen', such as the Panel Study of Entrepreneurial Dynamics (PSED), can be valuable, the duration and resources of this project did not permit such an approach.

3.7.4 Population

Selecting a population of successful founders confers an instant advantage of high relevance. This decision has helped avoid 'dilletante dreamers' or 'hobbyists' who are not serious about their start-up activity (Davidsson & Gordon 2012). Their firm's success implies that experiences, advice and characteristics of founders as discussed in this report have been proved to be effective. Therefore, the insights have tremendous entrepreneurial learning value. Of course, the users of this research are made well aware that several success factors may have worked in combination with other factors, the start-ups operated a few years ago and were located in a particular context.

The flip side of this population may be a selection bias leading to a survivor bias (Davidsson & Gordon 2012) and also memory decay. In fact, the following criticism by Davidsson and Honig (2003) of previous research in nascent entrepreneurship may be true for this study:

> Previous research excludes many of the efforts that eventually result in termination before the emergence of the firm. Therefore, the bulk of research, which comprises much of our knowledge of entrepreneurship,

suffers from selection bias, the result of sampling only successful emergent entrepreneurs or enterprises. Further, efforts to examine start-up attempts ex-post suffer from hindsight bias and memory decay.

The population of successful innovative digital start-ups has dimensions of homogeneity but is still spread across many industries, locations of origin within Australia, levels of success and business model patterns. Firms such as Atlassian, CampaignMonitor and Xero are oriented towards business customers while others such as Kogan and RetailMeNot cater to consumers. Similarly, business models exhibit a variety of patterns such as marketplace platforms, e-commerce, digital media and Software-as-a-Service (SaaS). Again, ventures located in Melbourne 'play' in a very different entrepreneurial 'eco-system' than their counterparts in Sydney, Hobart, Perth, Newcastle or Cairns. The population reflects the range of presenters in The Sunrise Conference (2014) that comprised one of our chief sources of data. A more homogenous population and a resultant homogenous sample, such as 'B2B start-ups started in Sydney with at least $100 million valuation" may not have been feasible due to limited population and even if completed, the generated theory would have been applicable only to that selected segment and so the contribution of that study would have been smaller.

A limiting feature of this study may be that the population consists of Australian founders only. Therefore, there would be a limitation in generalising the findings to entrepreneurs outside Australia. This selection is deliberate as a result of a preference for catering to the context of Australian founders. Fortunately, most innovative digital start-ups are 'born global' in nature and therefore this study has slightly limited but still compelling relevance and utility to non-Australian readers.

3.7.5 Sources of data

A few pitfalls of using conference presentation narratives of The Sunrise Conference were uncovered when this research proposal was presented in a research expo. These are chiefly: public performance bias, memory problems, and currency problems.

Public performance bias could be a factor as narrators may have offered a highly sanitised or exaggerated version of their experiences and achievements. Participants may give evidence about how the entrepreneurial process works that reflects society's expectations by echoing the same institutionalised 'mantra', rather than their actual

practice (Yin 2012). Further, as 'elite' participants who were looked up to as role models by hundreds of people present at the conference, they had the "ability to determine the very grounds of the interactions through which agendas are set and outcomes determined", which is Molotch and Boden's (1985) third face of power. Memory problems may have been encountered as a few of the narrators achieved their success 5 to 12 years ago and so they may not recall events leading to their traction precisely. Finally, currency problems may be present as many of the tools and techniques used by today's entrepreneurs (e.g., *The Lean Startup, growth hacking*) have come to the fore after these presenters already achieved success and therefore may not contribute in enhancing entrepreneurial learning in the context of currently used tools, techniques and methodologies.

A few of these disadvantages are addressed in the research design by triangulating evidence from two other sources (Yin 2012) and by theoretical sampling in choosing participants in the 'multiple case study' design. In any case, the value of using the Sunrise Conference narratives is very high because of the availability of detailed data from the actors who directly participated in the entrepreneurial process. The founders who narrated at The Sunrise Conference were selected by the conference producers who are venture capital professionals. On one hand, this lends a market-led selection advantage. It may be noted that none of the 12 firms in the case studies appear in the organisers' venture capital portfolios but this does not necessarily preclude bias.

The volume of public documents and level of detail pertaining to different members in the sample was uneven, with a few companies run by 'media savvy' or 'glamorous founders' generating much more media commentary than others. However, at the minimum, reasonably detailed Linkedin profiles of all founders were found. Therefore, public documents were limited to Linkedin profiles and the 'About us' pages of the companies.

Finally, interview as a source of evidence was used for its flexibility, rich information (non-verbal communication is captured by an alert researcher), and the chance to ask 'why' to bring deeper meaning to the fore. However, interview is a contrivance and produces far from naturally occurring data (Silverman 2011, 166). It also has the practical disadvantage of difficulty in getting cooperative informants, an issue that

was enhanced by the profile of our respondents who are successful entrepreneurs and are very busy professionals with multiple projects, jobs and other commitments. The conversion rate of requests for interview to actual interview was indeed very low. In fact, this researcher had to contact more than half of the entire population whose contact details could be found to finally get three interviews.

The research topic and methodology was selected to be practically feasible for completion within the duration of this Master of Research (M.Res.) project, which was one academic year but, in practical terms, actually about seven to eight months.

This research has advantages deriving out of its population and sample and the data that was made available to this project in the form of narratives by highly successful founders. Several corresponding disadvantages have been discussed pertaining to the research design decisions and sources of data. In the next section of this report, case studies are described and findings on the key constructs and success factors are presented.

4. Findings

4.1 Case studies

Twelve case studies of Australian innovative digital start-up founders were written. Narratives of successful founders at the Sunrise Conference in nine of these case studies and interviews in the remaining were the main source of data. Four founders chose to remain unidentified. Therefore, the companies of these founders are referred to by a generic description and the presentation of their data is de-personalised.

Table 1: Summary of founders and innovative digital start-ups studied

Start-up (previous venture if any, in brackets)	Description	Name of the (co)-founder	Source of data
Aconex	Enterprise SaaS	Leigh Jasper	Narration at the Sunrise Conference
Freelancer (Sensory Networks)	Freelancing marketplace	Matt Barrie	Narration at the Sunrise Conference
Atlassian	Enterprise SaaS	Mike Cannon-Brookes	Narration at the Sunrise Conference
GradConnection	Employment marketplace	Mike Casey	Interview
Skoolbo (Mathletics)	K-12 e-Learning	Shane Hill	Interview
biNu (Sabela, Decide)	Mobile app	Gour Lentell	Interview
Redbubble	Art marketplace	Martin Hosking	Narration at the Sunrise Conference
Stripe Australia (Opus360)	Enterprise SaaS (Opus360)	Susan Wu	Narration at the Sunrise Conference
Software and creative marketplace	Software and creative marketplace	N/A	Narration at the Sunrise Conference
Legal services software	Legal services software	N/A	Narration at the Sunrise Conference
Online advertising	Online advertising	N/A	Narration at the Sunrise Conference

Online coupons repository	Online coupons repository	N/A	Narration at the Sunrise Conference

Eight of these founders are still associated with the successful start-ups that they founded whereas the other four have moved on to new engagements. Of the four who have moved, Shane Hill has founded a new start-up, Skoolbo. And Susan Wu, the only female entrepreneur in this study, heads the Australian subsidiary of a Silicon Valley venture. The two remaining founders are engaged in miscellaneous activities such as investment and advice.

All except two – Matt Barrie and the founder of a legal services software company, had at least one co-founder. In terms of geographic location, all the founders started their companies and achieved traction in Australia. Susan Wu grew up in the USA and started Opus360 there but later migrated to Australia and is still associated with the digital start-up sector and therefore working in an Australian digital start-up context. Industry sector of the start-up and city of founding are not included as criteria to analyse data.

In this section, descriptions of each innovative digital start-up and that of its founder or co-founder who has narrated or was interviewed, are listed. Insights about founders' perspectives of measurements and indicators of success, and factors that lead to success were gathered from within-case and cross-case. These findings are presented below.

4.2 Description of innovative digital start-ups and their founders

Case 1

Aconex was founded in 2000 and is an online collaboration platform for construction, infrastructure, energy and resources projects. With 400 employees in more than 40 office locations, Aconex's proposition to project teams is to finish early and under budget. Aconex has been used in projects worth over $800 billion. There are over 1070 fee paying customers and 50,000 user organisations that collaborate. Revenue in 2015 is forecast to be $85 million with a net profit after tax of $2.6 million. The narrator is Leigh Jasper, who co-founded the company with Rob Phillpot. They have raised $86 million in private equity capital. Before co-founding Aconex, Jasper was a business analyst at McKinsey where he consulted in e-commerce strategy, e-commerce mergers and acquisitions, and was a consultant at A.T Kearney. Jasper has a Bachelor of Engineering with First Class Honours and a Bachelor of Science degree.

Case 2

Freelancer was founded in 2008 and is today the world's largest freelancing and crowdsourcing marketplace that connects over 16.5 million employers and freelancers globally to work in diverse areas. The company's 390 employees consists of 280 in Manila and 100 in Sydney. Listed on ASX as FLN, Freelancer had a gross payment volume of $104 million, net revenue of $26 million and net loss of $1.5 million in the financial year (FY) 2014-15. Total registered users at 14.3 million in FY 2014 had grown by 4.6 million over the previous financial year. There were 1.6 million new projects and contests with an average project size of $177. Gross margin was 87%. The narrator Matt Barrie is the founder, CEO and Chairman of the Board. He also teaches cryptography and technology entrepreneurship at the University of Sydney and is co-author of 20 US patent applications. Before founding Freelancer, Barrie was the founder and CEO of Sensory Networks. He has won several awards including the inaugural BRW Entrepreneur of Year 2011. He has a first class Honours degree in Electrical Engineering and Computer Science, Masters in Applied Finance, and Masters in Engineering from Stanford. Simon Clausen is a founding investor in Freelancer.

Case 3

Atlassian was founded in 2002 as an enterprise software company selling software to plan, collaborate, code and service enterprise software teams. There are over 1100 'Atlassians' in eight locations, and 43,000 organisations use its 16 products. The narrator Mike Cannon-Brookes co-founded the company with Scott Farquhar. Cannon-Brookes has a Bachelor of Commerce degree in information systems from the University of New South Wales and was honoured as a World Economic Forum Young Global Leader in 2009.

Case 4

GradConnection was founded in 2008 as a platform that links students and graduates to employment opportunities. The interviewee Mike Casey is a co-founder. He and his co-founders Dave and Dan were recruited as graduates at Westpac where they observed the gap that existed between students and employers in graduate recruitment. After meeting at Westpac, they started GradConnection and eventually all three left their jobs to grow the firm full time.

Case 5

Mathletics was founded in 2003 as an e-learning website for school students and grew to over 100 staff. Mathletics and World Maths Day have become the most visited educational websites across the globe. Skoolbo is an educational games company. The interviewee Shane Hill founded Mathletics in 2003 and Skoolbo in 2010. He was a maths teacher in New South Wales (NSW) before he founded Mathletics.

Case 6

biNu was founded in 2008 as a mobile technology company that provides fast mobile Internet on non-smartphones. The interviewee Gour Lentell is the CEO and co-founded biNu with Dave Turner (CTO). Before biNu, Lentell co-founded and grew two successful digital media technology companies, Sabela Media and Decide Interactive, both of which were acquired by NASDAQ-listed 24/7 Real Media, and both were co-founded with Dave Turner. Earlier, he worked with PricewaterhouseCoopers and Oracle in IT consulting and with OzEmail when it was the largest ISP in Australia.

Case 7

RedBubble was founded in 2006 as a community and marketplace of independent artists and designers. There are more than 13 million creative works hosted on the website and there are over 50,000 selling artists. The narrator Martin Hosking co-

founded the company with friends Peter Styles and Paul Vanzella. Hosking has a degree in Arts and started his career as an Australian diplomat. Stints in Syria were followed by a stint in LookSmart, one of the major early Australian Internet companies, where he was in charge of product development and technology teams.

Case 8

Opus360 / Free Agent was founded in 1998 as an enterprise SaaS company that had a successful IPO on NASDAQ. The narrator Susan Wu currently heads online payments technology company Stripe in Australia and is a serial entrepreneur who co-founded Opus360 and later social games company ohai (sic) and has been involved in the founding of several more, such as Obvious Corporation.

Cases 9 to 12

The four other narrators are founders or co-founders of: 9) a software and creative marketplace; 10) a legal services software; 11) online advertising; and 12) an online coupons repository. Their data has been used without personally identifying them.

4.3 Founders' perspectives of success in early stage

Firm survival, sales, sales growth, number of users and user growth are the most frequent measures of success from the founders' perspectives. Survival, a binary measure of whether a firm exists at a point in time, is important. Survival over time provides an opportunity to the founders to continue working on their vision. As revenue plays a role in improving cash flow, it is tracked, as any success in bringing in revenue, especially upfront payments from customers at early stages, enhances the likelihood of survival. It is interesting to note that net cash flow is dependent upon both revenue and expenditure but founders who 'bootstrap' are automatically assumed to be working on minimal spending levels.

> It was just about getting some revenue in the door…a lot of the time
> a business fails not when it runs out of money but when the founders
> run out of the ability to support themselves. It was very touch and
> go, but we were spurred on by the fact that in our first year we got
> maybe $30,000 worth of revenue. (Casey)

They gave themselves a goal :

> We had our goal of 50,000 customers…the first time we crossed a
> million bucks in a week. (Cannon Brookes)

> 1 million users and conversion rate of 5% (Hosking)

Achieving product-market fit is essential to success and was tracked throughout the

early stage of the start-up. When any new product feature or a new marketing channel is introduced, user growth and sales growth is tracked to determine whether the new product or marketing initiative is achieving 'traction'.

> Looked a lot at revenue in different categories. We were constantly looking for the thing that was going to take off (founder of a creative marketplace).

Founders experienced a range of situations in which traction occurred but a recurring theme was reaching a 'tipping point' and gaining 'momentum' enabled by a first or first few events that were often described as serendipity or timing. For example, the first few clients to sign up with GradConnection had found it difficult to hire graduates of a specific discipline. These first clients' decision to sign was helped by pricing that was just enough for corporate client to put under discretionary spending.

> They often didn't need to go for approval to the higher level, or if they did, it was a rounding error really when it came to overall corporate budget (Casey).

On the supply side of GradConnection's market i.e., the students, distributing flyers at university campuses such as putting them on lecture theatre seats worked well in getting traction. In case of Mathletics, a resource software (not a complete product on its own) that generated question papers for teachers helped get traction. Even higher success was waiting for him when he enabled the teachers to put their school crest on the generated question paper. "It made their job easier", he said.

Out of the many decisions and activities performed by founders, a start-up needs only one, or at most, a few 'inflection' creating decisions and activities that puts it on the path to success. Hill summed up the essence of traction: "It's about critical mass, and how do you get to that tipping point, and get momentum. That whole shifting from early adopters to early majority…" Jasper's comment sums up how traction operates:

> …the hardest deal you ever do is the first deal in a new market. After that you start to get this network effect that is small in the early days, but it starts to build for you. Of course, as it gets momentum, you hit a tipping point where it all starts to swing your way.

However, success and failure, and their reasons, are sometimes not clearly understood. It seems that sometimes the smallest and most trivial decisions and actions can help a founder to succeed or fail. As Hill notes: "Over these 13 years, we

certainly had big hits and some big misses, and the difference between those two is often very minor".

Lentell defined success as serendipity and claimed there is no formula or process to achieve it. And while practice literature such as The Lean Startup (Ries 2012) advocates 'fail fast', Hosking lamented, "I think sometimes you just don't know whether things are a failure". He was not sure if popular methods to measure success to make decisions can be followed blindly:

> A lot of stuff ends up in that little world of being a little bit successful and then you're going to make a decision about what you're going to do with it...A/B testing certainly helps you to know whether something's failing or not versus what you have but sometimes in our A/B test, I'll look at something and say, well, I know it's not going better but I actually reckon it's better for the longer term. So you have to be careful about deciding what a failure truly is. (Hosking)

Start-up development tools and methodologies such as *The Lean Startup* (Ries 2011) and *Lean Analytics* (Croll and Yoskowitz 2013) have defined precise, objective decision-making processes such as serving a particular piece of persuasive copy or a feature or a new marketing message to a statistically significant number of users, measuring their response and taking tough decisions. Founders agree with, advocate and use the scientific approach but only as one of the inputs. Subjective decision-making and inputs from co-founders and employees remain their principal source of insight. For them, the process of succeeding in an innovative digital start-up is both 'art' and 'science'.

4.4 Dimensions of entrepreneurial success

4.4.1 Human and social capital

A number of findings uniquely related to innovative digital start-ups were identified, even as many others were found to be shared with other types of ventures. Background, characteristics and capabilities: Family support of the venture can make a crucial difference to entrepreneurial outcomes:

> …in the case of two of the founders, our (now) wives really sort of footed the bill of keeping us afloat and fed and housed while we were building this product. (Casey)

The co-founder of the creative and software marketplace had a technical background relevant to the new venture but his retired CEO father reviewed his business and financial documents.

GradConnection's founding team represents founders who became familiar with the industry they entered as participants or users. All three co-founders were in the Westpac graduate programme. Hill had a more intimate connection with the sector in which he practiced his new venture. He was a teacher in the NSW school system. Jasper had worked on Internet projects in a large consulting firm and his co-founder, also a close friend, Phillpot worked on construction sites as part of his job at Multiplex. Barrie's mother operated a website and it was while helping her that he stumbled upon his business idea. The founder of the legal services software company started work maintaining the computer systems in his father's law offices and the co-founder of the creative and software marketplace was a seller of creative works.

Analysis of founders' background suggests that all of them were opportunity-driven entrepreneurs and not necessity-driven, a phenomenon consistent with the Australian GEM data (Kelley, Singer & Herrington 2012). Casey, Jasper, Hill and the founders of the online coupon repository talked about leaving their job either towards the beginning or at the validation or initial success of their start-up.

Founders do not need to be substantially familiar with the area of their enterprise. However, a casual familiarity as a participant in that industry as a user or as a supplier or as an employee was present in most cases. Those founders who were employees were not entrenched – they were employees only for a short time before they identified a need and decided to solve it with their own start-up.

Performance persistence: Half of the founders are currently working on their first successful venture and the other half have worked on two or more ventures – within this group of six founders, half are on their second venture and the other half on a third or more ventures. Performance persistence is not a feature of the group of entrepreneurs in this study as most founders who worked on more than one venture had a failed start-up in their portfolio.

Mindset: Lentell talked about having a mindset. "There is no real experience or insight to how to really do a start-up, or how to innovate with nothing, or how to disrupt." Being entrepreneurial while at his large company employer Oracle would have meant doing something similar to his employer at a lower scale. But he acquired the 'start-up mindset' at OzEmail where he worked under "the brilliant technologist founder" while his co-founder Turner worked under Malcolm Turnbull who was Chairman. It was at OzEmail that they acquired the mindset to work on Internet ventures:

> The pivotal thing is how to think. There was no way we could have done what we did if we'd stayed at Oracle. What we learned in OzEmail was what rubbed off on us when associating with people who were innovating, who were taking risks and who were diving in and going and just saying, this is a good idea, this is how we go about it. Let's go and do it, and we will continue to innovate around that. (Lentell)

Lentell described the opposite mindset to a start-up mindset as risk-averse, careful, worried about the future, liking certainty, needing to plan, needing assurance, treating innovation as risk, not needing to change, and thinking that it might not work.

Wu alluded to a similar idea when discussing founders' intuition about human behaviour:

> Essentially, the kind of trait that I'm looking for is: Do these people have a unique vision and understanding about the world? Or have they arrived at these conclusions through first principles? First principles are really thinking about the basics of human behaviour or the basics of human civilisation or the basics of why do we work? Why do we want to transact? What is the foundation of capitalism? These very, very basic building blocks of how you end up making conclusions about your product or these first principles are the kinds of things great founders spend a lot of time thinking about. (Wu)

Naïveté as a theme appeared frequently. Contrary to expectation, it is a key strength of the founder because of the openness and willingness to discover that it engenders:

> Enough naïveté was a key attribute we had. (Founder of an online coupon repository)

> With great naïveté, left the job and set up in the garage. (Hill)

> We were very naïve not to realise that we were lucky to raise that much money. (Jasper)

Learning, especially continuing learning, is emphasised to increase the repertoire of skills with traction and success.

> I had this idea that there was a proper business way to do things. May be there is one in a secret book somewhere, but I've come to the general conclusion that you find your own path…I didn't know anything about running a business, I would just read books about franchising, books about HR management, leadership etc. (Founder of a creative and software marketplace)

Cannon-Brookes referred to this concept as 'scaling as yourself, as an individual and founder'. He said:

> You're going to hire a bunch of people. How are those people going to have the same success you've had early when you're not actually writing at the keyboard yourself. (Cannon-Brookes)

This theme of 'scaling yourself' is repeated by the veteran online advertising founder as he mentioned, "Often the business grows faster than the individuals themselves can grow".

> We learned an awful lot in terms of how to think, and the mindset of how a fast-moving start-up in a growing industry worked. How you don't know everything, you just dive in and you start doing it. You do things that you don't know are working but then you have ideas around that. (Lentell)

General education: All founders with just one exception have university degrees. Barrie has multiple masters degrees. However, no founder mentioned germination of the idea or vision inside a university. In terms of general abilities that helped the start-up process, Hill mentioned, "I played a lot of chess, so that helps on all sorts of higher order activities, being able to visualise things and so on, strategies and so on." It may be noted even though only one of the founders started a technology-based new venture, all but one of the founders had a STEM (Science, Technology, Engineering and Mathematics) basis in their education.

Specific education: All founders except one had an educational background in STEM (Science, technology, engineering and mathematics) and especially computer science or information technology.

> I had a computer science background, Dave had a IT marketing background, and Dan had an information systems background. We didn't meet at university. We all met at Westpac, but we all came ... Dave and I would have done the same papers at university as well…while we were good at programming we weren't the best at programming. (Casey)

Most founders themselves or their co-founders were hands-on in the technical creation of their websites. However, all such founders were quick to point out that they were not expert programmers or technologists. They understood technology

enough to create the website application at the time of launch or, as in the case of technologically innovative product, biNu, to recognise one when they came across it.

> I think of myself as a generalist, happy to do all kinds of stuff, good at many things, not very good at anything and I think that's really good for bootstrapping. You need to fit into many roles. (Founder of a software and creative marketplace)

> There is a joke about founder code - every time someone finds it and removes, they go around, everyone cheers. …we did two things right: Wrote crappy code that got us to the next phase and secondly hired really smart engineers who removed our code. (Cannon-Brookes)

> I was, at the time, quite interested in computers. I was using his computers at night. He ended up seeing that and gave me the job to look after them. (founder of legal services software)

> There's a really, really good balance between intuition and analytics….I think great founders are really, really, really strong in at least one or two areas and they mitigate for their weaknesses in the other areas and that actually has some implications. What I just said also implies that you have the emotional intelligence to be able to self-assess objectively and accurately from where you're weak and being able to hire for those people. (Wu)

Skills: Selling and negotiation skills were highlighted as specific skills that helped founders gain traction. But patience in achieving specific objectives was important too. It took several months for Barrie to purchase the domain name - freelancer.com after a long drawn out negotiation with the owner. But it turned out to be one of the most crucial decisions to achieve traction.

Prior experience: Founders' prior employers varied from large companies such as Oracle, McKinsey & Co. and Westpac, to being a diplomat and of course previous entrepreneurial ventures in the case of serial entrepreneurs. However, in a quarter of the cases, the founders started a new venture without substantial experience. A few highlights were:

> …a long series of different kinds of tech roles, all the while starting up businesses on the side, different kinds of web consulting businesses. Essentially I had done almost every role you can imagine in tech, so from systems administrator to network, protocol designer to program manager, product manager to game designer, game producer to venture capitalist to investment banker and research equity analyst to co-founder. (Wu)

Personal networks: Social capital did not emerge as a major theme except in its role of bringing together founding team members which, for example, arose from personal friendship (Atlassian) and professional relationship in workplaces (online coupon repository), besides one of the start-ups making some initial sales to friends.

In general terms, Australian start-up founders were described as of world-class quality by Barrie. Lack of funding and support leads most companies to 'bootstrap' and raise money by actually selling a great product or service to customers, making the Australian start-up market highly meritocratic. Wu alluded to founders' capabilities and characteristics as a key factor in saying, "What we don't talk about is that people are born with different kinds of attributes, assets and resources".

Founder relationships: At the early stage of a new firm, the organisation consists mainly of the co-founders and their relationship plays a key role. A capable founding team that works together effectively was a prominent theme. The consensus was having a founding team of two to three co-founders. The veteran online advertising company founder is "not a great believer in the 'heroic founder' model". Lentell represents the long-term relationship at its best, partnering with Turner across three start-ups over about 20 years. Chemistry between the founders, trust, communicating well together, having a complementary skill-set, and the ability to withstand uncertainty and fluctuations together were sub-themes. :

> I founded the company with three other co-founders all of whom looked amazing on paper. But put us all together and we weren't a great team and any other decision I made after that point didn't matter. That was the big failing decision. (Wu)

> If your idea is any good and your leadership is any good, there ought to be a number of other people that are willing to turn their lives upside down and join you…if you can't find anyone who wants to be part of this thing then I think the market is trying to tell you something. (Veteran online advertising company founder)

> I think the other thing is having a solid partner. Rob and I go way back before we started Aconex, before he was at Multiplex and I was at McKinsey. We were at a boarding house together, so we've known each other since we were teenagers…we knew each other well and I think we supported each other during that process. (Jasper)

4.4.2 Environment

Government policies, clusters and networks, PESTEL (political, economic, social, technological, physical environment and legal dimensions of environment) were almost absent, save for Aconex's survival and growth as a result of a general 'speeding up of the Internet' due to broadband penetration and lowering cost of storage over the years. The cost of building a new innovative digital start-up has decreased, which has led to 'bootstrapping' as a viable option. In other cases, raising finances in the seed round is easier and less expensive (generally in terms of giving up equity ownership). But the path from the seed round to eventual listing is difficult in Australia. In fact, Barrie described the funding climate and environment in Australia as 'pretty woeful'." Also, external resources such as access to technological assets are no longer a differentiating factor with the arrival of Platform-as-a-Service (PaaS) and other scalable web services that can help any rising company to scale their technical infrastructure quickly. Instead, it is internal capabilities such as design and user experience that are key differentiating factors. Entities related to start-up environment such as venture accelerators, government agencies providing subsidies or services such as (erstwhile) Commercialisation Australia or AusIndustry, Austrade, and other trade associations were conspicuous by their absence. Crowdsourcing and Australian Stock Exchange (ASX) listing were mentioned as the best financing options.

4.4.3 Organisational decisions

Purpose, vision and values were repeatedly emphasised by founders. Jasper said "We kept those over time and we spent a lot of time thinking about values." Cannon-Brookes talked about scaling the company culture as the company grew in terms of not losing the culture as the company grows. Founders' involvement in all the important aspects of the company was emphasised. This is especially relevant to innovative digital start-ups in which sales are made with the product and not personally and so it is important to ship quality software because "if our product starts to suck, the whole thing falls over". Hosking remembered rejecting their first major idea and vision because the founding team's response to the question "Do we really want to spend the next period of our lives building something that we won't use, we don't think our friends won't, but we think somebody else will?" was negative. Hosking also talked about a values-driven decision-making perspective in which he

refused to include advertising on the website as it was not in the interest of the artists who are RedBubble's key partners.

In the early days, an image of a business that was larger than a sole founder or founding team was projected by referring to a team and projecting an office address even when they were operating from a residential apartment, a common feature of several of the early start-ups. On the path to scaling, most founders moved offices several times to accommodate people. Barrie found the sole offshore contractor who came with the business acquisition to be much more effective than an offshore outsourcing company in the same country. Barrie talked about building credibility with an advisory board.

In decision-making processes, Cannon-Brookes thought "some of the best decisions are those that we were forced into." After failing in their first attempt, Casey and his co-founders tested an idea in the marketplace by pre-selling it with a view to adopt it as a product and develop it if they succeeded in the pre-sale. Cannon-Brookes alluded to prioritising decisions by the type of decision. He said,

> There are execution decisions which you need to do really, really well constantly to keep growing at a constant rate. But then you also have to make inflecting decisions or step-change decisions that means that the chart inflects and keeps growing at a different rate with the right execution decisions. And you make very few inflection decisions. (Cannon-Brookes)

But those decisions are so crucial to the success of the venture that "if we'd made them differently in our first five to six years, we probably would have ended up in a different spot".

Hiring emerged as one of the most important organisational decisions. It was important to look for start-up mindset in employees, typically those who were willing to risk at least a part of their earning for higher growth. The veteran online advertising founder observed:

> At the peak, most of our team were earning more money from their ownership in the company than they were from their wages so we all thought like shareholders, not like employees, and that's the way you want it to be, but again different people are in different situations…. I don't want people trying to live on less than they need and causing

stress for themselves or their families but by the same token if they can take the minimum that they need to be comfortable financially, rather than the maximum that they can get in the labour market, and they're willing to take the rest in upside, that's always the best option. (veteran online advertising founder)

Jasper: "Ultimately hire local. Whenever we got into those markets we'd try to build a local team as soon as we could."

The continuing learning theme of 'scaling yourself' was discussed earlier. It was re-asserted as an indicator of the team member's, including founder's, progress. "People who cannot scale themselves with the company should be asked to play a different role. You should always reward loyalty but not at the expense of the mission", said" (from the experience of the online advertising veteran implying co-founders who cannot keep pace with the learning required to service the growth should step aside. Wu emphasised the importance of reverse founder vesting so that founders who chose to leave or lost interest were not a burden on the start-up.

4.4.4 Opportunity

Start-up founders explored opportunities to create value in different ways: One serial founder met a potential investment seeker, explored a side project of that engineer and liked it enough to purchase the rights of that technology to form the basis of their next venture. In another case, all three co-founders of GradConnection found a gap in the graduate employment process that they had recently experienced and decided to enter that industry. Barrie stumbled upon online freelancing while working on a small web project for his mother. Hosking evaluated an idea that existed in the USA to adopt it in Australia but in the discussion with the founding team, iterated it to a business that was acceptable to the sensibilities of the founders.

Exploiting the opportunity to capture value is important but founders advised patience. "There will be commercial opportunities you cannot envisage, you don't know about them yet" according to technology innovator Lentell. "When things are moving quickly driven by innovation and change, the most important thing is to get in and start playing. Run with it. Adapt and innovate and move quickly within that river that is starting to flow." On the other hand, Hill saw "in my head a full, complete solution for mathematics, a big, somewhat complicated project but a big ticket item.

Second was a very simple one - a resource generator for teachers." So a common theme was the interplay between the core idea and vision and then going to market with it and learning from the market feedback. In some cases such as GradConnection, the first big idea was not validated and it was changed, in most others, the original vision was validated and a business model emerged during its execution, as Hill said, "I hit upon something that really met a need." Interestingly, even though all the applications in the case studies can be referred to as innovative, founders did not emphasise their pioneering or innovative aspect. Their focus is on the vision of the solution to a problem they are trying to solve. Wu refused to be distracted by industry news and refuses to even want to "know what other people are doing, even what possible competitors are doing".

4.4.5 Strategic decisions and processes

Founders overwhelmingly said that creating an elaborate business plan in a fast moving, innovative marketplace is not needed. They emphasised having a broad, 'big picture' vision and a solution for customer need, and work with customers to test and validate it. Casey made a business plan for the first concept that did not succeed in the market and didn't make it when implementing the second one. The creative and software marketplace founder "wrote this business plan that was completely useless". Hill "made it up as we went along". Naïveté was deemed a better guide as it led to them to be open to all options and enabled learning.

Focus was an oft-repeated theme. Founders emphasised validating the core solution in the market by making sales and improving the core features of the solution, and not introducing scores of new features, not even adjacent ones. The founders of the online coupons repository had "a laser focus on building the best user experience". Sometimes, a goal provided focus. For example, Atlassian had a goal of 50,000 customers, Redbubble had a goal to improve gross profit to 30 percent.

There was a focus on specific target segments, notably, RedBubble's on the artists, GradConnection's on the employers of graduates, the online coupon repository focused on the consumers, as opposed to art buyers, students and merchants. As Hosking said, "You can't claim it's going to be equally good for sellers and for buyers all of the time. You can't optimise on that." The online advertising veteran,

"Whatever I am doing next, I'm going to know who the customer is and I'm going to identify that and I'm going to focus on that with relentlessness."

Another dimension of focus lay in terms of revenue sources, marketing tactics, sales channels and product features. Founders alluded to making decisions within the values that they had defined. For example, both RedBubble and the online coupons repository refused to introduce advertising on the website. This led to significant, potential loss of additional revenue but this revenue was not acceptable at the cost of user experience, design or any other loss to the core audience.

Purpose and values were highly emphasised by founders. The significance of purpose was brought out by Jasper when he referred to the massive challenges that start-up founders invariable face in which he said:

> I don't think anybody wants money so much as to be prepared to put themselves through this much grief. The only reason why you're going to do it and the only reason why you're going to convince other people to do it is because they fundamentally believe in what you're trying to do. (Jasper)

Values were often customer directed, not internally focused. For example, RedBubble's 'We stand for artists' value guides their decisions and is understood by founders, investors and staff.

Timing was emphasised by Hill:

> Here was a new Mathematics syllabus that had just come in that forced a change on teachers in New South Wales. It was a captive market at that point. (Hill)

For the legal service software founder, the Y2K (Year 2000) bug came as a big boost as customers were predisposed to buy new computer hardware and the associated software. This resulted in a fast growth period. Jasper realised that the market was not ready for their original marketplace solution as people were not prepared to transact online. This realisation led him to shut down the marketplace and focus on collaboration.

Founders frequently referred to a match with customer needs and a sales focus in their business model configuration decisions. For example, GradConnection changed their

main offering to an advertising offer, a concept that customers were familiar with in reference to hiring, and priced it a level that qualified for discretionary spend. They found their success with that 'pivot'. Aconex spent a year working with the customers and getting the first few deals when they found that their original vision of a construction marketplace was 'too early' while the secondary idea of collaboration found a better response from customers. This method also helped them avoid potentially mistaken pricing. They had the additional issue of encouraging adoption of the system by not just the main parties of owner and contractor but also engineers and architects to avoid their product being rejected. Mainstream adoption is accelerated by network effect but personalised face-to-face training and support was required before traction was reached. For Freelancer, the traction was consolidated with the acquisition of direct competitors and even adjacent players such as forums and communities. In fact, Barrie has acquired 13 companies.

More than two-thirds of new ventures were born global to serve the global customer. RedBubble and Freelancer had both the demand (art buyers and employers) and supply (artists and freelancers) sides located globally. As the founder of the creative and software marketplace said, "We always looked at it as a global market. I think the beauty of the Internet is that you can go for global markets." On the other hand, Mathletics initially served NSW teachers, Aconex served the Australian construction industry and GradConnection served Australian large companies before these were internationalised. For GradConnection it was an imperative because a lot of Australian employers had headquarters in Singapore and Hong Kong making it an 'organic expansion'. Providing support in real time was one of the compulsions that forced Atlassian to open offices globally. Jasper advises "the earlier you can get global the better….but it doesn't have to be USA in the first phase… as it may not be the best market as a first step out from Australia." But this also implies that "You need to fundamentally be able to be the best in the world at what you do", as Jasper mentioned.

4.4.6 Product & market development decisions and processes
Building a minimum viable product (MVP) was advocated by Lentell. Launching the MVP is followed by listening to user feedback and then constantly iterating to assess its effectiveness. Casey followed a version of this process that involved a very 'light

MVP. It comprised just a presentation containing the plan of a website that they presented to potential customers. Acceptance of this presentation and the sales that were generated as a result provided the traction that GradConnection was looking for.

Founders followed different approaches to product development. Barrie and the online coupons repository founders relied on analytics based methods such as A/B testing but Hosking believed in a "mixture between mathematics and the heart".

Branding was a major theme that stood out. For Freelancer, acquiring the domain name freelancer.com was a decision that required considerable investment but provided them a major competitive advantage and improved traffic dramatically. For Cannon-Brookes, design was one of the fundamental differentiators. Hosking spent a long time considering the brand. Others considered brand as not just a name and design but also reputation. A human dimension in customer service was mentioned. The value of real time customer service was emphasized.

Quality assurance processes in application management were flagged as a key risk in new ventures. Jasper narrated an incident in the early days of internationalisation in London when a small mistake put the system offline for 12 hours. There was advice on the need to track technology changes and invest to bring new innovations to the market. For example, the advent of mobile has changed the expectations of customers and they expect applications to be responsive to different devices – laptops, tablets and mobile phones. A venture such as Aconex, which is particularly used on construction sites, needed to mobile-enable their applications to keep themselves relevant.

While there are different tactics that founders used to build 'market traction', a few of the common elements were: to demonstrate the existence of customers and traction when none existed; creating transactions in the marketplace as sparks to produce network effects; bringing all participants in the industry to the platform to ignite collaboration using the application as a platform; bringing traffic from search engines; increasing usage; building ground-breaking features.

Table 2: Examples of activities that generated traction

Name of the start-up	Event that led to achieving traction
Aconex	Pricing to encourage all project participants to join the platform and generate network effects
Freelancer	1) Change in design. 2) Change in domain name
Atlassian	Early sales to friends working in software companies.
GradConnection	Enterprise sales with upfront payment while the product was being developed at a price low enough to be discretionary spending by managers
Mathletics	20% success rate on direct mail to NSW school teachers on a product that had customisation features
biNu	Acquired 5000 users when the biNu app was launched in App store during World Cup soccer in South Africa
Software and creative marketplace	1) Credit give-away promotion. 2) Showroom feature
Legal services software	Clients bought new software with the new hardware they were buying to solve Y2K issue.
Online coupons repository	Mention in a radio show that was syndicated to 500 radio stations in the USA.

The key marketing enablers differed for ventures. For listing based ventures, acquiring content as listings was key. They incentivised the supply side to enter content with incentives, signup bonuses, special rates, competitions, give-aways and often acquired these on their own by plugging into other websites with APIs (Application Programming Interface) and scraping listings.

For SaaS and enterprise software ventures, differentiation was achieved by integrating with a number of other complementary applications. In these cases, customer education was key:

> Back then I used to go out to the construction sites and wouldn't just be speaking to people about what we do. We actually had to explain almost what Internet was. (Jasper)

Building the initial traction in these businesses is difficult but after a tipping point is reached, the 'network effect' results in momentum and the venture starts generating strong returns and profitability. These returns can be sustained if switching costs are incorporated. Public relations was used as a means to build brand and winning awards was major part of the PR effort. However, one founder (Wu) also termed it a

distraction and advocated focus on customer acquisition, customer lifetime value and the ongoing survivability of the business**.**

4.4.7 Closing notes

A complex web of factors has a bearing upon new venture creation and success (Duchesneau & Gartner 1990; Michael A. Hitt, R Duane Ireland, S Michael Camp and Donald L Sexton. 2001). The findings in the case studies are, as expected, mixed. Many of the findings were expected and do not add value to the knowledge we already have about entrepreneurial performance factors from the peer-reviewed literature. But there are several findings that have helped in understanding innovative digital start-ups, especially from the perspective of founders. The insights that have helped add value to the repository of knowledge about this type of start-up are discussed in the next section.

5. Discussion

This study was based on the premise that innovative digital start-ups are unique because "the unique properties of digital technology enable new types of innovation processes that are particularly rapid and difficult to predict and control" (Nylén and Holmström 2015). The inherent uniqueness of innovative digital start-ups therefore likely translates into differences in characteristics and capabilities of entrepreneurs and how they explore and exploit opportunities from other entrepreneurs building innovative business models that rely on web and mobile applications to solve customer problems.

The analysis of the narratives of the "early days of Australia's great technology companies and how they got started" (The Sunrise Conference 2015) and additional interviews with successful founders have provided useful insights. Many of the findings confirmed existing insights discussed in previous studies. However, a few broke away from conventional knowledge about how digital start-ups succeed. Most interestingly, several insights broke new grounds by indicating that successful founders of innovative digital start-ups tend to have different priorities, patterns of thinking and processes.

5.1 Success factors: Revisited

Gartner's (1985) integrative framework identified four main categories of performance factors: process, individual, organisational and environment. The analysis of the founders' narratives and interviews shows a strong emphasis on process. This is in line with practitioner literature which attempts to create a formula of success by organising a complex entrepreneurial process into 'stages' for different 'types of ventures' based on 'indicators of progress'. However, in contrast to this literature, the founders in the present study focused on more abstract notions related to process such as vision, purpose, values and focus. This is a reminder of Porter's (2001) assertion that commonly available technology cannot help distinguish a company. Start-up development methodologies, cloud infrastructure, inexpensive offshore outsourcing for coding and other common resources such as SaaS services to conduct business functions cannot replace a unique, differentiated product or service as the core of a new business. Opportunities do not merely arise from a mechanical

process. Instead, a unique mix of factors are involved in each case that may interact with background, education, experiences and insights for entrepreneurs to have a certain set of beliefs and views about values of resources. Information corridors and cognitive properties play a role in the forming of these beliefs (Shane and Venkataran 2000).

However, it is in the 'individual' strand or Shane and Venkataraman's (2000) category of 'why when and how some people and not others discover and exploit these opportunities' that this study has brought forth the most valuable of founders' views on concepts such as 'mindset', 'naïveté' and learning articulated as 'scaling as yourself'. The emergent characteristics and capabilities are in sync with the core practices of modern methodologies such as learning which is an important indicator of progress for Marmer et al. (2012), an open mind, assumed to be essential in 'getting out of the building' required by Steve Blank (Cooper and Vlaskovits 2010), and the discovery process inherent in 'getting to plan B' (Mullins and Komisar 2009).

The 'organisation' strand does not garner much attention in the study as it is easy for co-founders to define and control the values and culture in the early stage of the venture at which time they are most involved in achieving a product-market fit which is a 'process'. Further, they are internally directed and not concerned with clusters, networks and environment. The following sections analyse these factors in detail.

5.1.2 Human and social capital factors

Technical understanding of web and mobile application in the dimensions of programming, application design and hosting, user experience, visual design, and 'growth marketing' are important requirements for achieving traction from the perspective of founders. However, contrary to common assumptions, many of the founders highlighted that a high level of expertise was not needed. Instead, knowledge that is sufficient to get hands-on mainly in the early stages and occasionally later is needed. In addition, capability to assess technological options and processes is sufficient to be successful.

An important characteristic of successful founders is a 'start-up mindset' that demonstrates higher acceptance of uncertainty, comfort with failure, thrives on

change i.e., it exhibits expected entrepreneurial orientation characteristics (Lyon, Lumpkin and Dess 2000). In addition, a founder of an innovative digital start-up requires a 'digital start-up mindset' which includes knowing the scaling potential and unique capabilities of the Internet and its applications, understanding the expectations that online users have of their online experiences, and knowing how to craft a value proposition specifically for an online audience. Playing in a global arena that the Internet readily enables, come naturally to such a mindset. Also characteristic of this mindset is a belief in the openness of Internet as a marketplace as a principle which implies that their application as well as those of competitors are equally accessible and just one click away either on the web or at most on a merit entry based 'app store'. They resist attempts to create 'walled gardens' within the Internet. Such founders often exhibit naïveté, which leads them to be open to learning from a range of sources. The founders use experimentation to learn to achieve important objectives such as reaching a product-market fit, are willing to abandon their best ideas in order to 'pivot' to a better performing idea and use 'hard' analytics in conjunction with 'soft' intuition. Continuing learning, or as one founder described as 'scaling as yourself', is a crucial part of this mindset.

Common human capital features of successful founders are University degrees in STEM subjects especially in Computer Science, often multiple qualifications, a stint in consulting or a short employment spell in the industry they choose to start-up. The presence of these qualifications aligns with previous research on human capital that people with a high explicit and implicit knowledge tended to discover high growth opportunities (Davidsson and Honig 2002). It probably helped founders acquire the 'digital start-up mindset'.

A 'digital start-up mindset' does not seem to be a natural occurrence, rather formed with a technical oriented understanding of how the Internet is formed and operates as a network, a business oriented understanding of global markets and supply chains, and online human behaviour and needs. It may be posited that this mindset naturally arose in Computer Science graduates during the 1990s and early 2000s because of their 'luck' and 'timing' to access the explicit knowledge required for this mindset. However, as STEM and specifically computer science becomes more popular and work experience related to digital products and services become more common, a

broader cross-section of entrepreneurs will possess the additional 'digital' component to complement their 'start-up' mindset.

In a country where funding and institutional support at the early stage of new ventures is not highly developed, start-up founders rely on bootstrapping. Therefore, financial support from the family, either a working spouse or parents, is important. Social capital emerged as a factor, albeit not strongly. Friendships and personal relationships led to discovery of co-founders. In one case, friends were instrumental in initial sales. In another, the first employee was a neighbour. So, the findings agree with the importance of bridging social capital and weak ties in the discovery process (Davidsson and Honig's 2002).

5.1.3 Environment

Government policies and support such as that offered by AusIndustry was not mentioned as having played a role. Clusters and networks, which are manifest as start-up eco-systems, venture capital firms, angel investors, co-working spaces and accelerators did not emerge as themes.

It is disappointing to note that government support such as grants and incentives via industry or innovation agencies and university business faculties with their entrepreneurship clubs and associations are conspicuous by their absence in playing any role in the start-up or development of any of the ventures studied. However, it may be noted that most founders in this study started their ventures at a very early stage of technology cycle when components of an eco-system were either absent or immature. Therefore, environment could not be explored in detail and no generalisations should be made about the effectiveness of institutional framework of entrepreneurship. Gilbert, McDougall & Audretsch's (2008) theories about geographical industry clusters due to knowledge spill overs may be applied in future studies in accelerators and co-working spaces.

5.1.4 Organisation

The two most important elements of an early stage organisation that emerged are quality of founding team relationships and quality of hiring. A team of 2-3 founders with complementary skills, ideally design, programming and growth marketing or sales is ideal. But more important was chemistry between the founders, trust, high

quality of mutual communication and ability to withstand uncertainty together. The second important organisational priority is quality of hiring. However, both these findings are expected in a start-up.

5.1.5 Strategic decisions and processes

The strategy to explore opportunities and create value was based on focus. Focus was manifest in the preference for targeting a single or limited number of options. Examples of this approach are targeting a single audience and succeeding with them before investing in others; using a single distribution channel; and directing resources to a single, simple product.

Business models have emerged as a source of innovation (Trimi and Berbegal-Mirabent 2012). In fact, only one founder (Lentell) in this study had innovated on technology. In all other cases, it was business model innovation. The aspects of business model in which they innovated the most were distribution channels, value proposition and revenue. They also innovated in multiple aspects of business model. For example, in the context of Osterwalder and Pigneur's (2011) Business Model Canvas, Aconex not only innovated on pricing by offering access to unlimited users for a negotiated price (revenue) but also offered it as a SaaS product (distribution) and introducing a new feature of collaboration (value proposition). Correspondingly, they used multiple value drivers within novelty, efficiency, complementarities and lock-in to create value theorised by Amit and Zott (2001). For example, Aconex used novelty and lock-in by offering a new collaboration platform and offered unlimited user access to tie in all the stakeholders to the platform.

It was observed that business model development tools such as Business Model Canvas by Osterwalder and Pigneur (2011) were not used by the founders in this study because innovative digital start-ups of the predated widespread use of such tools. However, their implicit innovations reflected business model concept. Future start-up founders have the advantage of availability of business model tools that are designed for collaborative use.

Founders were highly conscious of timing. They interpreted timing by readiness of customers. This was consistent with an industry practitioner finding. Bill Gross, the founder of Idea Labs, a leading Silicon valley based new venture accelerator, with

experience of founding 125 start-ups determined in a practitioner study that timing of starting up is most important and the "best way to assess timing is to really look at whether consumers are really ready for what you have to offer them" (Gross, 2015).

Founders had a focus on vision, purpose and a set of values, which determined their search for a business model and a strategy. It was expected that the successful founders in this study would not have followed a business model tool explicitly as the popular business model tools such as Business Model Generation (Osterwalder & Pigneur 2012) have appeared only in the past 5 years. Mullins & Komisar (2009) explain why entrepreneurs must never get too attached to a business plan because the purpose of a start-up is "to evolve to a successful business model". Other tools and frameworks such as Customer Development Model (Cooper and Vlaskovits 2010) and The Lean Startup (Ries, E., 2011) similarly emphasise gradual discovery of a viable business model.

One of the patterns of building their business was to form a vision of solving a customer problem identified in an industry that they were familiar with. The forming of strategy was gradual and was linked with implementation. The founders followed a cycle of customer feedback often as part of sales and making changes in product and market decisions such as pricing, going global by selling or offering support in other countries and hiring. In essence, they were following Customer Development Model (Cooper and Vlaskovits 2010) and Marmer et al. (2012) Stage Consistency. Therefore, the practitioners' claim to "crack the innovation code of Silicon Valley" does seem realistic.

5.1.6 Product and market development processes

After setting a vision on solving a particular customer need, the founders were open to try different approaches, learn and execute product development and growth marketing in tandem to attain a product-market fit. It was not clear in the practitioner literature about what constitutes 'traction'. For example, achieving a product-market fit was considered 'traction' by a few such as Maurya (2012) but for Weinberg and Mares (2014), product-market fit was only an enabling condition. The successful founders considered this 'product-market fit' as a solution that was accepted by the market at the price and features offered. But they understood that it took considerably

more effort to truly get traction, which was attained with branding, promotions, enterprise sales (where applicable) and marketing to increase conversion rate, reduce cost of acquisition of customers and improve growth in revenue and users.

While there are different tactics that founders used to build traction in the market, a few of the common elements were to demonstrate the existence of customers and traction when none existed; creating transactions in the marketplace as sparks to produce network effect; bringing all participants in the industry to the platform to ignite collaboration using the application as a platform; bringing traffic from search engines; increasing usage; building ground-breaking features.

5.2 New directions

5.2.1 TrAction

Insights from founders' perspective of their success, scholarly literature in entrepreneurship and strategic management, and modern practitioners' literature on start-up growth and development are combined to propose new directions for future research in the form of a 'TrAction framework'.

Formed with the words 'trajectory' and 'action' and expressed in medial capitals typical of computer programming, this framework signifies a set of key insights relating to 1. Setting a trajectory with a vision and purpose oriented towards solving a significant customer need, focus on a limited number of features that contribute to business model innovation in multiple aspects, choosing appropriate timing on the basis of customer readiness, building a capable founding team, placing 'founder survival' mechanisms to maximise the time and resources that the founding team may consume in case their traction is delayed, and establishing a set of values revolving around customers. 2. Taking action by executing within a Customer Development Model (Cooper and Vlaskovits 2010), relying on iterative learning leading to development of a high quality product driven by user experience, and achieving ongoing excellence in branding, customer service, innovative growth marketing and quality application and platform management to first achieve product-market fit and then enhance growth in revenue and users.

Figure 5: TrAction framework
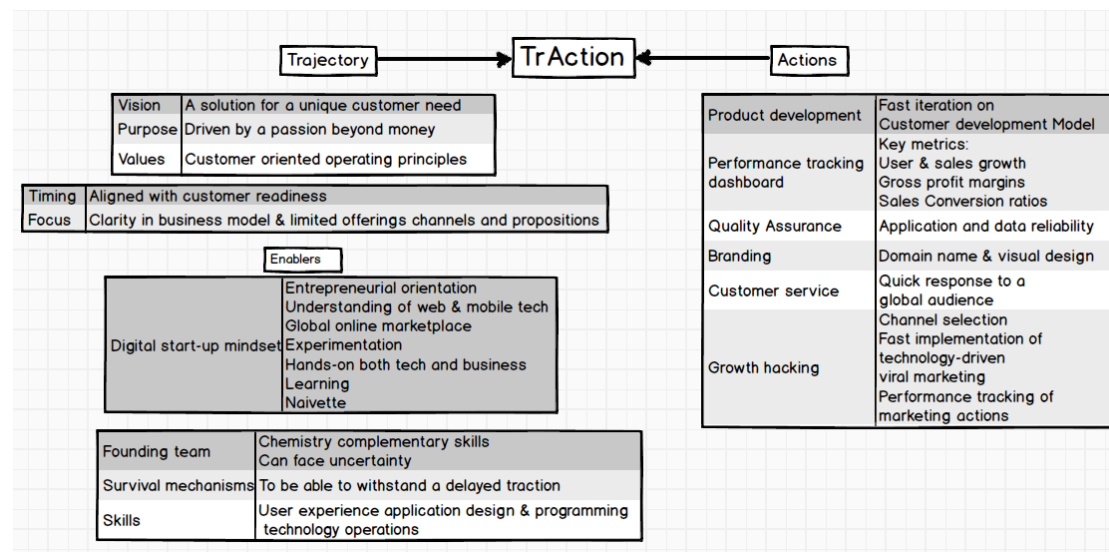
5.2.2 digital Technology-based Innovative New Venture (dTINV)

In the search for a definition that may describe innovative digital start-ups in a generic as well as distinct way, it was found that DS, TNV and TINV were defined for specific purposes. Therefore, digital Technology-based Innovative New Venture (dTINV) is proposed to be defined as a new venture that satisfies the three conditions of 1) "introducing new products, targeting new markets, defining new business models, establishing new distribution channels, introducing new organisational forms, or launching innovative technologies" (Barnir 2012), that it exhibits Marmer's (2012) high growth intent; and finally 3) it uses web and mobile application in the core of its innovation.

In addition to the above qualifications, a 'dTINV' would typically exhibit most or all of the supplementary features discovered as a result of combining practitioner literature and founders' narratives. Less cost and time is required to prototype, and to develop and deploy a business model (in comparison to 'non-dTINV' businesses).

> Marginal cost of software is zero and there is only one copy of a marketplace software so you only have to update it once. (On the other hand), every day I go to work at Sensory, there was this smell of money burning in fixed costs, logistics and indirect expenses. (Barrie)

Further, Performance of a deployed business model can be accurately measured; learning is quick and cheap to incorporate; business models are malleable and easy to modify and evolve; and validated business models are fast and easy to scale

> The great thing about the Internet is you've essentially got built-in scalability. Occasionally, you'd have to add a new block of hardware, a new block of service, but once you did that step change, essentially you had complete scalability until you hit the next point. (Jasper)

Founders require a combination of strategic thinking, creative and technology skills underpinned by a 'digital start-up mindset' at the early stage of start-up. Founders assume Internet to be an open marketplace with no artificial lock-in of resources by incumbents.

> In the Internet world, no one had ever acted as a gatekeeper. The whole Internet mindset and the power of the Internet is if you build a website, it is inherently available to any Internet user in the world. There's no permission required from anyone for someone to access your website. (Lentell)

The features of 'dTINV' discussed above are increasingly becoming more deeply characteristic because of ongoing supporting conditions. On the demand side, a growing connected population, increasing depth of adoption of web and mobile applications, ease of going global and increase in trust and network infrastructure, are assisting 'dTINVs' to emerge clearly. On the supply side, outsourced services which are often other 'dTINVs' such as SaaS and cloud infrastructure providers, improved network infrastructure and growing eco-system of investors, government support agencies and start-up specialist suppliers such as design and development agencies, legal and accounting professionals are contributing factors.

The discussion has led to two novel concepts 1) 'dTINV' is being submitted to the academic and practitioner community to be considered as an area of entrepreneurship. The basic and supplementary features and components of dTINV are proposed in this study and can be developed in later studies. 2) The analysis of founders' narratives and interviews led to several insights on their perspectives of success factors mainly on human and social capital, organisational, strategic and product and market development dimensions. Combined with further insights from academic literature on entrepreneurship, a 'TrAction framework' is proposed that brings together the strategic as well as execution oriented factors that may help entrepreneurs achieve 'traction'.

6. Conclusion

This study on innovative digital start-ups has generated several new insights on factors that affect their success. The primary source was an analysis of narratives of successful Australian founders who recounted the early days of their journey at The Sunrise Conference 2014 and 2015. These narratives were supplemented by in-depth interviews. Practitioners who were former start-up founders themselves have produced impressive amounts of literature that has delved into start-up success. Valuable insights about stages and types of start-ups, and measurements and indicators of success were studied in addition to their start-up growth and development processes. When the practitioner literature was considered in conjunction with a comprehensive review of peer-reviewed literature, the realisation was made that the former were often 'translating' the basic principles of the latter in start-ups. In the process, a few unique insights that had escaped the 'translation' were collected. The major insights are presented as a 'TrAction framework' which bridges the gap between the peer-reviewed and practitioner literature while being mainly based upon the successful practitioners' perspectives.

The present study has a few other unique properties. An outline of a definition and features of innovative digital start-ups are suggested and digital Technology-based Innovative New Venture (dTINV) is suggested as a new sub-area of entrepreneurship research. If this suggestion is taken up by future scholars, then they receive further inputs on the constructs and their level of development. This report will serve as a starting point in their initiatives. For example, the contribution of government support, grants and incentives to such ventures, clusters such as co-working spaces and accelerators can be tested by future researchers. Initial success or 'traction' (as used in common parlance) is a unique aspect. It was chosen because this study has an ambition to contribute into entrepreneurial learning and it was observed that nascent entrepreneurs care most about 'traction'. Addressing 'traction' lends this study the advantage of addressing their concerns directly.

This research is based upon case studies of twelve successful founders from a single country and as such reflects the limits in industry sectors covered. There are methodological limitations of narratives as source of data and modern practitioners'

literature was reviewed in conjunction with peer-reviewed literature. Most such decisions were necessitated by the emerging nature of the industry, constraints in data collection and other concerns.

Innovative digital start-ups, or dTINVs as proposed in this study, are not just disrupting and organising one industry after the other. These organisations are also bringing about rapid innovations. dTINVs are potentially important drivers of economic growth in Australia with massive jobs and export potential. Therefore, it would be essential to understand the nature and process of their creation and destruction, success and failure, the characteristics and capabilities of the people behind these organisations, and their environment and organisation. This study is a step in the direction of knowing dTINVs better.

6.1 Future research

This exploratory study opens the doors to innovative digital start-ups as an important category of new ventures. First, unique properties such as the enunciation of a 'digital start-up mindset', their description of naïveté and founder learning requires further explanation and confirmation. Future quantitative and mixed methods studies may help identify the specific configurations of factors that determine performance in innovative digital start-ups. It may look into the effects of background, general and specific human capital in education and experience, initial capital available, location (such as individual or as part of a cluster) and founder configurations to form organisational structures on success. This research provides a number of potential constructs to test in later studies.

The insights generated from this report may be used in informing future studies on the processes of building business models, exploring and exploiting entrepreneurial opportunities especially with digital solutions and taking organisational development decisions. The 'TrAction framework' may be used to complement contemporary start-up growth and development methodologies such as *The Lean Start-up* and help them emerge as holistic frameworks that combine testing and analytics based processes to a mix of scientific testing with an enunciation of vision, purpose and values and qualities such as focus and timing. The specific effects of branding, customer service, quality assurance and recruitment may be considered in future studies.

Future development of a range of instruments and tools can benefit from this research. An example of such instrument may be to measure entrepreneurial learning levels in individuals to assess their readiness to start or join a dTINV as a founder or employee. Another example may be to holistically assess the maturity of a potential founding team to work together. Universities, especially the business and computer science faculties to begin with, may use several of the insights in this report to strengthen their entrepreneurship courses. Although this study is limited to entrepreneurial start-ups, large companies are increasingly attempting to learn the processes of innovation that innovative digital start-ups have innovated. In Startup Genome Report, Marmer et. al. (2011) claim:

> As the waves of disruption come ever faster, the only way for a company to be competitive will be to behave like a startup. In fact, in order for large companies to be effective at disruptive innovation they need to make structural changes that make them behave nearly identically to startups.

Therefore, researchers may apply the concepts discussed outside of innovative digital start-ups also.

During our lifetime, every industry and every business will evolve to become a technology- and data-driven business.
The technology entrepreneurs….are the key to our future.

Jana Matthews, ANZ Chair of Business Growth, University of South Australia (StartupAUS 2014)

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Appendices

Appendix 1: Working list of innovative digital start-ups whose founders were considered as part of population in this research project

Innovative digital start-up	Note on sources, other criteria used such as stock symbol
Envato	The Sunrise Conference 2014
Aconex	The Sunrise Conference 2015
Redbubble	The Sunrise Conference 2014
Freelancer	The Sunrise Conference 2014,
Atlassian	The Sunrise Conference 2014
LEAP Legal	The Sunrise Conference 2015
99 designs	No special notes
Redballoon	The Sunrise Conference 2015
BiNu / Decide	No special notes
Paymate	No special notes
Wotif	ASX: WTF
Mathletics	ASX: 3PL
Retailmenot	The Sunrise Conference 2014
Seek	ASX: SEK
Carsales	ASX: CRZ
Invoice2go	No special notes
Canva	No special notes
4cabling	No special notes
SocietyOne /	No special notes
Scriptrock	No special notes
Nitro	No special notes
Designcrowd	No special notes
Halfbrick	No special notes
Catch of the day	No special notes
Kogan	No special notes
Shoes of Prey	No special notes
GradConnection	No special notes
Ozsale	No special notes
Looksmart	The Sunrise Conference 2014
REA group	ASX: REA
Spring Source	The Sunrise Conference 2014
BigCommerce	No special notes
Tyro	The Sunrise Conference 2015
CampaignMonitor	No special notes
Stackla	No special notes
SafetyCulture	No special notes
OneFlare	No special notes
iCollege	ASX: ICT
iSelect	ASX: ISU
Ozforex	ASX: OFX
Crowdmobile	ASX: CM8
Shoply	ASX: SHP
iProperty	ASX: IPP
Xero	ASX: XRO

Appendix 2: Interview questions for the semi-structured interview

1. Narrate the story of the initial days of founding the company. In other words, describe your initial journey of founding the company. Other questions, if needed
   - How did you find this idea and the opportunity? Was it the first opportunity you had pursued?
   - How did your background, education, experience, social network or any other form of capital help in the process of exploring the opportunity?

2. How did your business model evolve?
   - Did you employ a formal methodology in designing it?
   - Did your business model undergo any changes from the initial conceptualisation to the initial success and then after that initial success? How, when and why did you make these changes?

3. When did you know that your venture had achieved an initial sustainable success?
   - What signals let you know that you had reached that stage?
   - What were the key decisions that you think helped you reach that stage?
   - What further actions were triggered after you had this realisation?
   - What did you do to ensure that the advantage of getting initial success flowed to your venture?

4. How much time did you take in building the product? What core philosophy, methodology or process did you employ in building the product?

5. What marketing channels did you choose that had the most beneficial impact on the new venture in the initial stages and what process was used to make this selection?
   - Why did you / did you not choose to offer your product globally from the beginning?

6. Describe any other decisions such as in hiring, partnering, sourcing, funding, etc. that helped you achieve initial success.

Appendix 3: Initial list of labels

Definitions

Success
        Measurement
        Traction

Start-up life stages
        Customer development
        Marmer

Performance factors, 'individual'

Human Capital
        Background
        Capabilities
        General human capital
        Specific human capital

Social capital
        Personal networks

Orientation

Performance factors, 'organisation'

Organisation
        Leadership
        Decision-making processes
        Organisational structure
        Human resources
        Finance and venture capital

Performance factors, 'environment'

Clusters
        Networks

Environment
        Competition
        Government
        Regulations
        Venture capital

Performance factors, 'process'

Strategy
        Business model

Value capture
Value creation

Global

Global market
Global supply chain

Innovation

Opportunity

Explore
Exploit

Actions

Growth marketing
Product development

Appendix 4: Final list of labels

Entrepreneurial outcomes
       Uncertainty-
       Challenges-
       Failure-
       Survival-
       Mainstream adoption-
       Evolution-
       Success-
            Traction-
            Measurement-

Human capital
       Background-
       Capabilities-
       General human capital-
       Specific human capital-
       Learning-
       Motivation-
       Founder relationships-
       Characteristics-
       Negotiation-
       Culture-
       Naïveté-
       Social capital-
            Personal networks-

Organisation and structure decisions
       Leadership-
       Decision-making processes-
       Organisational structure-
       Human resources-
       Legal-
       Office-
       Finance & VC-
            Bootstrap-

Environment
       Government-
            Regulations-
       Clusters and networks-
       Competition-
       Internet infrastructure-

dTINV special features-

Opportunity
        Explore-
        Exploit-
        Idea-
        Vision-
        Innovation-
                Pioneer-

Strategy decisions
        Business model-
                Evolution and iterations-
                Platform and marketplace business model-
        Business plan-
        Value creation-
        Value capture-
        Goal-
        Purpose-
        Values-
        Industry focus-
        Focus-
        Timing-
        Life stages-
        Global INV-
                Market-
                Supplier-
                Capital-
        Technology-
        Market research-
        Acquisitions-
        Partnerships-
        Product strategy-
        Pivot-
                Customer development-
                Market need-
                Product features-

Actions
        Branding & naming-
        Design & UX-
        Product development-

Manual work-

Scaling-

Customer service-

Growth marketing-

Network effects-

Switching costs-

Customer acquisition-

Education-based marketing-

Public relations-

Sales-

Content-

Differentiation-

Appendix 5 – Human Research Ethics Approval

Approved - 5201500359
19 messages

Mrs Yanru Ouyang <yanru.ouyang@mq.edu.au>   6 May 2015 at 10:34
To: Dr Yvonne Breyer <yvonne.breyer@mq.edu.au>
Cc: Mr Hasnain Zaheer <hasnain.zaheer@students.mq.edu.au>

Dear Dr Breyer,

Re: 'An investigation into how business model decisions affected the
performance of successful digital Technology International New Ventures
(dTINV) in achieving their initial sustainable success.'

Reference No.: 5201500359

Thank you for your recent correspondence. Your response has addressed the
issues raised by the Faculty of Business & Economics Human Research Ethics
Sub Committee. Approval of the above application is granted, effective
"6/05/2015". This email constitutes ethical approval only.

This research meets the requirements of the National Statement on Ethical
Conduct in Human Research (2007). The National Statement is available at
the following web site:

 http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/e72.pdf.

The following personnel are authorised to conduct this research:

Dr Yvonne Breyer
Mr Hasnain Zaheer

NB. STUDENTS: IT IS YOUR RESPONSIBILITY TO KEEP A COPY OF THIS APPROVAL
EMAIL TO SUBMIT WITH YOUR THESIS.

Please note the following standard requirements of approval:

1.   The approval of this project is conditional upon your continuing
compliance with the National Statement on Ethical Conduct in Human Research
(2007).

2.   Approval will be for a period of five (5) years subject to the provision
of annual reports.

Progress Report 1 Due: 6th May 2016
Progress Report 2 Due: 6th May 2017
Progress Report 3 Due: 6th May 2018
Progress Report 4 Due: 6th May 2019
Final Report Due: 6th May 2020

NB. If you complete the work earlier than you had planned you must submit
a Final Report as soon as the work is completed. If the project has been
discontinued or not commenced for any reason, you are also required to
submit a Final Report for the project.

Progress reports and Final Reports are available at the following website:

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/
human_research_ethics/forms

3.   If the project has run for more than five (5) years you cannot renew
approval for the project. You will need to complete and submit a Final
Report and submit a new application for the project. (The five year limit
on renewal of approvals allows the Committee to fully re-review research in
an environment where legislation, guidelines and requirements are
continually changing, for example, new child protection and privacy laws).

4.   All amendments to the project must be reviewed and approved by the
Committee before implementation. Please complete and submit a Request for
Amendment Form available at the following website:

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/
human_research_ethics/forms

5.   Please notify the Committee immediately in the event of any adverse
effects on participants or of any unforeseen events that affect the
continued ethical acceptability of the project.

6.   At all times you are responsible for the ethical conduct of your
research in accordance with the guidelines established by the University.
This information is available at the following websites:

http://www.mq.edu.au/policy/
http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/
human_research_ethics/policy

If you will be applying for or have applied for internal or external
funding for the above project it is your responsibility to provide the
Macquarie University's Research Grants Management Assistant with a copy of
this email as soon as possible. Internal and External funding agencies will
not be informed that you have approval for your project and funds will not
be released until the Research Grants Management Assistant has received a
copy of this email.

If you need to provide a hard copy letter of approval to an external
organisation as evidence that you have approval, please do not hesitate to
contact the FBE Ethics Committee Secretariat, via fbe-ethics@mq.edu.au or
9850 4826.

Please retain a copy of this email as this is your official notification of
ethics approval.

Yours sincerely,

Dr. Nikola Balnave
Chair, Faculty of Business and Economics Ethics Sub-Committee
Faculty of Business and Economics
Level 7, E4A Building
Macquarie University
NSW 2109 Australia
T: +61 2 9850 4826
F: +61 2 9850 6140
www.businessandeconomics.mq.edu.au/

Amendment Sep15 Approved - 5201500359

1 message

Mrs Yanru Ouyang <yanru.ouyang@mq.edu.au>   14 September 2015 at 14:18
To: Dr Yvonne Breyer <yvonne.breyer@mq.edu.au>
Cc: Mr Hasnain Zaheer <hasnain.zaheer@students.mq.edu.au>

Dear Dr Breyer,

Re: Project entitled: 'An investigation into how business model decisions
affected the performance of successful digital Technology International New
Ventures (dTINV) in achieving their initial sustainable success.'
Reference No.: 5201500359

Thank you for your recent correspondence. The following amendments have
been approved:

1. Instead of obtaining permission, the research team is to use the data in
the Sunnrise Conference video clips for which permission has not been
received with the condition that founders and companies who have not
responded will not be identified in the findings / report as persons or
brands, rather only by their industry.

2. An incentive of $75 will be provided to interviewees to get better
response rate.

3. Change the recruitment ad for interviewing moderately successful
entrepreneurs instead of highly successful ones.

4. Amend Interview questions as a result of analysis of narrations.

If you have any questions or concerns please contact the FBE Ethics
Secretariat on 9850 4826 or at the following email fbe-ethics@mq.edu.au.

Yours sincerely,

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