

# Sustainability of Startups in Australia: a Policy-Maker Perspective.

*In cooperation with PwC Chair in Digital Economy.*

## LITERATURE REVIEW

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## Table of Contents

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|  |    |
|--|----|
| 1. Background and Managerial Problem .....             | 2  |
| 1.1 A shift in Australia's economy .....               | 2  |
| 1.2 Startups in Australia.....                         | 2  |
| 1.3 Role of the PwC Chair in Digital Economy .....     | 5  |
| 1.4 Report Objectives .....                            | 5  |
| 2. Academic and Industry Literature Review .....       | 6  |
| 2.1 Startup environment in Australia .....             | 6  |
| 2.1.1 Startup definition .....                         | 6  |
| 2.1.2 Startup environment pillars.....                 | 6  |
| 2.2 Startup growth sustainability .....                | 9  |
| 2.2.1 Multidimensionality of growth .....              | 9  |
| 2.2.2 Conditions of growth .....                       | 9  |
| 2.2.3 Growth temporal dimension .....                  | 10 |
| 2.2.4 Growth challenges .....                          | 10 |
| 2.3 Policy-maker's scope .....                         | 11 |
| 2.3.1 Policy-maker's levers .....                      | 11 |
| 2.3.2 Policy-maker's focus .....                       | 12 |
| 2.3.3 Recommendations to Australian policy-makers..... | 13 |
| 3. Knowledge Gap .....                                 | 14 |
| References .....                                       | 16 |

# **1. Background and Managerial Problem**

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## **1.1 A shift in Australia's economy**

Australia's economy has for the last thirty years rested upon primary industries, mining in particular (Euromonitor International, 2016). Representing 8.7% of Australia's Gross Domestic Product (GDP) in 2015, the mining industry has been the largest contributor to the GDP's growth (Australian Government, 2015). Yet, the decrease in the recent years of mining world prices has exposed Australia to vulnerabilities, affecting in part its overall GDP's growth, which is now below its long term average: at 2.3% between 2014 and 2015 (Australian Government, 2015; Euromonitor International, 2016).

While non-mining industries have strengthened in 2015, Australia is still facing a challenge to find new drivers of economic growth to complete a transition from a primary-resource based economy to a high-growth and knowledge-intensive economy (Australian Government, 2015; Euromonitor International, 2016; StartupAUS, 2015). Primary industries are also gaining in productivity and as a result destructing jobs (Australian Government, 2015). Consequently, this issue is critical for policy-makers, such as regional and national governments focusing on employment growth, to see increased tax collection and reduced welfare costs (Davidsson, Achtenhagen, & Naldi, 2010).

Startups, as young firms with high growth potential, represent an opportunity to support alternative drivers of economic growth (Mason & Brown, 2013). The startups that are based on high technology (tech startups) in Australia are for instance estimated to represent up to 4% of the GDP by 2033 and to employ half a million people (PwC, 2013). As a result, it is crucial for policy-makers to better understand how startups evolve and contribute to socio-economic development so they can develop supportive policies or amend restrictive regulations.

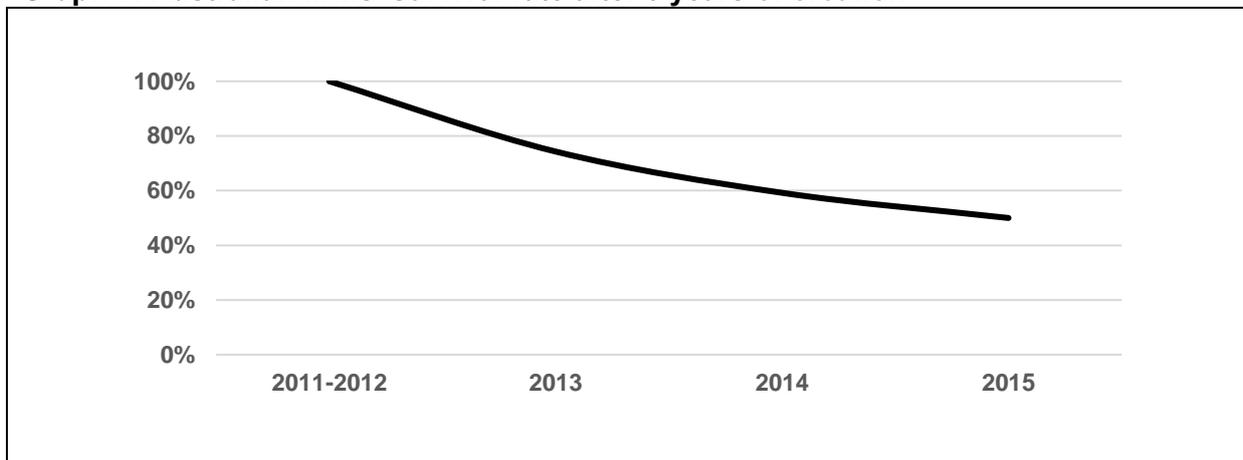
## **1.2 Startups in Australia**

Among the 2.6 million registered businesses in Australia, there are about 130,000 startups (Startups in Australia: From lucky to plucky, 2016). The number of startups has especially increased from 2007 with the rise of digital technologies, enabling them to enhance productivity and to target global markets at low cost (PwC, 2013; Tech Startups Special Report, 2014). Overall, Australian startups evolve in a favourable business environment and are mainly located in Sydney and Melbourne (Australian Government, 2014a; PwC, 2013). Although representing a small share of Australia's GDP (0.4% in 2013

for tech startups for instance), startups contribute largely to the economy by introducing new products or services disrupting traditional industries, increasing overall productivity, and ultimately creating the foundation for new jobs (Brñnback, Carsrud, & Kiviluoto, 2014; NESTA, 2009; PwC, 2013; StartupAUS, 2015).

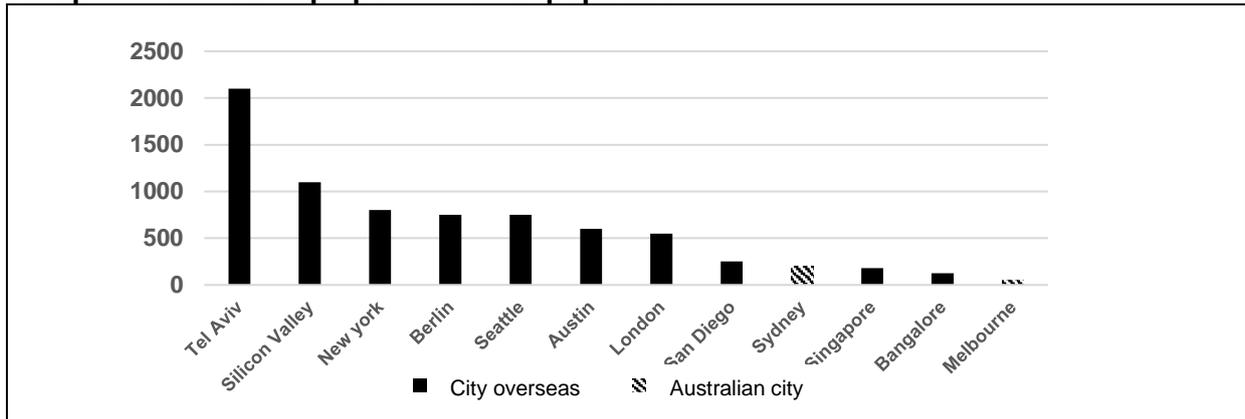
Startups suffer nonetheless from low survival rates, there are in Australia for instance less than half of survivors within three years, see graph 1 (Australian Bureau of Statistics, 2016). Yet, when startups are very successful, they tend to leave Australia and relocate their headquarters to the United States or the United Kingdom (*first symptom of the managerial problem*) (StartupAUS, 2015). Australia has also one of the lowest tech startup formation per capita in the world, see graph 2 (*second symptom of the managerial problem*) (StartupAUS, 2015). Some industries such as agriculture and retail see an unbalanced number of business entries and exits, while high growth potential industries such as information media and telecommunications have low number of business entries, see graph 3 (*third symptom of the managerial problem*) (Australian Bureau of Statistics, 2016). Australian startups face a number of issues, for instance, when looking for skilled employees or investment funds, and progress commonly in a culture of fear of failure (*fourth symptom of the managerial problem*) (Australian Government, 2014a; PwC, 2013; StartupAUS, 2015). As a result, startups overall suffer from sustainability issues, facing difficulties to develop and prosper (*actual managerial problem*).

**Graph 1: Australian firms' survival rate after 3 years of creation**



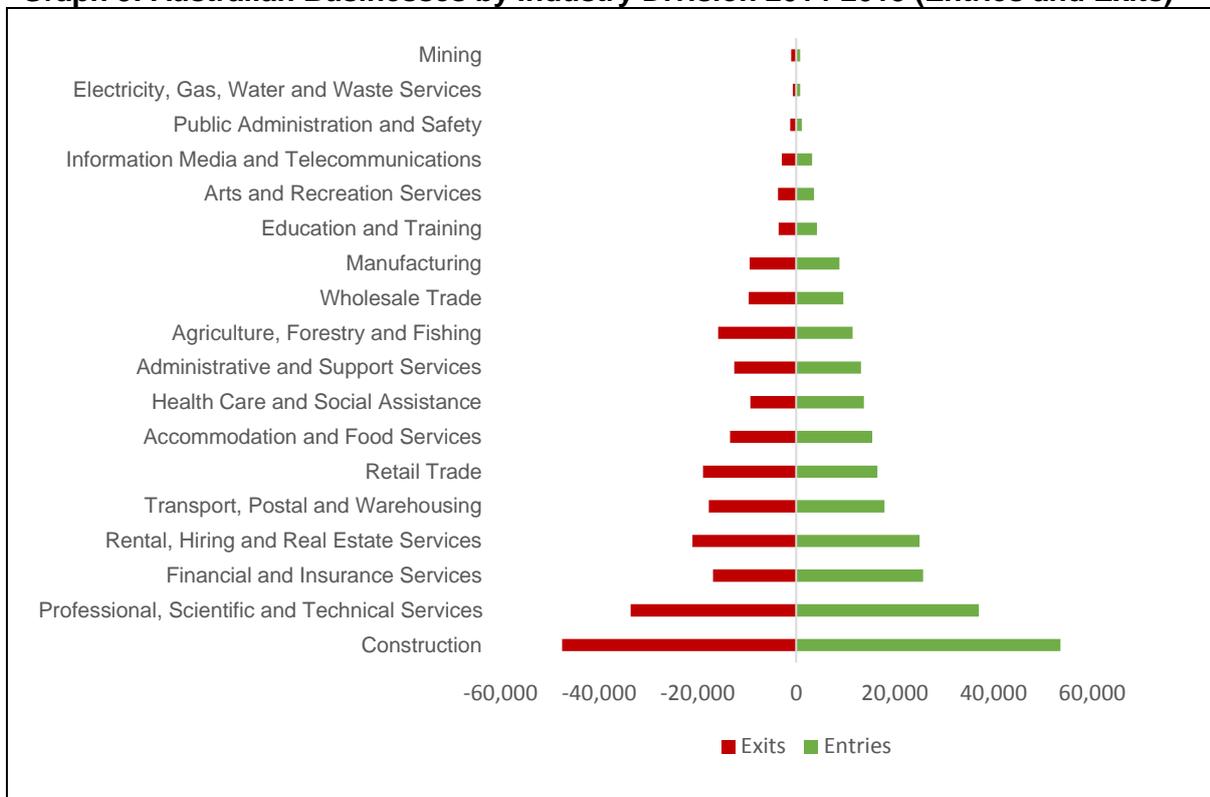
Note. Source from Australian Bureau of Statistics (2016).

**Graph 2: Tech startups per million of population**



Note. Source from Startup Muster (2015).

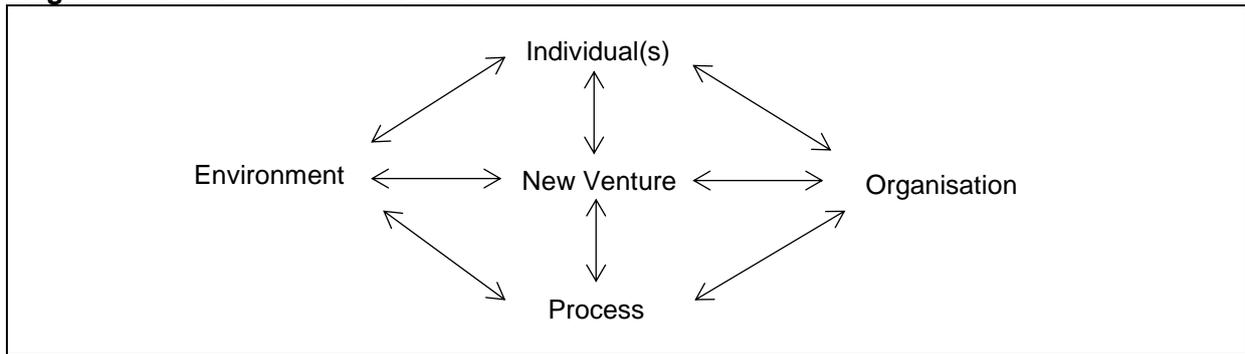
**Graph 3: Australian Businesses by Industry Division 2014-2015 (Entries and Exits)**



Note. Adapted from Australian Bureau of Statistics (2016).

A startup's development depends on essentially four variables: (a) the characteristics of the entrepreneur or the team of founders; (b) the overall organisation (type of firm, strategy); (c) the creation process (opportunity driven or necessity driven, the role of the entrepreneur); and (d) its environment (macro economy, market conditions, availability of support and suppliers, workforces, funds), see figure 1 (Gartner, 1985). Policy makers can mainly provide both short and long term support on the latter of these factors in order to ultimately solve and turn the managerial problem (sustainability issue) into an opportunity (prosper development).

**Figure 1: New Venture Creation Framework**



Note. Adapted with minor change from Gartner (1985).

### 1.3 Role of the PwC Chair in Digital Economy

The chair, sponsored by PwC, links academic research from Queensland University of Technology (QUT) with private and public sectors, as well as entrepreneurs (PwC Chair in Digital Economy, 2015). Its objective is to identify emerging opportunities leading to economic and employment growth within the Australian economy (PwC Chair in Digital Economy, 2015). Financially supported by Queensland State Government, the chair produces policy-orientated reports to give insights and recommendations regarding high growth firms (PwC Chair in Digital Economy, 2015). The understanding of startup sustainability is therefore critical as they are by nature nascent firms, with high economic and employment growth potentials, and represent ultimately a further step towards socio-economic development (GEM, 2014; StartupAUS, 2015; Startups in Australia: From lucky to plucky, 2016).

### 1.4 Report Objectives

This report will help understand how startups operate, what differentiates a startup that sustains growth to one that fails, and how policy-makers can support them. It will therefore seek to answer the three following research objectives (RO):

RO1: In what environment and ecosystem Australian startups evolve and what influences they have on their sustainability;

RO2: How startups sustain growth and minimise risk of failure;

RO3: How policy-makers can support Australian startup sustainability.

## **2. Academic and Industry Literature Review**

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### **2.1 Startup environment in Australia**

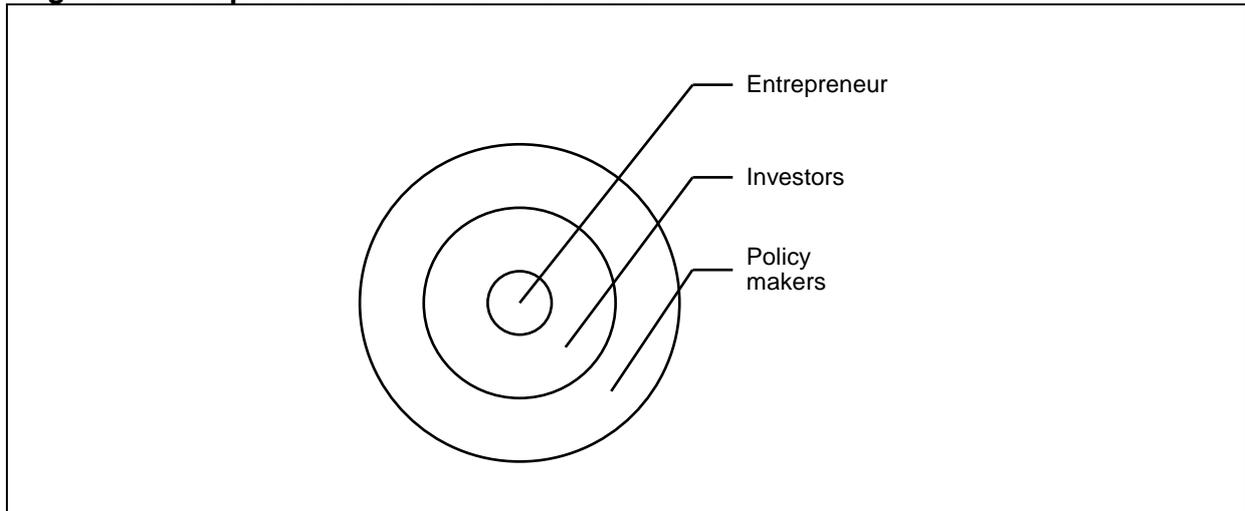
#### **2.1.1 Startup definition**

Although varying slightly between researches, startups are commonly defined as young firms (up to four years old), small (about four employees), often born global taking advantage of the internet to increase their reach, with high labour productivity (knowledge intensive) and high growth potential often through innovation (Davidsson, Steffens, Gordon, Garonne, & Senyard, 2009; Kruger & Cacioppe, 2014; PwC, 2013). Startups are, however, exceptions among small businesses. Most companies start, live and die small, and Aldrich (1999) estimates that only 3% of them have the potential for high growth, up to eventually more than a hundred employees (Cooper, Woo, & Dunkelberg, 1989). As a result, researches are limited to a small number of firms that are hard to identify because it is often too early to assess if a firm at a nascent stage will have high growth potential (Senyard, Davidsson, Gordon, & Steffens, 2009).

#### **2.1.2 Startup environment pillars**

Several variables have been determined to study the environment in which startups evolve. Brñnback et al. (2014) have identified two main variables influencing entrepreneurs in their venture: (a) investors (public through grants or private) to bootstrap the startup; and (b) policy-makers supporting or constraining overall market conditions, see figure 2. Regarding the investor environment in Australia, a study in 2009 of six hundred startups has revealed that more than 85% of founders have mostly funded their startups with their own savings, only 27% sought a bank loan and less than 4% did so through equity such as venture capitals (Davidsson, Steffens, Gordon, Garonne, & Senyard, 2009). Another study later in 2015 of six hundred Australian startups showed that 27% took also advantage of public grants (Startup Muster, 2015). Yet, raising funds is perceived in Australia has one of the biggest challenges for entrepreneurs to overcome, 67% of them needed it to survive another year (Startup Muster, 2015). As for Australian policies, they are ranked in terms of support and relevance for small firms at the 48<sup>th</sup> position out of 60 countries (Kelley, Herrington, & Singer, 2016).

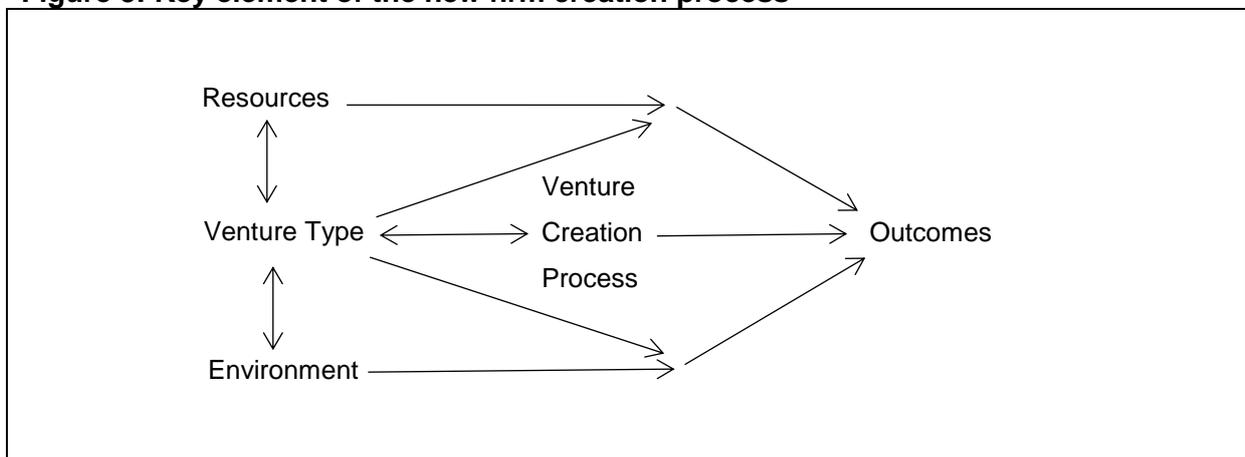
**Figure 2: Entrepreneurs in their environment**



Note. Source from Brñnback et al. (2014).

Davidsson et al. (2009) add the “Resources” variable to the overall startup environment pillars, see figure 3, and go therefore beyond the only financial needs by including workforce needs. Access to workforce has been identified as an issue for many Australian startups being forced to outsource skilled employees (Startup Muster, 2015). For instance, half of the software and application programmers in Australia were born overseas (Australian Government, 2015).

**Figure 3: Key element of the new firm creation process**

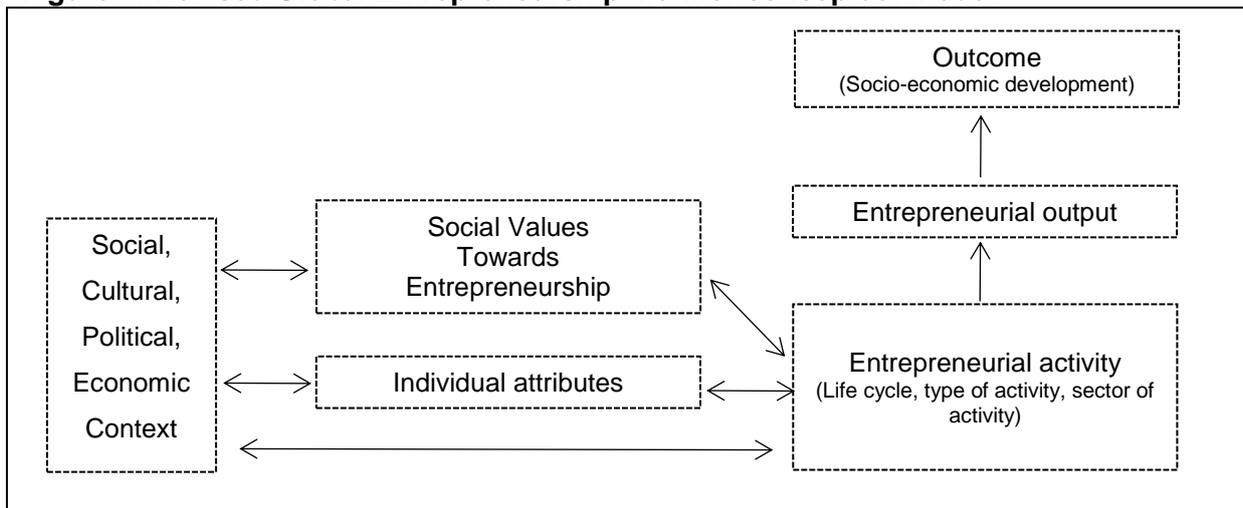


Note. Source from Davidsson et al. (2009).

Kelley et al. (2016) go even further in the description of the startup environment by showcasing the influence of social, cultural and network contexts to entrepreneurs, see figure 4. There is in Australia a high fear of failure (ranked 46<sup>th</sup> out of 60 countries) and entrepreneurship is commonly not seen as a good career choice (Kelley et al., 2016). As a result, this has an impact on the attitudes of the entrepreneurs and can play an influence in the startup outcomes (Kelley et al., 2016). National and entrepreneurial networks play an important role to shape a fertile ecosystem through network collaborations, mentorship

programs as well as promoting entrepreneurship within the population (Kruger & Cacioppe, 2014; PwC, 2013). Good startup ecosystems have been identified to promote entrepreneurial culture, take advantage of experienced mentors, promote a collaborative culture and showcase startup prior successes to encourage entrepreneurs to pursue their venture (PwC, 2013; StartupAUS, 2015). Researches show for instance that firms located within geographic clusters will benefit from their local networks through collaborations between entrepreneurs and increase their likelihood of success (Davidsson et al., 2010). Known organisations to develop such ecosystems are for instance incubators (helping projects to come to life) and accelerators (helping startups to be ready to commercialise) (PwC, 2013). Yet, there are currently no national incubators in Australia, there is a limited engagement with research networks such as universities, and an overall lack of collaboration between Australian entrepreneurs (Australian Government, 2014; StartupAUS, 2015; Startups in Australia: From lucky to plucky, 2016).

**Figure 4: Revised Global Entrepreneurship Monitor conceptual model**



Note. Adapted with minor change from Kelley et al. (2016).

To conclude, startups rely heavily on their overall environment, which has room for improvement in Australia.

## **2.2 Startup growth sustainability**

### **2.2.1 Multidimensionality of growth**

Growth is by nature complex to define (Davidsson et al., 2010). Most researches have associated the term “growth” with a change in sales (Davidsson et al., 2010). Yet, growth has multiple dimensions and can be the result of a change in assets, a change in employment or a change in sales turnover (Delmar, Davidsson, & Gartner, 2003). Firms will not have the same type of growth either, one could see an increase in sales but no change in assets or employment if they gained in productivity for instance (Delmar et al., 2003). Additionally, entrepreneurs and policy-makers have contradictory views on growth (Brñnback et al., 2014). Entrepreneurs will mostly focus on sales growth, and will see in the early years new employees as a high cost (Brñnback et al., 2014). Yet, policy-makers are more interested in employment growth to decrease welfare costs, which will have an impact on the policies they will develop (Davidsson & Wiklund, 2000). Another growth dimension to consider is whether it is organic or made through acquisition – acquiring another firm to gain market share (Delmar et al., 2003). Most startups will grow organically but after ten years the trend tends to reverse (Davidsson & Delmar, 2006). As a result, studies show growth is multidimensional and therefore difficult to compare between firms (Davidsson et al., 2010).

### **2.2.2 Conditions of growth**

Several determinants have been identified to define conditions of growth. A study of fifty high growth firms and fifty low growth firms in the United States showed four fundamental conditions to achieve and maintain high growth: (a) the founder characteristics such as a relevant previous industry experience and a broad professional network to provide clients to the business, confirmed for Australian startups by Davidsson, Steffens, Gordon, Garonne and Senyard (2009); (b) the firm attributes and in particular a written commitment to growth as well as planning abilities, however, Davidsson et al. (2009) have found planning might be counterproductive in the startups’ early years because of their necessity to remain flexible to adapt their product to customers’ needs; (c) the business practices including a unique value for customers and a product superiority; and (d) good human resource management practices such as selective hiring, training, and retaining strategy (Barringer, Jones, & Neubaum, 2005). Moreover, startups both take advantage and suffer from their structure and young age. They have a “learning advantage of newness” over large firms as they are flexible with low bureaucracy (Autio, Sapienza, & Almeida, 2000; Sapienza, Autio, George, & Zahra, 2006). Yet, as a result of a lack of resources and networking relationships, startups have a “liability of newness” which makes it harder to compete against large and old firms that have a knowledge advantage on the market (Stinchcombe, 1965).

The use of digital technologies has also proved to be a facilitator of growth (Simes, O'Mahony, & Lyster, 2013). Deloitte has studied five hundred Australian small businesses and found that those that are highly digitally engaged had more diversified revenue, decreasing as a result their risk of failure, and were two times most likely to grow in revenue or four times more likely to be hiring (Simes, O'Mahony, & Lyster, 2013).

While all these determinants are internal, Kangasharju (2000), Davidsson and Delmar (2006) also highlight the importance of external growth determinants such as: (a) the demand for the product or service (major determinant); (b) the positive influence of being in a growing industry; and (c) the actions of competitors. In Australia, some startups are for instance over presented in slow growing industries (Davidsson et al., 2009). Davidsson et al. (2009) show the risk that Australian startups take when entering a mature industry such as retail with low barriers of entry but very high barriers of success (high failure rate), affecting their overall sustainability.

### **2.2.3 Growth temporal dimension**

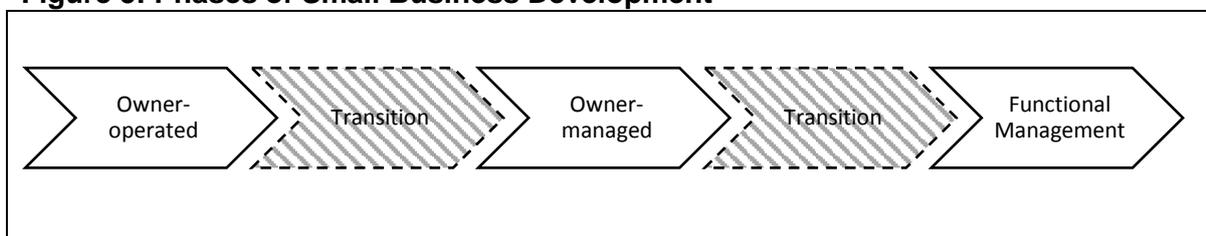
Growth is mostly not linear and only a few startups will see consecutive years of growth. In a study of 158,000 startups in ten different countries not including Australia, Davila, Foster, He and Shimizu (2015) show that only one third of startups saw three consecutive years of growth from their second year of existence. Most startups follow a “ladder and snake” growth path – they grow a year and become stable or decrease the year after (Davila et al, 2015). Startups that manage to sustain growth follow then a “try and learn” approach (Davila et al., 2015). They succeed to manage downturns and strengthen accordingly their sustainability (Davila et al., 2015).

### **2.2.4 Growth challenges**

High growth can often come with internal challenges that Hambrick and Crozier (1985) identified as: (a) startups face an instant big size which might increase decision-making processes, disorientate employees, and give entrepreneurs a fear of vulnerability even though Davidsson et al. (2010) highlight the latter is often a bias, as a result, startups that are able to think big early and hire managers with large firm experiences will most likely overcome this challenge; (b) a sense of infallibility coming from a constant growth may lead founders to keep a winning strategy but losing as a result their flexibility; (c) an internal turmoil leading to employee burnouts because of their job suddenly becoming high pressure and as Brñnback et al. (2014) mentions, firms often cannot hire as quickly as they grow, as a result, startups will need to support cross functional teams to relieve workload; and (d) an extraordinary resource needs to fund the growth.

Later, Mount, Zinger and Forsyth (1993) included further variables and developed a new framework to explain the internal changes that firms face when growing, see figure 5. Organisations go through three phases during their development: (a) an owner-operated organisation where the entrepreneur comes with all the decisions; (b) an owner-managed organisation where the hiring of middle management is required to manage the workload as well as to improve the coordination across the business; and (c) a functional management organisation with a shared authority, planning and budget control. The highest risk of failure lies in the transition of the firm from one phase to another, which might take years to complete (Mount et al., 1993). Companies succeeding these transitions had sufficiently planned change (Mount et al. ,1993). They controlled growth instead of suffering from it (Mount et al., 1993).

**Figure 5: Phases of Small Business Development**



Note. Adapted from Mount et al. (1993).

To sustain growth, startups are then required to constantly plan and adjust themselves.

## 2.3 Policy-maker's scope

### 2.3.1 Policy-maker's levers

Policy-makers have several levers to support startups. Kelley et al.'s (2016) framework gives prominence to: (a) basic requirements such as macroeconomic stability, infrastructure and institutions; (b) efficiency enhancers such as labour market efficiency, higher education and financial market sophistication; and (c) innovation and entrepreneurship support such as entrepreneurial finance, government entrepreneurship programs, culture and social norms. The Australian government is currently already supportive by providing for instance grants from the Entrepreneurs Infrastructure Program (former Commercialisation Australia) and tax deductions for research and development, however, it is criticised to have too broad policies with an overall low support of entrepreneurs and startups (PwC, 2013; StartupAUS, 2015).

### **2.3.2 Policy-maker's focus**

Shane (2009), in a provocative article, criticises governments that fund any types of ventures, in particular those focusing on small firms instead of high growth potential startups. As small firms have lower growth expectations and are less innovative, they tend to create fewer jobs and generate little wealth (Shane, 2009). As a result, they have lower outcomes in terms of socio-economic development (Kelley et al., 2016). Similar policies planned in Australia from the Industry Innovation and Competitiveness Agenda have been blamed for focusing too much attention on small businesses rather than startups, and for not stressing enough on industries with high growth potential such as high tech (Australian Government, 2014a; StartupAUS, 2015). Shane (2009) suggests then to policy-makers, from a United States perspective, to only focus on startups with high growth potential. NESTA (2009) supports similar recommendations for the United Kingdom.

Developing further recommendations for policy-makers and acknowledging the difficulty to identify high growth potential, Mason and Brown (2013) recommend to target firms with end-user engagements more likely to grow highly in growing industries, but not only in high tech industries. Acknowledging also that growth is not linear, Mason and Brown (2013) suggest that startups should be supported at key steps of their development by identifying growth trigger points such as a new product delivered, a venture capital raised or an acquisition of a recent technology. Moreover, Mason and Brown (2013) relativise Shane (2009)'s position regarding the drop of support to small firms. As small businesses are discontinued every day, new small businesses will still need to be supported in order to keep the balance positive (Mason & Brown, 2013). However, the focus of policy-makers and a majority of the grants they can give should indeed remain on startups with high growth potential (Mason & Brown, 2013).

Brñnback et al. (2014) remind, however, that an excess of public grant funds may create inefficiencies and distort competition. The difficulty remains for policy-makers to engage in medium term support and target startups that will most likely turn profitable to ultimately pay taxes (Brñnback et al., 2014). Shane (2008) finds for instance that new firms turn profitable in average seven to nine years after their creation. As a result, policies require long-term views. PwC (2013) also warns that the startup environment and ecosystem in Australia must first be ready in terms of technology, skill resources and innovation to absorb further funds, otherwise, any projects could be funded. To conclude, quality over quantity is recommended to be the focus of policy-makers.

### 2.3.3 Recommendations to Australian policy-makers

Several recommendations have been made to Australian policy-makers to make and improve reforms. Firstly in terms of access to finance, the literature finds regrettable that the grants offered by the government from the Entrepreneur Infrastructure Program have been reduced by half in the last few years and are complex for startups to apply to (PwC, 2013; StartupAUS, 2015). Additionally, early investment tax deductions are requested to encourage angel investments occurring at the creation of startups, as well as the liberalisation of crowd-sources equity funding to ease investments directly from potential customers – a bill bringing this into effect is currently being discussed at the Senate (GEM, 2014; Parliament of Australia, 2016; StartupAUS, 2015).

Secondly in terms of supporting the startup ecosystem, it has been recommended to create entrepreneur hubs to encourage collaboration and a national network of startups to share knowledge and success stories (PwC, 2013; StartupAUS, 2015).

Thirdly in terms of access to a skilled workforce, governments are advised to promote entrepreneurship education at secondary and tertiary levels to rebalance the gap of young entrepreneurs compared to the United States (8.7% of founders are below 24 years old in Australia v. 13.5% in the United States), as well as encouraging and supporting Information and Communication Technology (ICT) education (GEM, 2014; Kruger & Cacioppe, 2014; PwC, 2013; StartupAUS, 2015). StartupAUS (2015) notes indeed that only 2% of Australian graduates have an ICT qualification, and that more than 70% of students drop out from this course at university, whereas the demand for these skills have more than doubled over the 1999-2012 period. The Department of Broadband, Communications and the Digital Economy has raised the issue in 2013 and ICT skills have progressively been implemented in schools through the Australian Curriculum since 2015 (ACARA, 2015; Australian Government, 2013). It has also been suggested to ease the requirements of the skilled visa (subclass 457) and to create an entrepreneur visa between the countries that are members of the G20 to promote entrepreneurship and facilitate access to skilled technical talents (StartupAUS, 2015; Startup Muster, 2015).

Fourthly in terms of entrepreneurial culture and in order to tackle the culture of fear of failure in Australia, it is advised to encourage entrepreneurs to take risks by amending the *Corporations Act 2001* (Cth) that makes founders highly liable in case of bankruptcy (StartupAUS, 2015).

And fifthly in terms of infrastructure improvements, in particular in the Sunshine Coast and remote areas, the poor quality of broadband internet network is blamed for preventing startups from growing – Australia is ranked 21<sup>st</sup> among OECD countries for broadband

connections per inhabitants (Australian Government, 2014a; Kruger & Cacioppe, 2014; OECD, 2012).

### **3. Knowledge Gap**

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The literature review shows extensive research has been conducted regarding the environment and ecosystem of startups. Although few authors describe the characteristics of the Australian environment, they mostly focus on tech startups within the high tech industries. Yet, high tech sectors have their own specificities such as high levels of innovation and high investment risks that might differ from other industries in which Australian startups develop (Zakrzewska-Bielawska, 2010). As a result, there is a knowledge gap in the literature regarding the specificities of the Australian startup environment across all industries.

Thorough research has also been conducted on the sustainability of high growth. The literature is, however, broad and often generalised for any firms. Small firms are indeed most of the time studied but not startups specifically. Yet, startups differ from small firms in the way they tend to have broader growth ambitions and therefore take more risk, decreasing at the same time their chance of sustainability (StartupAUS, 2015). Most studies are also conducted on firms from the United States, the United Kingdom, or Sweden. Although these countries share similarities with Australia as developed economies, they also differ in terms of macroeconomic conditions (IMF, 2015). As a result, Australian startups might also face specific sustainability challenges that are not showcased thoroughly in the literature.

Regarding the policy-maker's scope, the literature shows considerable recommendations already made to Australian policy-makers, the federal government in particular. These recommendations are, however, mostly tailored to startups within high tech industries that would stress, for instance, more on finding technical talents with ICT qualifications than startups in the retail industry. Yet, firms in Australia with high growth potential are not only found within high tech industries but across all sectors (NESTA, 2009). Moreover, the rationale for change in policies found in the literature are most of the time tailored to the United States and might not be transposable or relevant to Australian policy-makers. As a result, there is a knowledge gap in the literature of policy recommendations and frameworks tailored to Australian policy-makers regarding startups across all industries.

The purpose of this report is therefore to close the gap in the literature by analysing in depth the Australian startup environment, identifying the challenges Australian startups face

when trying to develop and grow, and ultimately to recommend key levers Australian policy-makers can action to support Australian startups across all industries.

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