

# Tech style innovation for the resource industry

Zane Prickett  
Justin Strharsky  
Paul Lucey  
Kevin Baum

RIIT is a not-for-profit company working to build a sustainable start-up ecosystem focussed on the challenges and opportunities of the mining sector.

---

# Table of Contents

Executive Summary .....	3
What is the problem? .....	3
Key Findings and Recommendations .....	4
What is the solution? .....	7
Why focus on the resources sector?.....	8
Why Australia, Why Perth?.....	10
What is the Government's role?.....	11
What can be learned from other accelerators? .....	12
What makes this different? .....	15
How will it deliver Innovation to Australia? .....	16
References and Bibliography .....	18

## Executive Summary

The Terms of Reference for this inquiry are quite extensive and broad and this submission will focus specifically on the resource sector by highlighting the benefits of a more technology style start up orientated innovation approach in this sector. Innovation is much more than just traditional research and development and it is important to take successful lessons learnt from other industries and countries and apply them to Australia's successful industries, this is also not just our struggling industries. There is more to be gained for Australia to play to our strengths rather than trying to prop up struggling industries. Australia needs to apply innovation to its strengths before it is disrupted by someone else.

The Australian resources sector is challenged by declining productivity and international competitiveness. The industry recognises that one way to improve productivity is through the use of new technology. However, the industry has traditionally been slow to adopt and integrate new technology products. This can be achieved by taking successful models such as accelerators for startups from the tech industry and bringing it across to the resources sector in existing hubs of resource excellence such as Perth. Whilst this could be called an Australian issue it is important to have location specific focus to ensure success and for reasons listed in this submission, Perth presents itself as a logical choice.

The technology startups coming out of the accelerator will create jobs, Australian export income, and investment returns. They will also assist the local resources sector to operate more efficiently and become more internationally competitive.

Some of the challenges to be faced in running resource focussed tech startups in Perth include:

- High cost of living in Perth
- Relatively few government incentives for startups
- Distance from other markets
- Limited pool of talented technical founders
- Limited pool of investment capital

However, we believe that these challenges are outweighed by the following opportunities, which make the prospect of accelerators for startups a very attractive for innovation:

- There is growing interest on the part of capital investors in WA in diversifying into tech and biotech and away from exclusive focus on resource exploration.
- Sources of capital that previously focussed on resource exploration do not know how to invest in technology startups (risks, business models, etc.), and are seeking assistance to do so.
- Australian startups focussed on consumer web and mobile businesses have strong competition from the Silicon Valley and other ecosystems.
- Startups seeking an accelerator in the consumer web and mobile market have many options; these options don't exist for those with startups focussed on the resource sector.
- Perth is the de-facto resources innovation hub of the world.
- The customers and business problems to be solved for startups focussed on the resources sector are in Perth.

## What is the problem?

The Australian resources industry needs to quickly adopt new technologies in order to become more efficient and globally competitive. However, our local technology innovation ecosystem is currently failing to deliver technologies focussed on the sector that can be quickly integrated and deliver the necessary efficiency gains.

### Resource Industry Challenges

The Australian resources sector faces several challenges. Productivity in the sector has dropped by nearly 33% between 2000-01 and 2009-10 according to the government. Several high-profile projects such as BHP's \$30

billion Olympic Dam expansion and \$45 billion Woodside Browse LNG Project have been put on hold in part because of rising costs, reductions in global demand and fluctuating commodities prices.

Resources companies have typically been slow to adopt new technologies and in the face of cost pressures, have often cut spending on research and development.

*“If we want to fully realise the long-term benefits of the Asian growth opportunity in front of us, we need to seriously address our declining competitiveness. Today increased labour, energy and transport costs, and an overall decline in productivity, mean our costs are two thirds higher than our rivals. Not that long ago our capital project costs were globally competitive. Now they are much higher than global averages.”*

*David Peever, Managing Director, Rio Tinto Australia; 18 September 2012, The Resources Boom: Prospects and Challenges A View from the Sector*

---

### Technology Innovation Challenges

There is currently a low acceptance rate for emerging technologies in the resource sector outside of traditional pathways. The industry tends to focus on research-intensive technologies that take 10 to 15 years to develop, rather than on software and IT solutions that can be built and integrated in a matter of months. This makes sales of new technology solutions into resources companies quite challenging.

Australian startups also face significant funding challenges. Per capita investment capital available in Australia is just 5% of that in the United States.

As a result, low-cost, high-productivity technology startups often find the resource sector a very difficult proposition and tend to focus elsewhere, such as on consumer mobile products.

## Key Findings and Recommendations

RIIT has conducted research and worked with its partners in the resources industry, technology innovation community, academic institutions, and government to understand the challenges described in the previous section. As a result, we've been able to articulate four key findings limiting the development and adoption of new information technology by the resource sector. In addition, we believe we have identified four actions, which if implemented, should address these limitations. We summarise these findings and recommended actions below.

### 1. Early stage funding for startups is insufficient. Provide access to early stage capital to attract and retain top talent to resource industry challenges.

In Australia, only \$4.50 per capita in start-up capital is available to startups, compared to \$120 in Israel, \$85 in the US, \$20 in South Korea and \$15 in the UK (StartupAUS Crossroads Report).

Start-up costs for B2B (business to business) companies also tend to be significantly higher than those for consumer web or mobile startups. This is doubly true for startup companies serving the resources sector. Enterprise products tend to be costlier to build, have more support and training requirements, and require integration into existing legacy IT environments. Perhaps partly because of long project lifecycles, resource companies have traditionally been slow to adopt new technology products.

Other industries have incentivised startups to pursue development of products specific to their markets. Consider the following examples:

- Finance: [FinTech Innovation Lab](#)
- Biotechnology: [Central New York Biotech Accelerator](#)
- Education: [Kaplan EdTech Accelerator](#)

Currently, no such targeted funding incentives exist to motivate startups to pursue resource industry challenges.

For these reasons, few Australian startups choose to build technology products for the resources sector, and the few that do face substantial funding hurdles.

## **2. Startups that scale before finding product-market fit frequently fail. Assist promising startups to validate their products through a structured program.**

Research from the US tech industry demonstrates that companies which do not quickly validate that their product solves a genuine problem and delivers value fail more quickly and more often than others. Validation of a solution before scaling the business ensures capital, time, and talented personnel are not wasted and that a new venture either grows successfully or fails fast. Validation is the proof that a potential solution delivers value to the market – it is the demonstration of product-market fit.

*“Based on analysis of about 3200 high growth technology startups, approximately 70% of the startups in the dataset scaled prematurely and 74% of high growth technology startups fail due to premature scaling.”*

*Compass (Premature Scaling article)*

---

Startups in the resources sector would benefit from a structured program that delivers formal instruction in key concepts as well as connection to industry mentors at a variety of resources companies. Working closely with industry mentors at more than one resource company would ensure that startups are solving a problem faced by many in the industry – that their potential solution has a broad market. Furthermore, startups could pilot early versions of their products with companies represented by mentors. This would ensure that participating startups validate their proposed solutions.

## **3. Integration challenges prevent resources companies from adopting new technologies quickly. Reduce integration costs and risks through a structured program and industry partnerships.**

Resources companies have typically made significant investments in software and hardware solutions, and have extensive stores of historic data. Changing or replacing one of these legacy systems often requires a temporary interruption in operations, at great cost. It is also often unclear at the outset whether a new piece of technology will ‘play nice’ with existing systems – will it integrate well with existing systems, or will it cause failures or corruptions of data? Resources companies therefore perceive significant risks and costs associated with the adoption of a new technology product, and are slower to benefit from new technologies as a result.

Startups working in the sector must understand these risks and costs and work to reduce them as much as possible.

There is a need for a structured approach that connects startups to industry mentors that understand the legacy systems and business processes in place at customer companies. Participating startups would be able to build and test integration solutions that reduce the risks and costs associated with their products. These solutions would be informed by minimum requirements and standards communicated by resource companies. Resources companies would thereby have access to a stream of new products with known and minimised integration risks.

## **4. Without sufficient growth capital, a startup will be unable to support its early customers and acquire new ones. Provide access to sources of follow-on funding.**

A technology startup may develop a great product that solves a problem for the resources sector, but still fail. To benefit from a new technology, a large resources company may require substantial training and after-sales support. These are services that early stage startup companies often find difficult to provide. If they lack the resources to meet the requirements of contracts with industry customers, they will fail. In addition, startups in the sector will face significant sales costs to acquire new customers even after demonstrating a successful product.

For these reasons, startups in the resources industry require access to additional funding after they have demonstrated product-market fit.

Startups need access to sources of follow-on funding capital. There needs to be more focus on preparing startups to pitch for and secure additional funding. It is also recognised for the need to build a network of investors interested in funding B2B products, and familiar with the sector.

Specifically, implementing the following actions via technology accelerators to address the need to provide startups with access to additional capital:

- Prepare startups to attract and receive funding through the curriculum of an accelerator. At a minimum, this should include:
  - Pitch preparation and coaching
  - Education on deal structuring (term sheets, etc.)
  - Assisting startups to build personal networks with investors
- Host a “Demo Day” at which startups pitch their products and businesses to investors and strategic customers.
- Build and maintain a network of investors interested in B2B products in the resources sector.
- Consider expanding access to international funding by hosting “Demo Day” type events in locations such as the Silicon Valley.

# What is the solution?

Startup technology accelerators focussed on the resource sector is the best way to address the findings described above and deliver on the above recommendations. An accelerator would attract and assist startups to create fit-for-purpose new technologies that can be quickly adopted by the industry to achieve productivity and efficiency gains.

*Innovations and technological progress are key drivers of productivity growth over the long term. A decline in the quality of resource deposits that results from the mining of marginal or deeper resources is associated with a rise in the unit cost of extraction. Growth in innovations, a more skilled workforce, a faster rate of adoption of better off-the-shelf technologies as well as new technological breakthroughs would all likely assist in productivity growth of the Australian mining sector.*

*Productivity in the Australian Mining Sector, Australian Government Bureau of Resources and Energy Economics (BREE) Discussion Paper Series 13.01, March 2013.*

## What is an accelerator?

Accelerators are programs for taking teams and ideas and quickly producing successful companies. They are called accelerators because they accelerate the time to:

- availability of mature technology
- return on investment
- productivity and efficiency gains

## Creating Jobs and Value

Successful accelerators are engines for producing jobs and shareholder value. According to Seed-DB (a database of accelerators), they have resulted in the creation of more than 16,000 jobs and almost \$1.9 billion USD in returns on exits (trade sale or IPO of member companies). In fact, these results are more impressive because of the fact that accelerators have only existed since 2005, and most have only been around for 5 years or less.

Y Combinator is considered the first accelerator. It was started in 2005, in Silicon Valley. Y Combinator has so far graduated 634 companies, which are collectively now employing more than 5000 people. Dropbox and Airbnb are two very well known Y Combinator companies.

## Methodologies

Accelerators frequently adopt and teach several business methodologies shown to accelerate the time to

One such methodology is the Customer Development process articulated by Steve Blank. Blank argues that for early stage startups, finding and engaging with customers is more important than building technology products. Essentially, he advocates first developing a clear understanding of *what to build*, before committing limited resources to product development.

**Accelerators** are fixed-term, cohort-based programs, that include mentorship and educational components and culminate in a public pitch event or demo day.

Some key characteristics of accelerators are:

1. The application process is open to anyone, but highly competitive.
2. A seed investment in the startups is usually made, in exchange for equity. Typically, the investment is between US\$20,000 and US\$50,000.
3. The focus is on small teams, not on individual founders. Accelerators consider that one person is insufficient to handle all the work associated with a startup.
4. The startups must "graduate" by a given deadline, typically after 3 months. During this time, they receive intensive mentoring and training, and they are expected to iterate rapidly. Virtually all accelerators end their programs with a "Demo Day", where the startups present to investors.
5. Startups are accepted and supported in cohort batches or classes (the accelerator isn't an on-demand resource). The peer support and feedback that the classes provide is an important advantage. If the accelerator doesn't offer a common workspace, the teams will meet periodically.

The primary value to the entrepreneur is derived from the mentoring, connections, and the recognition of being chosen to be a part of the accelerator. The business model is based on generating venture style returns, not rent, or fees for services.

- Adapted from Wikipedia

Blank defines Customer Development as getting out of the building, talking to customers, and using the resulting feedback to discover what customers want. This knowledge should then be used to build and refine a product that solves their problem. (Blank 2005).

Another approach commonly applied in accelerators is that of the Lean Startup. Introduced by Eric Ries in his book of the same name, The Lean Startup methodology is about reducing waste in the process of finding a scalable and viable business by combining the ideas of Customer Development and agile software development. It is based on the iterative build-measure-learn loop where the first step is to figure out the problem that needs to be solved and develop a minimum viable product (MVP).



The Build-Measure-Learn Loop. Eric Ries 2011  
(from <http://theleanstartup.com/>).

### Building Viable Companies

A key function of accelerators is to develop the participating teams into viable companies. This is accomplished through a combination of education, mentorship, and network development.

Education in accelerator programs often includes seminars on a wide range of topics, such as search engine optimization, online marketing, approaches to split-testing, and term sheets. Seminars are typically given by the directors of the program or by guest speakers, who often provide one-on-one mentoring after their talks. Seminars are intended to compliment and broaden the often specialised experience of accelerator participants, and to connect them to speakers who are experts in their fields.

This direct interaction with expert mentors assists participating teams to build a network of industry contacts that often provide key assistance in future stages of business growth.

Accelerators also connect participants to the services and advice required to create well-formed companies. These include IP protection, company structuring, and accounting.

## Why focus on the resources sector?

### Why specialise at all?

Specialization allows an accelerator team to build relationships with key individuals that can contribute to the success of participating companies because of their more relevant experience.

For example, without such specialisation, one might be able to pair participants with mentors that have experience in their general area of business:

“Your product is a targeted at companies operating earth moving equipment, we’d like you to work with John, he also runs a B2B software company.”



With a specialised industry focus however, one can pair participants with mentors with more applicable experience, who might also become customers or partners of the participating companies:

“Your product is targeted at companies operating earth moving equipment, we’d like you to work with Jack and Fred. Jack manages the largest earth moving contract at Rio Tinto, and Fred is the state manager for the largest earth moving equipment manufacturer.”

Specialisation makes it possible to integrate participating companies immediately into a network of the largest mining distribution partners in the world that sit atop the most valuable ecosystem that they can impact. A resources focussed accelerator would work to engineer winning outcomes from the start by aligning sources of capital, top talent, innovative technology and industry-leading distribution.

### Why the Resources Sector Specifically?

The resources sector currently represents incredible opportunity. The sector has had a series of booms that have produced both significant financial resources and significant opportunities for improvement.

Productivity in the Australian mining sector has declined by 33% over the past 10 years according to the Australian Government.

*“The mining sector stands out from most other sectors in Australia in that there has been a major decline in measured (unadjusted) productivity.”*

*Productivity in the Australian Mining Sector, Australian Government report on productivity in the mining sector; March 2013.*

---

Deloitte identified the adoption of new technology as one of the key challenges facing the mining sector in 2013 and a primary way of improving productivity.

*“To reduce labour costs and improve operational efficiency, mining companies have been increasing their technology investments. Despite a demonstrated willingness to innovate, however, many mining companies continue to suffer both financial and process inefficiencies by failing to leverage basic back-end technologies.”*

*Deloitte: Tracking the trends 2013*

---

In fact, many of the software systems relied on by the industry were built 10 years ago, and are showing their age.

The sector is aware of these deficiencies and is actively seeking opportunities to improve.

### How big is the opportunity?

McKinsey’s 2013 report *Disruptive Technologies: Advances That Will Transform Life, Business, and the Global Economy* identified the top 12 disruptive technologies that have the greatest potential to drive substantial economic impact and disruption by 2025. They estimated the potential economic impact each technology could create in 2025 and concluded that these 12 technologies alone had “the potential to drive direct economic impact on the order of \$14 trillion to \$33 trillion per year in 2025.”

Of those twelve disruptive technologies, fully 11 will have direct and significant impacts on the Australian resources sector. We estimate that these disruptive technologies have the potential to account for **over \$100 billion of economic impact by 2025.** <sup>Ref. 21</sup>

These 11 disruptive technologies are:

1. Mobile Internet
2. Automation of Knowledge Work
3. The Internet of Things
4. Cloud technology
5. Advanced robotics
6. Autonomous and Near-Autonomous Vehicles
7. Energy storage
8. 3-D printing
9. Advanced materials

10. Advanced oil and gas exploration and recovery
11. Renewable energy

(Next-generation genomics is the 12<sup>th</sup> technology on the list, for which we currently see no direct impact on the resources sector.)

The question for the Australia is whether we will simply be consumers of these technology innovations or also their creators.

## Why Australia, Why Perth?

Given the unique opportunity presented by focusing on the resources sector, there's no better place to host a resource based startup ecosystem than Australia and more specifically Perth. Australia as a world leading resource exporter has a natural advantage of multiple potential customers and technical challenges for any young resource focused technology company.

Perth is one of the de-facto resources innovation hub of the world, and is home to the customers, supply chain partners, and industry experts needed to make the accelerator a success. In addition Western Australia, over 50 mineral types, onshore and offshore oil and gas activity, open pit and underground mining, and exploration and production, is one of the top resource technology development locations in the world.

Global resources companies and some of their suppliers have already located the individuals and funding necessary to support innovation in Perth. Consider the following list, all located in Perth:

- BHP Billiton's Global Technology Centre
- One of Chevron's two global innovation hubs
- One of Rio Tinto's Technology & Innovation centres
- General Electric (GE) technology and learning centre
- IBM Natural Resources Solution Centre
- BASF Global Mining Research Centre

Technology startups often commercialise research originating from universities or other academic institutions. They are able to efficiently generate profits from intellectual property resulting from research. Proximity to research institutions and the intellectual property, ideas, and trained individuals they produce could therefore contribute to the success of the accelerator. Perth is home to significant academic research into resource production and extraction:

- Energy and Minerals Institute
- UWA
- Curtin
- CSIRO
- Australian Resources Research Centre in Perth including CSIRO, Curtin, & UWA

A significant amount of the world's natural resources extraction and production takes place in Western Australia. WA is therefore home to a variety of technologies and processes that could be improved upon by startups in the sector. Consider the following facts about the resources industry in WA:

- Production/extraction of over 50 different mineral resources
- 22.2% of the world's iron ore output in 2012 (DMP), 14% of alumina, 13.4 per cent of the world's nickel output, 11% of garnet, 7% of zircon, 7% (and growing) LNG seaborne trade, 6% gold,...
- In 2013 WA exported over \$113 billion in minerals and petroleum which was equal to ~63% of total Australian resources exports

Additionally, Australia's resources sector is perhaps most in need of the improvements to efficiency and competitiveness that can come with the adoption of innovative technologies. Consider the following statistics from research conducted for the Minerals Council of Australia by Port Jackson Partners:

- Capital costs are rising more rapidly here than in the rest of the world, with iron ore projects now 30% more expensive than the global average and thermal coal 66% more expensive.
- By 2020, Australian projects beyond the Pilbara are forecast to have higher delivered costs than benchmark Brazilian producers and will cost up to 75% more to build than projects in West Africa.
- Nearly half of Australia's production is now in the most expensive 25% of mines globally. Even in iron ore we have lost our operating cost advantage for all but established Pilbara producers.
- 75% of all projects included in the BREE major projects list remain uncommitted.

## **National Reach**

Although Perth is the ideal home for a resource based startup ecosystem, the effort to improve the resources sector and build a sustainable innovation ecosystem must be a national one.

A startup ecosystem should attract participation from all over Australia, as well as overseas.

## **What is the Government's role?**

Is there a role for government to play in creating a sustainable tech startup ecosystem?

Governments around the world have taken different approaches to incentivising innovation. In general, Australia's regulatory environment is favourable for startups. The barriers to registering a new business, in both time and costs, are relatively low. Tax rates are also comparable to other developed economies, and research and development is supported through the R&D tax incentive/credit scheme. However, government support for innovation and research and development has declined significantly in recent years.

RIIT is not a politically motivated organisation, and policy advocacy is not a primary focus of our vision. However, we may occasionally articulate views on specific policies that we believe positively or negatively impact the nascent startup ecosystem in Australia. Through our efforts to build a sustainable innovation ecosystem in Australia, and our investigations of ecosystems abroad, we've identified several areas in which Australian legislation could be revised to create more competitive conditions for Australian tech startups.

### **Revise ESOP Legislation**

The current approach to the Employee Share Option Plan (ESOP) in Australia results in options receivers being taxed upfront when options are issued, as opposed to when they are sold. This despite the fact that many options will prove to be worthless over time, as startups frequently fail.

This makes it impractical to incentivise startup employees with an ESOP.

For Australia startups in general, and those in Perth in particular, this creates a barrier to competition for scarce technical talent. Skilled technical individuals often have their choice of relatively high-paying jobs in established companies. In other markets, such as the US and UK, startups with scarce funding can offer share options to attract and retain technical talent. This has allowed them to compete for human resources competitively with more established companies. The same is not true in Australia under the current ESOP scheme, and as a result, Australian startups may be less competitive in terms of remuneration than their peers overseas.

Therefore, one thing the Australian government could do to support the growth of a local tech startup ecosystem and make conditions for Australian startups more competitive with their peers in other markets is to revise the existing ESOP legislation. We understand that a consultative process is currently underway to consider possible revisions to the ESOP legislation. We recommend that the relevant government entities (including Department of Industry and the Treasury) engage in a dialogue about the ESOP legislation that is informed by the views of the startup community and aimed at improving conditions to support the growth of local technology startups.

### **Provide Financial Support for Commercialising New Technologies**

The Australian government recognises the need to support the commercialisation of new technologies. The discussion paper for the new Entrepreneur's Infrastructure Programme (EIP) states: "it is well documented that Australian businesses underperform in comparison to their overseas counterparts when it comes to bringing discoveries successfully to market, quickly, and at competitive scale" (p.4). However, the government recently suspended the Commercialisation Australia (CA) programme, which provided early stage commercialisation support to many Australian innovations.

Under the government's EIP, commercialisation support in the form of 1-to-1 match funding is available up to \$250,000. This is significantly less than was available under the Commercialisation Australia programme, which included match funding of up to \$2 million.

Providing more early stage commercialisation match funding under the EIP is another action the government could consider taking to promote a favourable environment for Australian tech startups.

### **Support Technology Startup Accelerators**

According to the government, the EIP services include market and industry information, business management advice and skills from experienced private sector providers, access to innovators, products and services, connections with potential markets, and commercialisation advice through specialist sector expertise. These are in fact, some of the central services provided by tech accelerators. As argued in detail earlier, a tech accelerator specialising in a sector such as resources should be able to out-compete any general provision of such services. Furthermore, providing such specialised services is the core business of an accelerator; it is arguably not the core business of government.

The government could, therefore, improve the effectiveness of the EIP by directly supporting tech accelerators.

Other developed economies have recognised the ability of startup accelerators to quickly build scalable technology businesses and are providing financial support to help them do just that. Most recently, in 2013, Canada established the Canada Accelerator and Incubator Program (CAIP) to help accelerators and incubators deliver their services to promising Canadian firms. CAIP provides up to C \$5 million per year to each eligible accelerator program.

*“It is critical for Canada’s small- and medium-sized businesses to harness innovation and get their ideas to the marketplace so that they can grow, create jobs and contribute to the economy... **Accelerators and incubators have the experience, tools and know-how to help get small Canadian start-up businesses up and running.** Our Government is pleased to be supporting private sector-led initiatives that further strengthen our venture capital market.”*

*Canadian Prime Minister Stephen Harper; June 14, 2014 (emphasis ours)*

---

The founders of AngelCube, Australia’s first tech accelerator, have recently proposed the following policy amendments which would help the EIP support tech startup accelerators:

1. Venture accelerators are recognised as a new category to apply for Business Management grants.
2. Venture accelerators can apply directly under the three year rule for Business Management grants
3. Venture accelerators are recognised as an ‘expert network’ for the nomination of Commercialising Ideas grant
4. Allow ‘Business Management’ grants up to \$100,000 for venture accelerators to support between 6-10 companies.
5. Business Management Grant: Pre-approval of grant based on the Venture Accelerators initial commitment to provide minimum of \$20,000 to each accepted company, indicating an initial investment from the accelerator of \$120,000-\$200,000.
6. Commercialising Ideas Grant: Allow rapid process approval in recognition of the due diligence conducted by the Venture Accelerator and co-investors

*Australia needs to continue to build a culture of innovation. Serial entrepreneurship is alive in the Australian technology sector and the knowledge transfer to venture accelerators is self-evident. Government can contribute directly by recognising Venture Accelerators in its programs and the impact they can have.*

*“Proposal of policy amendments to the Enterprise Infrastructure Program to support the activity of technology venture accelerators,” Adrian Stone and Nathan Sampimon, June 18, 2014*

---

## What can be learned from other accelerators?

### Surge Accelerator (Houston, Texas, USA)

Surge is an accelerator focussed on startups in the following sectors: oil & gas, energy, clean tech, and water. Surge has completed three programs to date and is currently processing applicants to their fourth program.

Surge offers participants \$30,000 USD in seed investment.

Participants in the first three Surge programs have so far raised over \$150 million in follow-up funding, have secured contracts with over 75 different enterprise customers, and have created more than 150 jobs.

Due to the fact that Surge was undergoing a busy selection process during the time of the writing of this document, we were unable to interview the program's directors to learn more.

### **Startupbootcamp: Smart Transportation & Energy Accelerator (Berlin, Germany)**

Startupbootcamp started in 2010 and now operates globally with eight accelerator programs and seven branches in Amsterdam, Berlin, Copenhagen, Eindhoven, Israel, Istanbul, and London.

In July, 2014, Justin Strharsky of RIIT travelled to Berlin and met with Alex Farcet, Co-Founder of Startupbootcamp and Managing Director of the Berlin program, and Luisa Maier, COO of the Berlin program. Farcet and Maier generously shared much of what they've learned running Startupbootcamp programs.

Globally, Startupbootcamp has accelerated 139 startups, of which 77 have raised follow on funding of more than 36 million Euros. Startupbootcamp companies have created almost 600 jobs.

The Berlin branch has completed two 3-month programs, one each in 2012 and 2013. The applicants have just been selected for the 2014 program.

This year, the Berlin program has shifted from a general technology focus to a specialisation in smart transportation and energy. This shift in focus mirrors changes happening across the global network, as the board of directors has recognised distinct advantages to be gained with focusing their accelerators on specific industry verticals. Other Startupbootcamp programs now have industry focuses that include financial technology, mobile, and contactless technology (NFC, etc.). The choice to focus on energy and smart transportation in Berlin reflects the strengths of the local economy in automotive technology and alternative energy.

The Berlin program's industry focus has resulted in partnerships with Bosch, Mercedes-Benz, Cisco, and Castrol. Program participants will build relationships with industry contacts, and the industry partners will benefit from access to the local innovation ecosystem.

Startupbootcamp has involved its industry partners in the process of selecting the latest round of program participants. This has supplemented the technical and startup-related experience of the existing team with critical industry experience. It has also created a deeper commitment and sense of shared goals on the part of the industry partners.

Startupbootcamp also strives to maintain an active relationship with its industry partners by holding weekly update sessions and involving partners in events held at the accelerator's co-working space.

This year, when shifting to a focus on energy and transportation, Startupbootcamp Berlin saw its annual applications drop by half, from around 400 to 200. This was expected, as the narrow focus eliminated any startups not focussing on these sectors. However, one might have expected an even sharper drop in applications. It turns out that the fact that 200 applications were received is due to a concerted effort to recruit applicants. The management team expected that an industry focus would result in fewer applications, and therefore started a program of identifying potential applicants and encouraging them to apply. They worked with several "startup liaisons" around the world that used tools like LinkedIn to identify and reach out to potential candidates. Despite the increased effort on identifying and recruiting applicants, only eight applicants met the selection criteria and were accepted into the 2014 program. In summary, the program identified a hotlist of 500 candidates from around the world, of these, 200 applied, and eight were accepted.

Startupbootcamp has also been making changes to its formal instruction program. Feedback from participants showed that some elements of the formal program weren't applicable or useful for some participants. In addition, the management team wanted each participant to be able to dedicate as much time and effort to their startup businesses as possible. For this reason, the program has reduced the time spent on formal training sessions, and increased the time available with industry mentors. Alex Farcet characterised this as the program "becoming more adaptive over time". As the accelerator management team learns how best to assist participants, it adapts the program accordingly.

#### **Summary of recommendations:**

- Involve industry partners in the applicant selection process.
- Keep industry partners informed and involved through regular updates and participation in events.
- Actively recruit applicants globally.
- Don't over-burden participants with formal instruction if it isn't suited to their individual requirements.

### AngelCube (Melbourne)

AngelCube is an accelerator program for consumer tech startups in Melbourne. Adrian Stone is the founder, CEO, and lead investor at AngelCube. He shared some of what he's learned in running the program during an interview with Justin Strharsky of RIIT.

AngelCube started in 2011 and has had four cohorts graduate from the program. They are currently selecting participants for their 2014 program. Initially they began by holding two programs a year for about 5 startups in each program. They quickly learned that the logistics and organising effort required to conduct two programs a year was unsustainable. In their 2<sup>nd</sup> year (2012) they switched to one program for up to 10 participants, and have used this approach since.

AngelCube has made minor changes to its selection process each year. The most significant change has come this year, as they have moved to using **AngelList** to streamline their application and selection process. AngelList gives AngelCube a single tool for collecting applicant information, customising an application questionnaire, and assisting applicants to communicate with investors. AngelCube believes that this change will cut the time spent selecting participants in half with no loss in quality. The selection process involves picking a shortlist of 20 or so applicants based on initial criteria (facilitated now by AngelList) and then assessing the pitches of the shortlisted candidates in person. AngelCube has experienced a gradual decline in the number of applicants over the past three years, but has seen the quality of applicants increase.

AngelCube offers \$20,000 initial investments for 10% equity in participating companies. They have had two companies decline offers to participate in AngelCube on the basis of the investment offer. Despite this, AngelCube believes that they have been able to attract sufficient quality applicants with these investment terms. They believe that the initial investment isn't the most important factor to applicants, but rather the value of additional connections and mentorship is more important. However, given that another Melbourne-based program is now offering \$50,000 investments for 7% equity, AngelCube may consider re-evaluating its investment terms.

AngelCube is in its fourth year, and has had no participant companies successfully exit yet. However, this is in line with the expectations of Adrian Stone and other AngelCube founders, who believe that accelerators can generate significant returns in the long term, but are not likely to in the very short term. On the other hand, AngelCube companies have had significant fundraising success, which may be a positive indication of the potential for larger future exits. AngelCube companies typically raise about \$250,000 within 6 months of finishing the program. Two AngelCube companies have already had fundraising rounds of more than \$1 million.

#### Summary of recommendations:

- Hold one program per year.
- Use existing tools like Angel List to streamline the application and selection process.
- Don't expect quick returns.

### Results of Accelerators around the World

Countries around the world that have supported technology accelerators are already reaping significant benefits.

**The United States** was home to the first technology accelerators with programs such as Y Combinator and Techstars. As they have the longest track record, these programs have the most mature financial results. Nine accelerators with graduating classes before 2009 and 266 identified graduates have generated the following results:

#### Realized gains/losses

- 21 percent of companies realized an exit and 25 percent went out of business
- Companies raised \$162 million in funding with \$831 million in exits with a 5.1x return multiple

#### Unrealized gains/losses

- 11 percent expected exits and 43 percent expected out of business
- \$1.1 billion in funding with \$13.4 billion in expected value with a **12.5x** expected return multiple



**Sweden** (population 9.5M) has a national network of 43 startup incubators, 12 seed investment funds and 33 science parks supported by the government and regional economic development agencies for the last twenty years. Unlike in the USA, in Sweden, the government is the major supporter of the technology accelerators. Some of the impressive results achieved by Sweden's government supported accelerators are as follows:

- Annually over 4500 business ideas are evaluated. These typically include 1/3 from academia, 1/3 from individual inventors, and 1/3 from established companies.
- 950 new high-growth technology companies are started per year.
- 150 of the companies participating in accelerators attract venture capital investment each year.
- The return on investment for tax payers is estimated at 8-10x annually.

The **Singapore** (population 5.3M) government has rolled out several initiatives under its SPRING enterprise development agency to enable startups to gain access to funding. These funding initiatives include cash grants, government-backed equity financing schemes, business incubator schemes, debt financing schemes, and tax incentives. Below are some of the results of the SPRING Singapore scheme:

- The Singapore Government has committed over A\$14 billion to the National Framework for Innovation and Enterprise including:
  - Technology Incubation Scheme – A network of 14 government, co-funded tech startup incubators
  - Early Stage Venture Fund – invests on a 1:1 matching basis to catalyse formation of venture capital funds that invest in Singapore-based technology companies
- Through the scheme, the Singapore government hopes to catalyse A\$550 million of angel investments over the next five years.
- The SPRING program supported over 193 innovative startups in 2012 alone, with over \$7M co-invested into 12 of these startups.

Singapore has emerged as a hub for first-time entrepreneurs and the city has witnessed the mushrooming of several startups over the past few years. Startups have increased from 27,000 in 2002 to more than 36,000 in 2009 in Singapore. These startups have employed more than 300,000 workers and are generating more than S\$166 billion in turnover.

**Chile** (population 17.5M) developed the Startup Chile program in 2010 to entice international entrepreneurs to start their businesses in Chile. The program provides companies with US\$40,000 of equity-free seed capital, and measures them by various indicators including participation in local events, presenting workshops on their particular expertise, raising local or international capital, and contracting talent. The results so far are impressive:

- More than 12,500 applicants since starting in 2010
- More than 750 new companies started
- More than \$ 94,M capital raised
- 1,269 jobs created as of 2013

## What makes this different?

### Specialisation in the Resources Industry

As discussed in detail above, specialisation enables an accelerator to provide much more focused advice, mentoring, and connections to participating companies, thus increasing the likelihood and speed of their success.

The resources sector in particular is one in great need of technological innovation. It is considerably less efficient and globally competitive than it was 10 years ago. The industry is aware of these challenges, and is actively seeking change. This means that the customers for the accelerators participating companies are eager to purchase innovative new products.

In addition, many companies in the resources industry have operations outside of those in WA. This provides considerable opportunities for expansion to the wider Australian market, and the world.

### At the Centre of the Resources Innovation Hub of the World

As discussed above, Perth holds a unique position in the resources industry. As home to the innovation centres of some of the world's largest mining companies, as well as top research institutions, Perth is the right environment in which to develop and integrate new technology for the sector.

### **Part of a Complete Ecosystem Plan**

Accelerators, like any business, must be concerned about the supply and demand for their product – in this case growth-ready startup technology companies.

Accelerators typically influence the supply of applicant companies by marketing their accelerator. They have a broad approach to reaching out to convince potential candidates to apply. Likewise, they attempt to cultivate demand for the products or companies graduating from the accelerator by marketing their demo days to potential investors or customers.

Accelerators will use these broad approaches as well, but it will differentiate itself by being a part of a complete plan for an ecosystem – one that attempts to create the supply of applicant companies and connect them directly to the demand for their products.

## **How will it deliver Innovation to Australia?**

### **Benefits to Participants**

In a study of the most important selection factors when startups are seeking an accelerator, Jed Christiansen discovered that immediate items such as the level of funding and the post-money valuation ranked significantly less important than those that provide lasting long-term benefit, such as product support, business support, and connections to capital.

This is very well aligned with what RIIT considers to be the unique advantage of the proposed accelerator – focussed connections to resources industry supply chain contacts for ongoing product development, business support, and access to growth capital. RIIT must therefore focus clearly on communicating the value of this advantage to prospective applicants.

The proposed accelerator also connects early stage startup companies to customers. This is of great value to enterprise startup companies, as the sales cycle can be long, and it can be difficult to get early adopters to purchase products. The accelerator de-risks the adoption of new technology for enterprises, and introduces potential customers to participants, thus reducing the time it takes startups to secure critical first sales.

### **Benefits to the Venture Capital Community**

A common refrain heard from those interested in making investments in early stage technology companies in Perth is that there is “not enough high-quality deal flow”. Investors don’t see enough startups with proven traction and large market opportunities. An accelerator will address this problem by producing a regular stream of de-risked investment opportunities. Startups will emerge from a rigorous and intensive program with solid products, well-structured companies, and connections to customers and partners.

### **Benefits to the Resources Industry**

Resources industry companies recognise the need to become more efficient and globally competitive.

*“We need to innovate and be encouraged to do so. As a nation, we can’t afford complacency. In the 2012 INSEAD innovation ranking Australia appeared 23rd on the overall table and fifth in our region. That’s simply not good enough.”*

*David Peever, Managing Director, Rio Tinto Australia; 18 September 2012; The Resources Boom: Prospects and Challenges A View from the Sector*

---

Analysis by Deloitte and others indicates that faster adoption of technology is one way that resource companies can improve their productivity.

*“An embrace of technology can help companies deliver productivity improvements and recover their long-term financial performance.”*

*Productivity, not Austerity, PwC mining productivity report; June 2013.*

---



One factor preventing resources companies from more quickly adopting new technology is the cost and challenge of integrating new products into existing systems. A significant part of the accelerator's rigorous program will be assisting startup companies to address this integration challenge. Resource industry mentors will help startups understand the existing technology environment so that they can reduce the barriers to integration of their products. The accelerator will also connect its participants to early adopters where technology integration can be tested and proven. This will reduce the risk, cost, and time of adopting new technologies by resources companies.

Another factor that makes it difficult for companies to adopt new technology is the risk that a new startup will fail and not being around to support their technology for the long term. Large companies typically want to adopt promising technology across many sites and plan a long operational life for new technology products. For this reason it is critical that companies have faith that their suppliers will be around to support their products for years. The accelerator reduces this risk by producing stronger startup companies, connecting them to early adopter companies who can field test their new technologies, and preparing the startups to receive significant funding which can ensure their longevity.

By reducing the risks and time associated with the adoption of new technologies, the accelerator will help resources companies to become more efficient and competitive.

### **Benefits to the Australian Economy**

The potential long term economic contribution stemming from accelerators is significant. Technology startups with the right support, networks, and funding have the potential to become a major source of growth in Australia. A recent PwC report suggests that technology startups can contribute up to 540,000 new jobs, fully 4% of Australian GDP by 2033.

Furthermore, technology startups tend to create jobs which are knowledge-based, requiring programming, design, and business skills. Over time, this can contribute to diversifying the economy away from resources dependent jobs, especially in locations such as WA and QLD.

Information products such as those created by technology startups are often easy to export. In fact, RIIT sees incredible opportunity for export growth for participating companies. After all, many of the large companies in the resources industry are global, with operations around the world. After successfully deploying new technologies in their Australian operations, they are likely to bring these technologies into their overseas operations.

*"Innovative industries bring good jobs and high salaries to communities where they cluster and their impact on the local economy is much deeper than their direct effect. Attracting a scientist or software engineer triggers a multiplier effect, increasing employment and salaries for those that provide local services. In essence, a high tech job is more than a job ... research shows for each high tech job, five additional jobs are created outside the high tech sector."*

*The New Geography of Jobs, Enrico Moretti, 2012*

---

## References and Bibliography

1. "Productivity in the Australian Mining Sector, Australian Government Bureau of Resources and Energy Economics (BREE) Discussion Paper Series" 13.01, March 2013
2. "The Startup Economy: How to support tech startups and accelerate Australian innovation", PwC, 2013
3. [Compass](#), Premature Scaling
4. "Copying Y Combinator", Jed D. Christiansen, 2009
5. [Seed-DB](#); list of seed accelerators
6. "[Origin Labs: A Startup Accelerator Business Plan](#)". Jeff Magnusson, 2010
7. "Productivity in the Australian Mining Sector", March 2013, Arif Syed, Quentin Grafton and Kaliappa Kalirajan; bree.gov.au.
8. "Perth as a Global Energy and Resource Hub", Committee for Perth and UWA, November 2012
9. "[Perth can be petroleum tech centre](#)", The West Australian, May 23, 2013
10. Conversation between Justin Strharsky and Adrian Stone, CEO of AngelCube; 8 June 2014
11. Meetings between Justin Strharsky, Luisa Maier, and Alex Farcet; Startupbootcamp Berlin, 10 and 11 July, 2014.
12. "The Lean Startup", Eric Ries, 2011
13. "[Crossroads Report](#)", StartupAUS
14. "The Startup Economy", PwC, April 2013
15. "[Proposal of policy amendments to the Enterprise Infrastructure Program to support the activity of technology venture accelerators](#)", Adrian Stone and Nathan Sampimon, June 18, 2014
16. "Opportunity at risk; Regaining our competitive edge in minerals resources", Port Jackson Partners, for Minerals Council of Australia, September, 2012
17. "[Do accelerators help startups?](#)", Shalin Sheth, Second Century Ventures, February 24, 2014
18. "[Swedish incubators and science parks](#)", Magnus Lundin, Polish Ministry of Economy, 2013.
19. Reserve Bank of Australia [Statement on Monetary Policy](#), November, 2013.
20. "[Economic reach of the Western Australian resources sector](#)", KPMG, July 2013
21. \$31 Trillion (estimated value of the 11 disruptive technologies according to McKinsey 2013) x 1.7% (Australian share of world GDP in 2012 according to Reserve Bank of Australia) x 19% (Resources sector share of Australian GDP according to March 13, 2012 Tim Colebatch SMH article) = ~ \$100 billion.
22. "[Our economic irrationalism](#)", Tim Colebatch, SMH, March 13, 2012.
23. "Disruptive Technologies: Advances That Will Transform Life, Business, and the Global Economy", McKinsey, 2013.
24. "[Western Australian Policy Platform 2013](#)", Association of Mining and Exploration Companies (AMEC), January 31, 2013.