Submission to the Senate Economics References Committee

Inquiry Into Australia's Innovation System

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Executive Summary

This submission examines the realised and potential economic impact of government involvement in innovation stimulation. Of particular concern is the identified trend of declining new venture creation and the concurrent higher rate of business exits.

A worrying statistic for a healthy innovation climate is the very small percentage of patents granted to Australian applicants in 2012, just 7% and down from 10% in 2005. Intellectual Property Rights are seen as critical for high growth economic activity.

Other quoted studies highlight the need for governments to be more experimental in the way they encourage innovation. It is argued that governments themselves need to be more innovative in revenue-raising if they are to meet an ever expanding social services sector cost that reliance on taxation income cannot satisfy. An examination of the Newcastle NSW economy post-steelworks closure confirms this need, with a heavy preponderance of either direct government employment or jobs in low-skill, low-wage sectors (50.7% and 31.9% respectively of total main sector jobs).

Using case studies, it is shown that governments can more actively stimulate the economy and create a more sustainable activity by providing much earlier and more comprehensive innovation assistance to high-growth opportunities.

By applying a comparative statistical analysis of proven innovation intervention by other governments, it is suggested that an investment equivalent to the support given to the automotive industry over three years of $1.8 billion, would have returned to government coffers direct revenue of a conservative $59 billion, excluding all taxation and any external multiplier impact. In addition, some 720,000 direct employment opportunities could have been created.

Innovation funding models are examined and a conclusion reached that the highest probability of successful innovation would arise from adopting the Rainforest Cluster model. The creation of Rainforest Clusters is discussed, with a recommendation that trial clusters be established in three areas of significant economic decline: Elizabeth in South Australia; Geelong in Victoria; and Burnie in North West Tasmania, with an equity capital investment of $150 million.

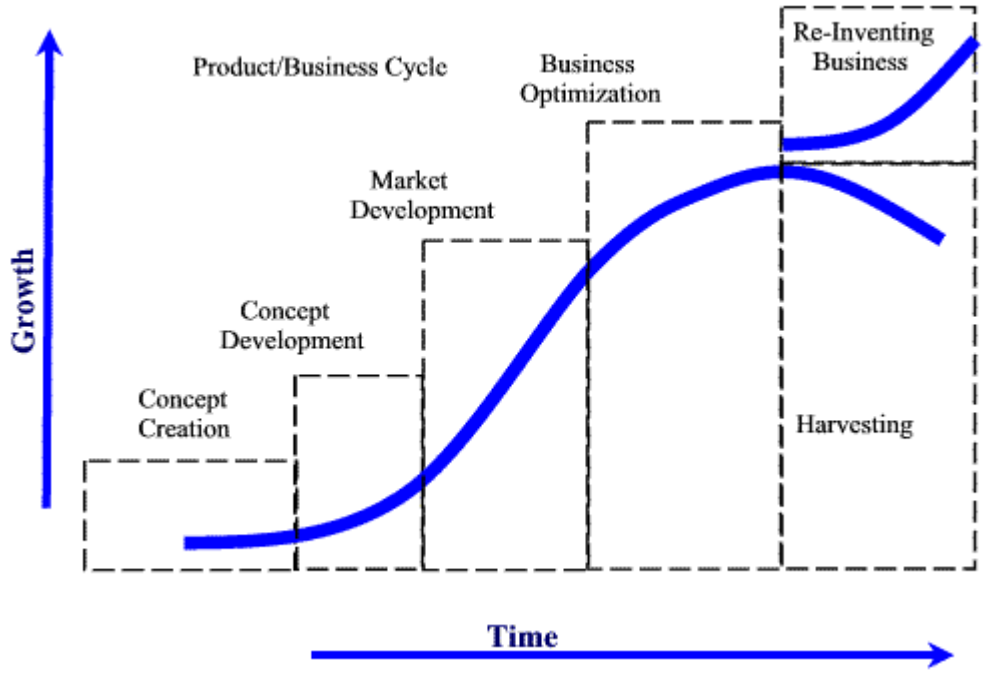
1. Introduction

Innovation is about ideas. There is a perception that you can innovate your way out of difficulties by throwing large sums of money at a problem. In many instances, this approach has the reverse effect by funding the continuation of incremental transition, when only a radical change of direction will produce true innovation.

It is also a misconception that companies become too big to be allowed to fail; in reality becoming too big can be a predictor of future failure. A simple analogy would be that of a massive cargo ship versus a small speedboat. The cargo ship cannot stop or turn in time to avoid an unexpected object, whereas the speedboat is nimble and easy to turn. Most would prefer to be aboard the cargo ship in rough seas rather than the speedboat. Yet the cumulative loss of life and valuable cargo increases with the size of the vessel; the Titanic was considered unsinkable.

Many studies have shown that companies go through a predictable life cycle (Duryee 1994, Flamholze 1990, Lichtenstein 2008). There comes a point within the life cycle that the firm must reinvent itself or suffer decline, as shown by Fig. 1.

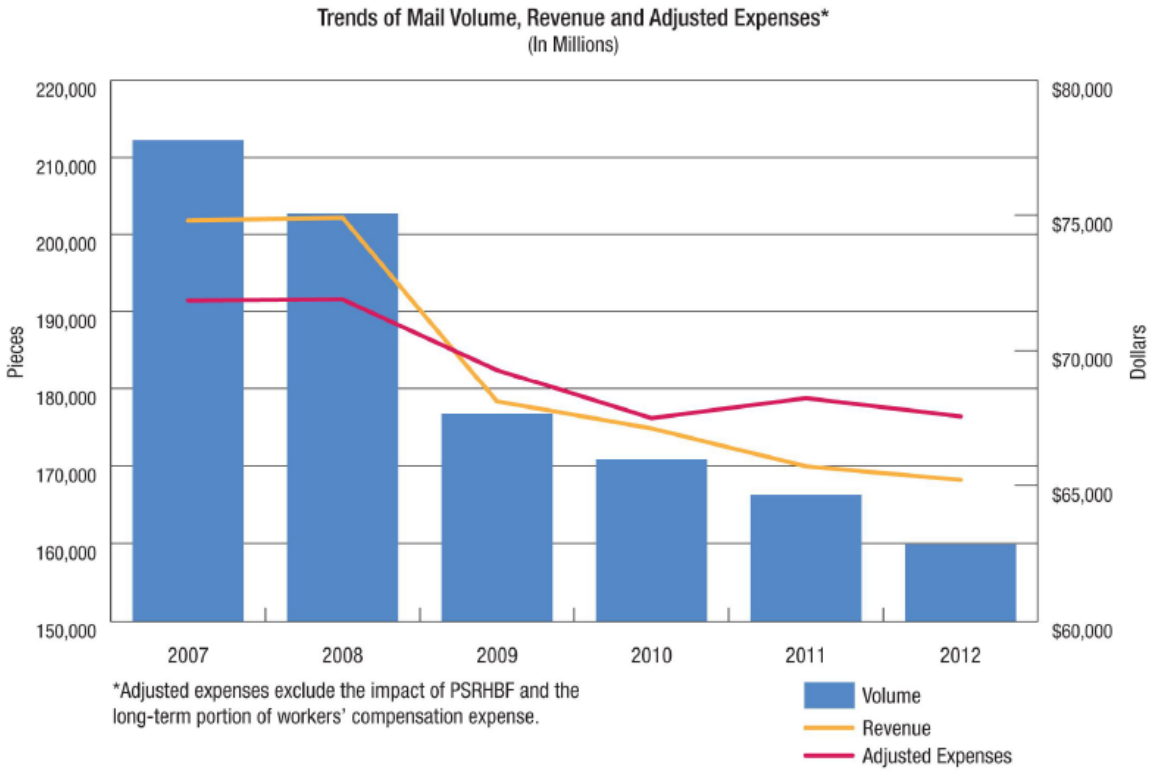
Figure 1: Product or Business Life Cycle



(Source: httpwww.arundelstreet.comcase_studies_life_cycle.htm)

There are many examples of this life cycle proceeding to the inevitable conclusion, such as the postal services (Fig 2).

Figure 2: Decline of US Postal Service's Core Business



As the US Postal Service's revenue declines, attempts to reduce expenditure eventually reach a point where expenditure exceeds revenue, with fixed costs preventing further de-scaling. No amount of capital injection could reverse such a technology-induced decline.

Even where companies pursue reinvention it can be difficult to turn around the ship with so much invested in old technology. A classic case study of this is Kodak and digital photography. Despite being the leader in this new technology, they were not nimble enough to capitalise on the discovery and have imploded dramatically. Founded in 1880, Kodak went from being a major technology giant, residing in the Dow Jones Industrial Average for over 70 years until 2004, to a mere shadow of its former self and is now just emerging from bankruptcy protection, along the way shedding tens of thousands of jobs [WSJ 2013].

What this should demonstrate about innovation uptake is that small entrepreneurial ventures deliver a greater proportion of change innovation than large firms. Yet in terms of financial and policy support, most emphasis is on the large, often late stage conglomerates. This submission highlights how a redirection of resources and funding to the earliest stage of innovation can produce a massive return on investment (ROI).

2. Big versus Small

Terms of Reference:

> ***(b) The Australian Government's approach to innovation, especially with respect to the funding of education and research, the allocation of investment in industries, and the maintenance of capabilities across the economy.***

It is easy to equate a large successful enterprise with innovation. What often constitutes 'innovation' by these behemoths of industry is actually an investment in the creativity of a minnow. Giants of technology like Google soak up new start-ups for their innovations at an ever increasing rate. In 2013 Google acquired Waze Ltd for US$969 million, comprised of goodwill of US$841 million and US$193 for intangibles (patents etc) but no physical assets. Waze was only founded in 2008, had limited revenue and raised capital through 2nd and 3rd round funding of US$55 million, giving a ROI of US$914 million (1700%)(Reuters 2013). Google bought 15 other such start-ups in 2013 purely for their innovation property rights.

What this demonstrates is the substantial dollar value applying to innovation and the impact nascent enterprises have on technological development.

We tend to be overawed by the size and power of companies such as Microsoft, Apple and Facebook. So much so, that their humble beginnings fade into history. All three were founded by university students playing around with ideas. They were unknowns that could just as easily have disappeared along with the thousands of other start-up entrepreneurs but for a fortuitous series of 'lucky breaks' that could equally have propelled many of those unfortunate failed ventures. Facebook is only 10 years old and as of March this year had 6,818 employees, with equity of US$15.5 billion (Facebook.com 2014). Incredibly, determining the success or failure of 'business ideas', mostly revolves around a suite of identifiable resources.

From a value perspective, investing $1 million in a 1st round capital raising of a start-up that eventually returns an ROI of 1700% is preferable to providing a non-returning grant of $500 million to support a declining industry.

3. Aiding Success

Totally avoiding failure is unachievable; there are too many external influences that can not be controlled. Increasing the chances of success is less problematic. Why ventures fail is mainly because of the following:

- ✔ *A bad idea to start with* – a thorough evaluation of the concept and marketing analysis helps to identify the potential successes from the average or just plain terrible ones;
- ✔ *Under capitalisation* – financial analysis can identify the likely cash flow needs and set budgets accordingly;
- ✔ *Lack of business acumen* – this can be obtained through either external consultants or industry mentors

;

- ✔ *Insufficient network connections*- board members need to be sourced that can bring with them the right industry connections;

- ✔ *No supportive environment* – pressures of everyday life as well as the demands of early stage start-ups require a logistical back-up to streamline the set up process. The use of centralised administrative services reduces cost burdens and improves professionalism;

- ✔ *Market access* – getting the foot in the first few doors can be very difficult and needs an introduction by an establish market identity; and

- ✔ *Isolation* – start-ups are generally locked into their own little universe, with little opportunity to converse with others in the same boat and swap ideas and shortcuts. A micro-cluster allows for all parties to interact and support one another on a daily basis.

There is nothing earth-shattering in the foregoing list. Indeed, once you resolve the first issue, the rest are very basic business concepts; ones which are frequently overlooked or not properly executed.

4. Where Government Financial Emphasis Should Be

A good role model is Israel; surrounded by hostile elements (as we are by water), small in territory, limited by resources, and suffering from internal tensions (at least our threats aren't armed with missiles).

What Israel recognised is that there is no future in pursuing industries with high volume - low value, because the freight cost to market makes them uncompetitive. Sending a case of apples for $20 to Asia is not as attractive as sending a same sized case of 1,000 computer chips at $20 each ($20,000). It's not quantity but quality that needs to be the aim. Yet we depend almost entirely on raw materials with low margins for export income ($20 -$30 per tonne margin).

Hundreds of millions have been provided to keep afloat companies that eventually go under and energy subsidies to large companies total tens of millions of dollars each year. Assistance to the auto industry is a case in point. It's not that we can't make cars competitively, but more that we make the wrong sort of cars. Matching and copying market competitors with lower cost of production and larger markets never succeeds. This is marketing at its most basic. A high cost producer with no competitive advantage will lose out to a low cost imitator, regardless of brand identification. Yet there has been no serious attempt to create niche vehicle products more attuned to smaller volumes; ones that do not rely on a backbone of a large volume model. We need to develop enterprises that can grow with the technology of the next generation or actively pursue high value-added down-stream processing. This is a lower cost, higher return option.

In contrast to the unproductive methodology mentioned above, the Israeli Government investment in start-ups of modest amounts of $500,000 to $1 million, has seen a ROI on just $250 million in funding of an amazing $8 billion to date (3100% profit). By diverting this "throwing of good money after bad" into a seed fund similar to the Yozma concept [Senor 2009], Australia could not only obtain the growth it so desperately seeks, but convert its heavy reliance on taxation to a steady stream of investment returns.

The Israeli economy grew from US$72 billion in 1993 to US$235 billion in 2011, after inflation achieving a net gain of 126% [CBS 2011; SBS 1998]. Whilst manufacturing activity declined, business activity grew. The standout statistic for Israel is the funds devoted to Research and Development, an increase of 272% over the period [CBS 2009].

Israel is supportive of start-up ventures and does not criticise failure, whereas in Australia we place as many obstacles in the way of success as we can. By reversing this practice and actively removing impediments, failure of ventures is less likely.

A good example of how facilitating an entrepreneur can accrue significant economic benefits, is the online auction site eBay. Founded in September 1995 in California to create a "perfect market place, it had grown to hosting 2,000,000 auctions per month by January of 1997, a mere 16 months after start-up. Also in 1997, eBay received a private sector 2nd round funding injection of US$6.7 million. By March 1998, eBay had 30 employees and revenues of US$4.7 million. In September 1998, three years after founding, eBay went public with an Initial Public Offering (IPO), the share price rising to an astronomic US$53.50 on the first few days' trading and making the founders instant billionaires. From nothing to $ billion company in three years!

Today eBay has a net income of US$3.23 billion on revenue of US$11.68 billion and employs world-wide 27,770 people, with a sales growth in difficult 2011 of 27%. Provision for Income Tax in 2009 was a massive US$490 million [USSEC&EXCHCOMM 2010]. One start-up company in just 14 years could solve the unemployment problem of the State of Tasmania if given an initial boost of a free home and a small **equity investment**. This is the key, governments talk of industry **co-investment** but it is in fact merely a grant. Any funding going into a private sector firm **must** be in exchange for equity. Such equity can be repurchased by the firm, as happened in the American auto industry bailout, or sold out post IPO for a windfall profit. **Importantly**, **t**here is **zero risk** to any such investment because it replaces a previous grant, which was a 100% risk lost immediately on hand-over.

Terms of Reference:

> *(j) Policy options to create a seamless innovation pipeline, including support for emerging industries, with a view to identifying key areas of future* ***competitive advantage.***

Returning to the economic success of Israel, research shows that it was not achieved by competing in an established market or by supplying raw materials. The Israeli secret was **Intellectual Property Rights**, the delivered return on all that Research & Development funding. Many of the patent applications were made by small start-up entrepreneurs without any early stage government assistance (see Waze, an Israeli company). Funding was provided to bring the technology to market or to pursue cooperative partnerships with multinational concerns. The computer giant Intel was one such company attracted by the patents of Israelis and persuaded to invest in a computer chip manufacturing plant, even though the threat of war was a constant possibility.

Obtaining patent protection is a fundamental necessity to gaining the finance for a start-up venture. With a patent and a high growth potential product, acquiring later round commercial equity finance is less complicated. Yet too often prosecuting a patent application is beyond the resource capacity of the inventive entrepreneur. From a government co-investment perspective, this is the point at which it makes economic sense to invest.

A dissection of Standard Patents awarded in Australia in 2012, shows that only 7% were to Australian applicants; down from 10% in 2005 (Productivity Commission 2013 p 74).

If an entrepreneur manages to independently fund a patent application, the national hold on manufacturing the technology is weakened and the cost of "winning" the bidding war for the resultant economic benefit increases. Here is a currently unserviced opportunity to create value added economic activity at below the existing cost to government.

Consider the incentives often offered to prospective business ventures: rate holidays; subsidised service connections; fast-tracked planning assistance, cash grants etc. None of these inducements act as golden handcuffs, so that if the venture is successful, it can be easily poached away to another country.

By contrast, it can be less costly to provide assistance prior to patenting which can then contractually lock the future venture into a long-term association with government and local economy. Cost-wise, such an approach would be in the order of $30,000; less than foregone future revenue under the current methodology and has the advantage of being able to select only the very best opportunities, rather than the low growth ventures often attracted. As recommended, any funding provided is in return for equity. The earlier a funding injection is made, the greater the equity slice obtained. A $30,000 stake pre-startup could earn up to a 40% equity share. Australian technology start-up Atlassian demonstrates this concept. Founded in 2002 on only $10,000 capital acquired by credit card, it has recently received a 3rd round injection of $150 million for a 5% share, valuing the soon to be floated company at $3.3 billion (Foo 2014). Which would be the preferred investment strategy; $30,000 for 40% equity or $150 million for 5%?

Even allowing for these later round funding dilutions, if the opportunity was as successful as Carsales.com at IPO, a 10% remaining equity would have returned $80 million! Thus, apart from any flow-on economic benefit from the venture, the government would gain a potential windfall from a future cash-out of the equity stake.

The potential for economic gain to government revenue from early-stage equity injection should not be underestimated. If the ROI ratio achieved by the Israeli Yozma fund of 32 times investment is extrapolated to the budget outlay made to the automotive industry for the three years 2009-2012 of $1.862 billion (Productivity Commission 2013 p 121) and which returned a zero dividend to government, then total net receipts of the order of $59.58 billion would be possible. As this would have been a switching of a non-equity outlay to an equity investment, there would be no downside risk. This one innovation measure, not including the substantial private sector investment multiple, would have eliminated much of the budget deficit and is realistically achievable, as will be detailed in this submission. Given that Australia enjoys a far less hostile business environment than Israel, the inferred ROI should be considered conservative and achievable.

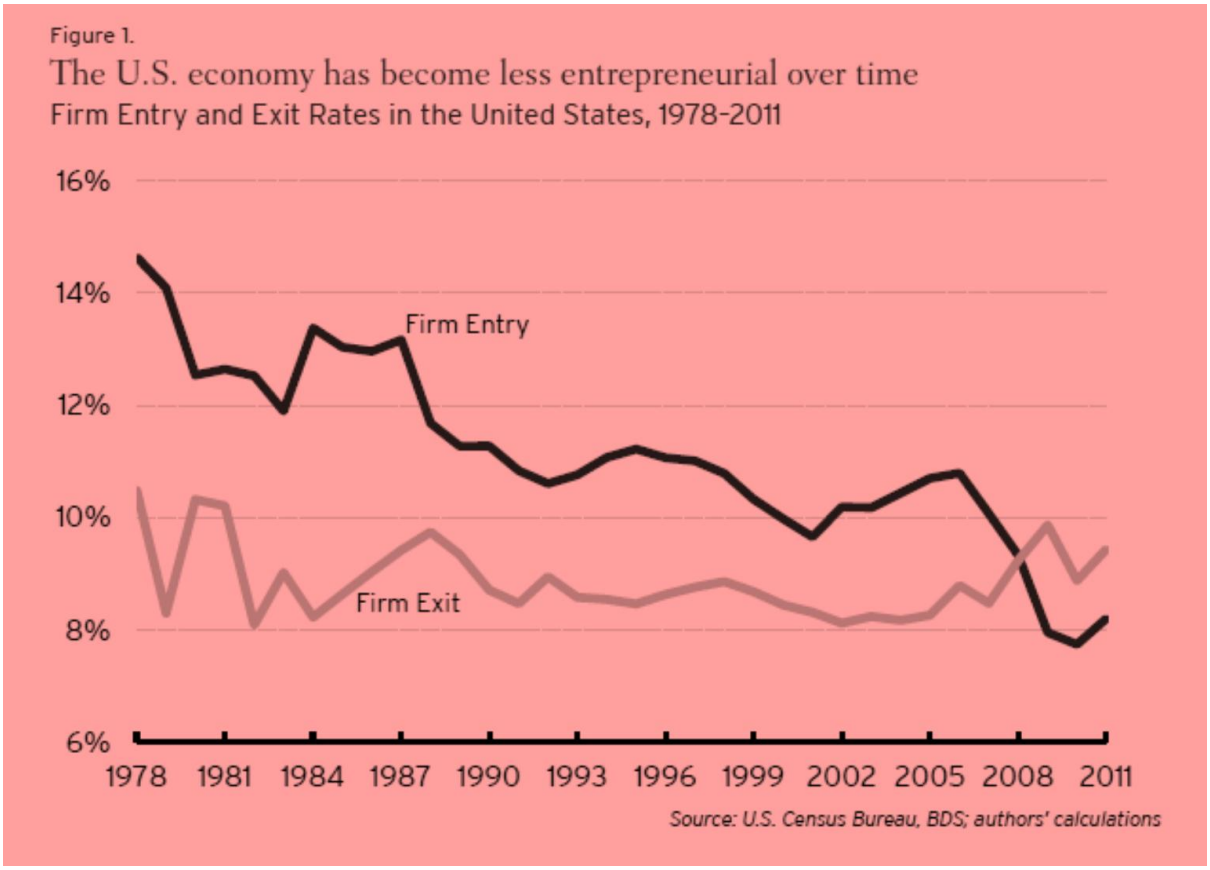
5. The Decline in New Venture Creation

A recent study by the Brooking Institution highlighted the importance to the economy of continually creating new enterprises:

> ***"Business dynamism is the process by which firms continually are born, fail, expand, and contract, as some jobs are created, others are destroyed, and others still are turned over. Research has firmly established that this dynamic process is vital to productivity and sustained economic growth. Entrepreneurs play a critical role in this process, and in net job creation." (Hathaway 2014 p1)***

Hathaway shows that there is an inevitable churn of labour market requirements as old industries decline and new ones are created. Provided that the level of new entrants equals or exceeds the exits of firms, then the economy will continue to grow. A trend away from this equation has been evident in the US since 1978 (Fig 3).

Figure 3: Entry – Exit Rate United States



Australia is starting to exhibit a similar trend, with actively trading businesses at June 2013 down by 61,000 (2.9%) and entry rate lower (11.2%) than exit rate (14.1%) (ABS 2014). If Australia is to avoid the long-term decline evident in the US, measures to encourage an increase in venture start-ups will be necessary.

> ***"governments, educational institutions, entrepreneurs, investors and foundations should continue to experiment with ways to encourage new business formation" (Hathaway 2014 p 6)***

Having established the importance and need to create new ventures, consideration of current formation assistance models is necessary.

6. Start-up Support Models

There are many strategies utilised to assist budding ventures and are activated at various stages of the firms development. Funding only, either by grants or loans are excluded, as these fail to increase the survival prospects to any great degree. The main models considered here are:

1. Angel Investors
2. Venture Capital Model (VCM)
3. Start-up Incubators
4. Accelerators
5. Rainforest

6.1 Angel Investor Model

This group of investors are typically successful entrepreneurs who individually or collectively provide funding for early stage start-ups in return for a high equity stake to reflect the inherent risk. Mostly Angel investors will enter at the seed funding stage, not at the highly critical earlier research and development stage. Amounts of funding vary but usually in the order of $10,000 - $500,000. In return for a substantial stake in the venture, Angel investors provide:

- Knowledge & wisdom
- Network access
- Assistance with finding later round funding
- Start-ups, though, are not part of a collection of ventures

6.2 Venture Capital Model (VC)

Venture Capitalists enter into ventures at generally post start-up. By this time the firm has burnt initial cash resources and any seed funding. This group of investors has very stringent selection criteria and require a high potential ROI, typically 10 times original investment within 5 – 10 years. They do, however, provide a greater degree of assistance than Angels:

- Strategy development
- Active board membership

- Securing outside expertise
- Finding later round investors
- Bringing in other stakeholders
- Suggesting suitable management people
- Have an extensive valuable network
- Start-ups are still isolated from other funded ventures

6.3 Start-up Incubator Model

Incubators are often established to reinvigorate local economies. Though some do take a small equity position in return for start-up funding, the majority don't. Incubators offer a range of services designed to assist new enterprises which generally lasts for a period of 3 years or more. The stage at which a venture enters the program varies; it can be to assist embryonic micro businesses up to struggling small businesses to get back on track. Services provided may include any combination of the following:

- Small seed funding
- Access to low-cost rental premises or small free workspace
- Technology support services
- Assistance raising finance
- Basic legal advice and document templates
- Business mentors
- Network of contacts
- Start-ups may have limited contact with other funded ventures

6.4 Accelerator Model

A reasonably recent innovation, accelerators condense the birthing period of a business idea by a program of intense guidance in boot camp style close contact quarters. This is often associated with rapid technology-based start-ups such as smart phone apps. Time in the program is measured in months rather than years and is akin to a battery hen approach.

- Provides business advice and guidance
- Works towards creation of prototype
- Initial small funding in return for equally small equity stake
- Basic work space (often just a desk) and internet access
- Product launch opportunity to venture capitalists or other funders
- Start-ups encouraged to compete with other funded ventures

6.5 Rainforest Model

The Rainforest Model is based on an holistic and collective framework where resources are interchanged between the ventures comprising the group. This maximises the life of scarce funding by recirculating within the community. Rainforests support the venture from the original 'light-bulb' moment until maturity. The collectivistic nature of the model creates a long-term bond between ventures that only dissipates as the founders exit the firms.

This model provides the most benefits to innovators:

- Low cost structure
- Interconnectivity within the group
- Community of fellow innovators – social interaction
- Role models on hand
- Organisational expertise within central management
- Management facilitation of resource linkage – knows what each needs and has
- Sources customers internally and externally
- Provides varying capital funding at all stages – uses fair trade principals
- Promotes intergroup transactions
- Allows flexibility for ventures to change direction or merge with others
- Trial pitching to peers to improve marketing skills
- Start-ups work co-operatively not competitively

In terms of increasing the likelihood of success, the Rainforest Model provides the greatest opportunities by allowing for resource and information sharing as well as the capability to absorb non-performing ventures into high performing ones. This model is the only one that overcomes all of the previously indentified major risks new ventures face:

- ✓ *A bad idea to start with*;
- ✓ *Under capitalisation*;
- ✓ *Lack of business acumen*;
- ✓ *Insufficient network connections*;
- ✓ *No supportive environment*;
- ✓ *Market access* ; and
- ✓ *Isolation* .

Whilst all models overcome some of these difficulties, only the Rainforest Model gives attention to all. This model is also the best fit with government initiatives designed to stimulate economic activity, create higher skill level employment opportunities, reduce reliance on taxation revenue by generated wealth income and is highly effective at producing these outcomes in declining communities such as Geelong in Victoria, Elizabeth in South Australia or the North West of Tasmania.

Existing government activity in equity investment follows the VC Model such as the 'Venture Capital Limited Partnerships Program of the Commonwealth Government' which provides amounts of $250,000 up to $10 million through intermediary private sector fund managers, with emphasis on:

> ***"The key difference is the government is often more interested in economic stimulus and less anxious about the return on the investment - so there's less pressure on you to deliver short term profits to them right away." (Australian Business Finance Centre 2014)***

The short term imperative is often the urgent need to create employment, regardless of future economic impact or cost efficiency. Economic recovery modeling for the auto industry communities is often compared to the recovery of Newcastle in NSW post steel works closure. Whilst unemployment in Newcastle is currently lower than the national average, the sectors

where jobs have been created and economic diversification directed, imposes a significant future cost burden on government expenditure:

Figure 4 Major Employment Categories Hunter Region of NSW 2006

Industry	Employees
Hospitals	**9,464**
Primary Education	**5,049**
Secondary Education	**4,766**
Aged Care Residential Services	**4,395**
Local Government Administration	**3,747**
Other Social Services	**3,626**
Defence	**3,061**
State Government Administration	**2,960**
Higher Education	**2,578**
Total with budgetary impact	**39,646**
Coal Mining	**6,910**
House Construction	**3,966**
Iron Smelting & Steel Manufacturing	**2,634**
Total Mining & Manufacturing	**13,510**
Supermarkets & Grocery Stores	**6,644**
Takeaway Food Stores	**5,009**
Road Freight Transport	**4,171**
Cafes & Restaurants	**4,009**
Pubs, Taverns & Bars	**2,639**
Department Stores	**2,496**
Total Retail, Food & Transport	**24,968**

(Source: Hunter Valley Research Foundation 2011 pp 11-12)

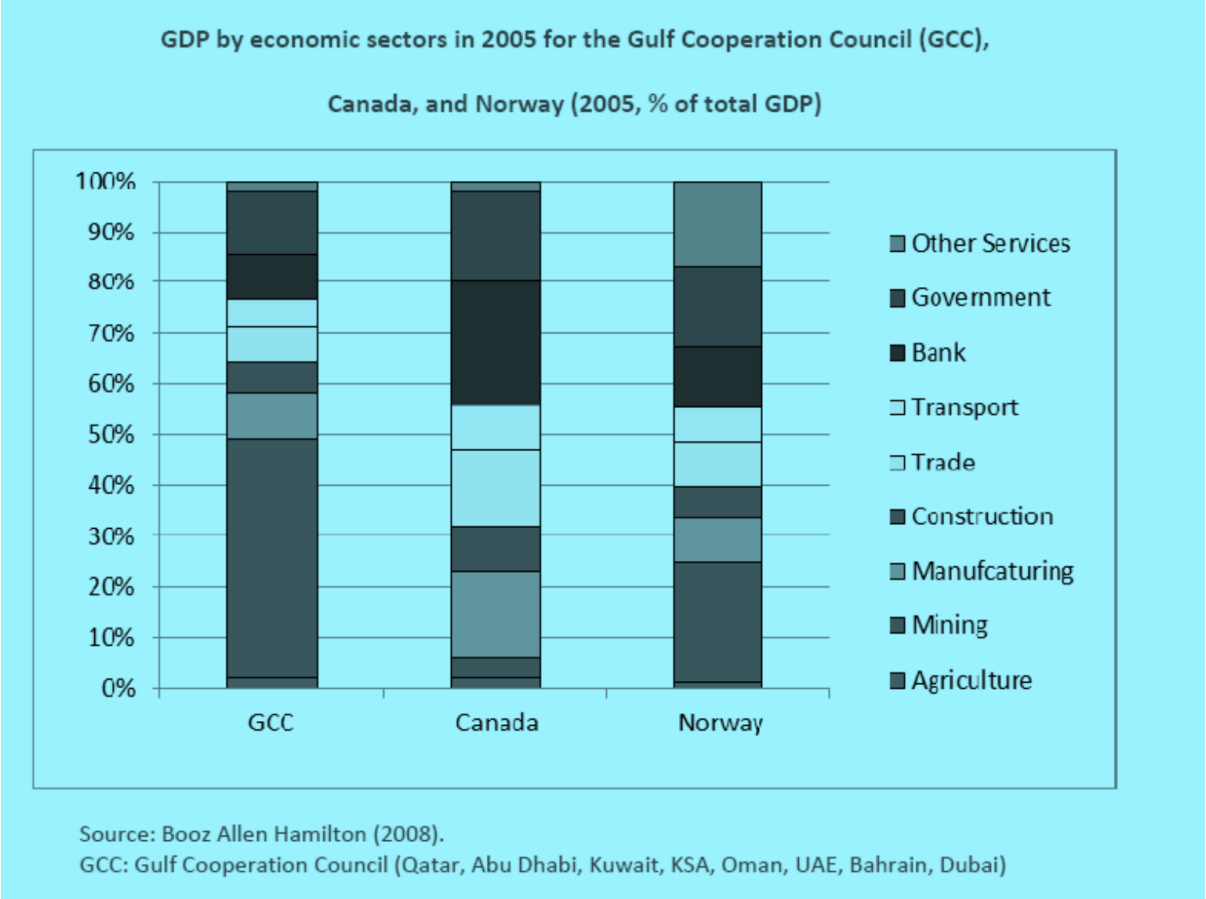
This snapshot of the employment strata shows a heavy reliance on public sector funding and an equally worrying preponderance of essentially low-paid jobs. Economic diversification should consider longer term impacts on Gross Domestic Product instead of short term employment growth and should be the primary goal of government innovation policy.

Terms of Reference

> *(b) The Australian Government's approach to innovation, especially with respect to the funding of education and research,* ***the allocation of investment in industries****, and the maintenance of capabilities across the economy;*

An appropriate model of investment in diversification can be found in Canada and Norway.

Figure 5: Economic Diversification in Gulf States, Canada & Norway



(NB The Gulf States rely on oil production and government for over 60% of GDP)

Where an imbalance exists within an area, Rainforest Clusters by their inherent cooperative structure, automatically create diversification through the selection of complimentary not competitive ventures when establishing the cluster.

7. Establishing a Rainforest Cluster

The cost of establishing and maintaining a Rainforest Cluster Fund (RCF) would depend on the demographics and resource capabilities of the targeted community. For the purposes of illustration of a larger scale cluster, an investment of $50 million will be used to calculate a likely outcome scenario. Recovery funding of $150 million for Geelong subsequent to the collapse of the auto industry would thus support the establishment of three self-sustaining clusters with a higher probability of producing a positive economic result than that proposed.

Under this funding model, $1 million dollars would be invested per company in return for up to a 40% equity stake, depending on the current stage of the venture. Funds would be allocated but not dispensed and held in an interest-bearing designated account, released only as required by the venture. This gives the companies an initial Enterprise Value (EV) of $2.5 million ($1 million = 40% thus 100% = $2.5 million). At the point of exhaustion of the first $1 million, there will be a

compounding of the Future Growth Value (FGV) by a factor on average of ten, giving a new EV of $25 million [Roos 2005]. A second round of funding sourced from the private sector would see an injection of around $5 million for a 20% equity stake, diluting the RCF holding to 30% on a fifty-fifty split-sharing basis with the company founders (each party puts 10% of their shares into the round). The RCF's equity is now valued at $7.5 million or 7.5 times investment. The initial $1 million of government funding could also achieve a fivefold additional capital inflow into the cluster zone for each start-up venture. If the projected 75% (15 out of 20 ventures) of selected start-ups reaches this point, $75 million of free capital (15 x $5 million = $75 million) would be added to the economy of the cluster zone, creating a multiple in add-on localised activity.

Usually a third round of private sector fund raising is needed to fully establish ventures, at an increased FGV of up to $100 million each. $10 million would thus be sought for a 10% stake, diluting the RCF's equity to 25% on a fifty-fifty split (it is standard practice that second round funders seek a non-dilution clause). The original $1 million has now potentially increased to a $25 million share of the EV.

A fourth round external raising would usually be by either an IPO or a Trade Sale to a larger corporation. At this time the FGV for the Start-Ups could be in the range of $50 million to $1 billion each, in line with previously highlighted examples. The RCF would sell 5% of its holding into the IPO for a harvested return of $2.5 to $50 million, whilst still retaining 20% which could be sold over a period of time as the Future Fund did with Telstra shares or held in the case of a "cash cow" high dividend enterprise.

The Australian success story Seek Ltd, the online employment advertiser founded in 1997, went to the market through an IPO in 2005, resulting in a market capitalisation of $587 million. Today the market value is $1.98 billion and the company now employs 700 people. Interestingly, Seek received a $2.5 million injection from the Federally Govt via their innovation fund.

If we extrapolate the Rainforest formula to the Seek Ltd example, the RCF's 25% stake prior to IPO would have returned $292 million and created around 700 jobs per venture in the cluster zone (15X700=10,500 predicted possible direct employment).

The Rainforest Model offers other benefits that increase the potential for success.

8. Economies of Scale

Unlike stand-alone ventures, VC equity staked or one-off government funding grants, there will be significant economies of scale with the Rainforest Model:

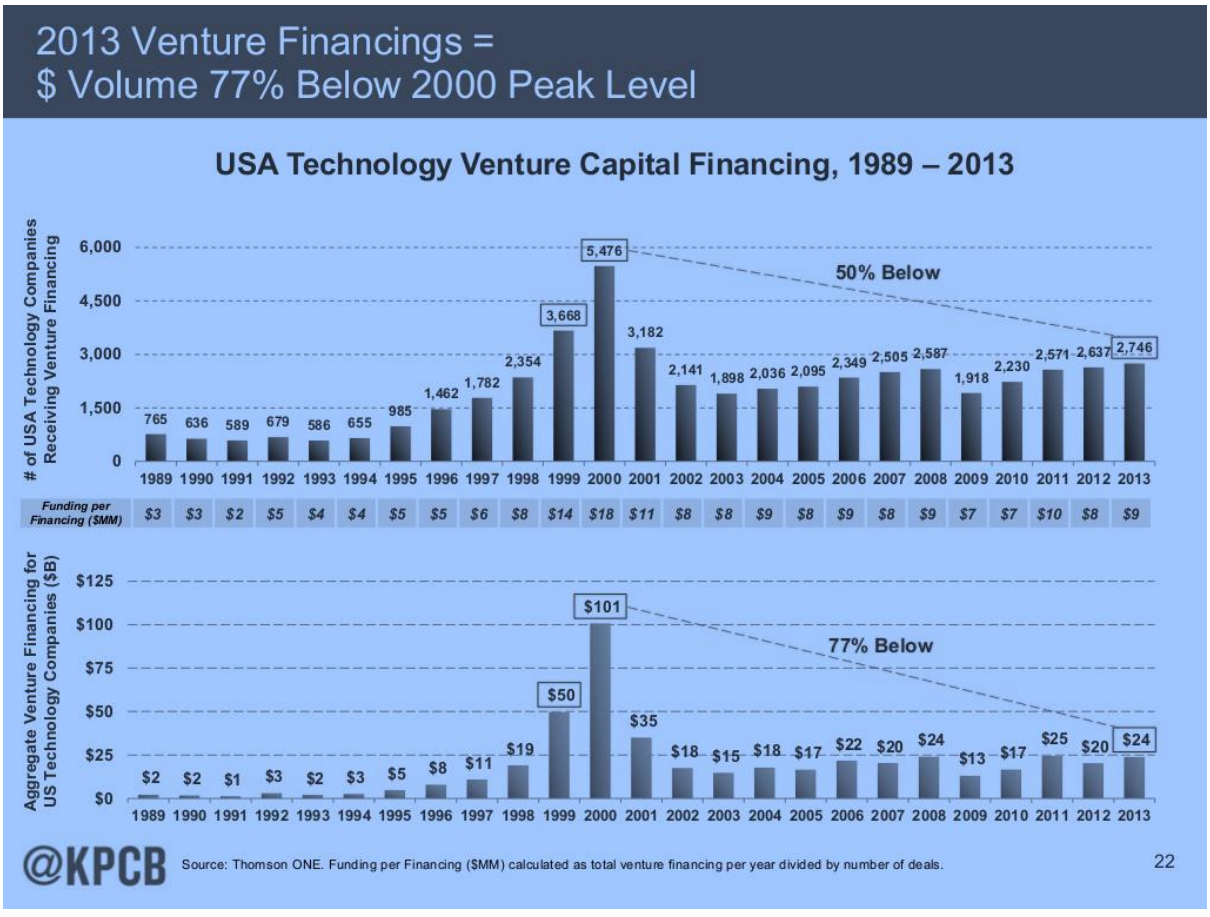
- Reduced operating costs from shared resources such as administration, OH&S, office space;
- Recycling of funding within the cluster through cooperative venture mix;
- Ability to merge underperforming ventures with outperforming ones;
- Negotiation of special deals on banking, accounting, legal, travel, freight, power, technology purchases, advertising, in effect a mini buying group;

- Group insurance scheme;
- Serviced accommodation sourcing for relocated founders;
- Opportunity to secure a low cost large complex that can house the cluster ventures and which would normally be too big for one operator; and
- Common fit-out of office space.

9. Finding the Right Opportunities

There are a limitless number of business ideas seeking funding to get off the ground. Most will have little success in getting the necessary backing. Even potential high worth opportunities fail to get a backer in this highly competitive market. This difficulty is evident in the sharp decline in VC funding in the USA, as illustrated by Fig 6.

Figure 6: Venture Capital Financing in USA



In 2013 in the USA, just 2,746 technology ventures received VC funding, down from the 2000 peak of 5,476. The size of the funding pool has dropped by 77% over the same period. This agrees with the overall decline in new venture creation shown in Fig 3.

The RCF can therefore afford to be very choosey indeed!

Many of today's entrepreneurs developed their innovations at university, either solo or in conjunction with fellow students. This provides an abundant source of future opportunities waiting to be tapped and easily located. In addition, advertising on professional sites like LinkedIn would unearth many more high growth potential concepts.

These identified opportunities would be assessed against a well established venture capital formula and business model framework. Technical advisors would be engaged to assess concepts within their specific field. This process will leave very little to chance and is a vital element in establishing a Rainforest Cluster and overcomes the most critical failure element of not being a viable opportunity.

Funded start-ups would sign a contract to be based in the innovation cluster zone for a minimum period. The permission of the RCF would thus be required if any future purchaser of the business desires to relocate it out of the designated cluster zone.

The twenty start-ups would initially employ from 5 – 10 persons (100 – 200 staff). The shared office services, possibly contracted out, would employ a further 10 staff. Oversight by the RCF would add a further 10 positions. Total initial staff on-site would then be an average of 150 persons.

Employment opportunities tend to grow rapidly with high growth opportunities. Facebook started in a garage in 2004 with just the two founders and today employs over 6,000 staff. LinkedIn, the professional networking site started with 10 employees in 2003 and grew to 5,045 staff by 2014. Two start-ups totalling over 11,000 new jobs. If the projected twenty start-ups achieve just 20 % of this, they would still create over 22,000 jobs.

In addition to direct employment, there would be considerable indirect employment add-ons through contract work by the various professions. The majority of funds would be expended within the cluster zone, except for some technology and specialist equipment, generating substantial localised economic activity. Only where a local firm cannot supply a product or service or quoted price is excessive, would external sources be sought under the Rainforest Model designed to recycle resources.

10. Conclusion

In comparison to the government's existing approach to innovation whereby a range of grants, loans and investments are made to individual ventures and at various stages of the business cycle, establishing Rainforest Clusters which target specific areas of economic need, will provide a higher level of confidence in achieving desired growth outcomes.

Most importantly, governments the world over are experiencing increasing difficulty in raising sufficient revenues to meet ever expanding social obligations through the impost of taxation. Tax elements are growth inhibitors, whereas innovation inspired ROI from equity investments adds to growth of economies. Based on proven results from other such government funding models, a well designed and operated Rainforest Cluster can achieve better than a ROI of 32 times outlay, as well as an even greater multiplier effect. It was illustrated that if an equivalent amount to that provided as non- returning grants to the auto industry over a three year period

was invested in creating RCF's of $50 million each, equity return to the government could exceed $59 billion and create 792,000 direct employment opportunities ($1800m ÷ $50m x 22,000 per cluster).

Rainforest Clusters are self-sustaining, returning a percentage of harvested profit to benefit new ventures. As a tool to reinvigorate a collapsed or stressed economy of a specific region e.g. Geelong in Victoria, Rainforest Clusters would be highly effective and achieve a faster turn-around than current aid packages. As shown by the dissection of jobs created in Newcastle post collapse of local manufacturing, a majority of new employment opportunities can tend towards government services or lower paid positions, which in the longer term will increase the burden on tax revenues.

Therefore, it is highly recommended that creation of several trial Rainforest Clusters in economically stressed regions be commenced as soon as possible.

The author is available should the Economics References Committee require further details or clarification of the contents of this submission.

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