

# Feedback on



From an initial review  
by the  
Membership &  
Leadership Group  
of

*Manufacturing ...*

*... on the Move* ➤



*January 2016*



## **1. Context and core issues**

- The overarching need is for an Australian Technology and Research & Development model that delivers an integrated approach.
- Model to unite not only the needs and aspirations of the venture capital community, but also visualised design and market-led research, advanced materials, process technologies and workforce development.
- A strategic plan that contains clear mechanisms for progressive measurement and progress evaluation.
- A large proportion of the initiative relates to things digital.

## **2. What exactly is Australia's digital strategy?**

- What is our collective vision on using the tools of the digital revolution to power a competitive economy in exposed international markets and transform our society?
- Because at the moment... nobody knows.
- 79% of manufacturing executives\*\* think digital disruption will impact their companies.  
[http://www.cisco.com/c/dam/en\\_us/solutions/industries/manufacturing/thought-leadership-wp.pdf](http://www.cisco.com/c/dam/en_us/solutions/industries/manufacturing/thought-leadership-wp.pdf)  
[\*\* Australia, Brazil, Canada, China, France, Germany, India, Italy, Japan, Mexico, South Korea, UK, USA]
- Related digital issue of Australia's plunging international relevance in matters Internet: now down to 44<sup>th</sup> in the global Broadband speed ratings.
- Risk that we will slide further and be outside the top 100 of high-performance broadband services by the time NBN rollout is completed.

## **3. Almost half the 'new measures' are in fact re-badged versions of existing programs**

- Majority of the actual funding is directed at higher education.
- Restores recent deep cuts to the CSIRO and assures long-term funding certainty to the ANFF.
- Removes the bizarre linkage of the entire future of Australia's most relevant manufacturing research centres to the passage of the University deregulation bill through the Senate.
- How are the existing components of Australia's Innovation System – the CRCs, The ARC Schemes and the new IGCs – to mesh in with the new and re-badged policies?
- How will these policies address the fact that our existing Innovation system both marginalises and disincentivises SME engagement in High Value Manufacturing?

#### 4. Increasing realisation that our current models for R&D collaboration are largely dysfunctional

- The basic issue is that you cannot force people and organisations to collaborate... they have to want to.
- Unfortunately the organisations in this country who could assist best the whole Innovation dialogue by improved collaboration ... our Universities ... do not want to.
- What is required is collaborative, end-to-end multi-discipline teaming in order to move beyond fragmented elements of disconnected, insular and highly competitive academic silos.

#### 5. How will the new policies improve qualified job prospects for Australians?

- Main question relates particularly to the highly trained products of our Universities, Technology Institutes and Colleges where our record is appalling.
- Less than 3% of our PhDs are employed by industry, compared to 30% in the UK. Our record with employing locally-trained, highly-skilled engineering technologists is little better.
- How will corporations recruit and motivate these creative people – and retain them – unless they are willing to give them bargaining power and change the current business paradigm of "cost reduction first"?
- Emphasis for cost reduction is almost entirely focused on the labour component – in truth, the laziest management approach when the real need is for a rapid depreciation schedule.
- Pressing need to incentivise generational replacement of almost our entire antiquated machine tool and manufacturing process capability.

#### 6. Talent and skills pipeline

- These same corporations [#5, above] are also faced with the new reality that they need highly-skilled workers to operate what will be very automated plants.
- According to the recent work skills environmental report manufacturing needs STEM skill trained people today at both university and VET levels
- This requirement will continue to grow as the baby boomers retire.
- But why should highly-skilled people pursue a career in manufacturing when they view it as a declining industry characterised by companies who do not hesitate to reduce wages, outsource jobs and close plants?

- These same corporations in Australia are also shown from industry surveys to be completely disengaged from the STEM (Science, Technology, Engineering, Mathematics) education initiatives – but at the same time are very critical of our current educational systems.

- Why should a young person invest in a STEM education to enter an industry that has lost tens of thousands of workers and hundreds of factories, including the core of our one-time automotive sector, since 2010?

- New workers want to work in an industry where there is job security, wages based on skills attained, good benefits, and the job is presented as a credible and appealing long-term career.



**Angus M Robinson**

Managing Partner, Leisure Solutions®

### **What Do You Think About the Government's National Innovation and Science Agenda?**

After just a few days of digestion and analysis, it is fair to say that the Government's announcement has been well received - offering an enthusiastic and positive message to the science R&D providers, the start-up community & investors, to the extent that many have suggested that the Government is restoring much of what was discarded in recent years.

In summary, the National Innovation & Science Agenda will focus on four key pillars of culture & capital, collaboration, talent & skills, and government as an exemplar.

But what does this agenda offer for those hi-tech, 'elaboratively transformed' SME 'advanced manufacturers' as defined by:

<https://www.linkedin.com/pulse/what-do-we-really-mean-term-advanced-manufacturing-angus-m-robinson?trk=mp-author-card>

and which represent the best hope of addressing Australia's burgeoning trade deficit? Let's examine a useful yardstick.

The former Advanced Manufacturing CRC (predecessor to the Innovative Manufacturing CRC) had proposed a very useful definition of innovation; i.e., 'The creation, development, protection and commercialisation of know-how, new products and/or processes that pre-empt the market by the application of scientific and technological skills.' The CRC had taken the view that this definition is important because it recognises that innovation is a formal process that can be carried out by an individual, a company or publicly funded research organisation, or any of these collaboratively, and that the driver of innovation has to start with how best Australia can create and manage intellectual property.

Yes, the Agenda Statement contains a basket of measures all aimed at capitalising on generating and commercialising new ideas, without being focused on how the IP generated could best be created/managed. Certainly, there is no focus on proposing how all of this commercialisation will convert to industrialisation i.e. the creation of new industries.

However, the Government will no doubt argue, if challenged, that its current policy framework, the 'growth centre' model for advanced manufacturing:

<https://www.linkedin.com/pulse/advanced-manufacturing-growth-centre-model-angus-m-robinson?trk=mp-author-card>

with its 5 key elements (as spelt out herewith) addresses this need, complementing the 'front end' Innovation & Science Agenda.

1. An industry led emphasis on engaged enterprises.
2. A focus on engaging Australian companies with global supply chains/markets.
3. Engagement/collaboration on projects/ programmes.
4. By achieving all Growth Centre objectives by bridging the commercialisation 'valley of death'.
5. Public: Private funding giving way to Private: Public funding over 4 years to enable sustainability.

There is no doubt that the Agenda offers existing manufacturers some opportunities for enhanced collaboration with public research providers both local and overseas, and ICT companies will gain better access to government procurement opportunities, but arguably not much else. Moreover, in stimulating 'start-ups', there is no recognition of the need to focus on 'hardware start-ups' which offer a much higher opportunity to generate local hi-tech manufacturing.

Surprisingly for a government so focused on outcomes, there are no KPIs offered, e.g.

**For Innovators:**





1. SMEs introducing product or process innovations as % of SMEs.
2. SMEs introducing marketing or organisational innovations as % of SMEs.
3. High-growth innovative firms.

**For economic effects:**

1. Employment in knowledge-intensive activities (manufacturing & services) as % of total employment.
2. Medium/ high-tech product exports as % total product exports.
3. Knowledge-intensive services exports as % total service exports.
4. Sales of new to market /new to firm innovations as % of turnover.
5. License/patent revenues from abroad as % of GDP.

Your comments are welcome and will be compiled into a submission by **MotM** to the Government.

## National Innovation and Science Agenda - *MotM* membership feedback

#	<i>MotM</i> Member	Commentary
1		<p>Greg Chalik</p> <p>Why is the National Innovation and Science Agenda is an agenda? Why not a Strategy or a Policy?</p>
2		<p>Angus M Robinson</p> <p>It would seem that departmental officials like to use term 'agenda', but curiously it hasn't been labelled an 'Action Agenda' - a favourite of Coalition Governments of the past for programmes which require industry leadership</p>
3		<p>Barry Hendy</p> <p>There is a proven, powerful and effective system to provide incentive for inventions to be commercialised in the country of origin called the "Patent box". e.g. <a href="http://www.manmonthly.com.au/features/taking-aim-does-australia-need-a-patent-box-style">http://www.manmonthly.com.au/features/taking-aim-does-australia-need-a-patent-box-style</a></p> <p>This seems like a powerful strategy that should be advocated to provide incentive and reward for Australian inventions to be commercialised here, which I think is at the heart of a lot of the Agenda</p>
4		<p>Roger La Salle</p> <p>Some time ago I wrote the following, I also sent a copy to the Government. They showed no interest at all?</p> <p>See it at <a href="http://www.innovationtraining.com.au/matrix-thinking-blogs.html">http://www.innovationtraining.com.au/matrix-thinking-blogs.html</a></p>

5



Angus M Robinson

Roger, well put. I too am amazed by economists and politicians who believe that wealth is simply created by circulating money in a domestic economy. If you have not already read it, may I recommend the following texts for study:

[1] <http://www.amazon.com/Praise-Hard-Industries-Manufacturing-Information/dp/0395899680>

[2] <http://www.manmonthly.com.au/features/industry-policy-industrialisation-imperatives>

6



Roger La Salle

Indeed, the only way to create wealth is to create something. You can make it, dig it up, grow it, write music, books, poetry, import students for education or bring in money with inbound tourism. Apart from that all other money's are simply the circulation of the money from the wealth creators. I like to use the transport sector as an example. They don't create wealth, indeed if somebody did not first make something there would be no transport sector - except for public transport, and that too doesn't create wealth. I would love to hear an economists view of the world on this notion - apart from those quoted in my article who in my view clearly don't understand.

7



Jon Bradshaw

The PM has clearly articulated that he recognises a number of the issues and problems that plague our current innovation system. That is a plus. However just talking about these already known issues and poor metrics associated with SME collaboration without outlining a clear pathway going forward...together with how this progress might be regularly measured is unfortunately hardly strategic.

The Innovation system remains heavily University centric and this is a major concern to industry. Our Unis are highly competitive and there does not seem to be any mechanism in all this to encourage them to be more collaborative.. both externally and internally on the same campus.

Another observation is around how this additional layer of bureaucracy is going to mesh with the IGCs CRCs and the ARC schemes. Associated with this is the perception that Quantum Computing , Medi tech etc. are now apparently selected as de-facto IGC type industry verticals but under a different umbrella

8



Angus M  
Robinson

Jon, you raise some very relevant points. May I elaborate.

Referring to the details of the Agenda located at <http://www.innovation.gov.au/page/agenda>

1. Strategic coordination

<http://www.innovation.gov.au/system/files/case-study/Factsheet%2025%20-%20Innovation%20and%20Science%20Australia.pdf>

Whilst, the move to create a high level coordinating agency 'Innovation Science Australia' is welcome - it represents a 'beefed up' PMSEIC of the past, the various Growth Centre boards are also empowered to 'pull the levers' and define industry priorities - all very confusing!

2. Growth Centres - not forgetting as well the announced Cyber Security facility

[http://www.innovation.gov.au/system/files/case-study/Factsheet%2013%20-%20Establishing%20an%20industry-led%20Cyber%20Security%20Growth%20Centre\\_0.pdf](http://www.innovation.gov.au/system/files/case-study/Factsheet%2013%20-%20Establishing%20an%20industry-led%20Cyber%20Security%20Growth%20Centre_0.pdf)

Are the Industry Growth Centres morphing into 'engines of growth' for new industry development or a 'grab bag' of 'industry capability hubs' and/or selected R&D centres?

9



Angus M  
Robinson

It is surprising as well to note that the Agenda fails to identify key elements of ICT infrastructure e.g. the NBN, the SKA network, high performance computing and communications as a major underpinning structural element!



10



Jon Bradshaw

I certainly agree Angus that broadband speed is a critical part of the infrastructural underpinning going forward; particularly as is being predicted .. that by the completion of the current rollout in circa 2020 Australia will be lucky to be in the top 100 countries in broadband speed or even within an accurate definition of what BB is..

The short-sightedness of the re investment in the legacy copper network will be painfully obvious once we start to contemplate the so called 'super fast broadband'

11



Angus M Robinson

Some excellent commentary from Richard dale's posting elsewhere on LinkedIn

<https://www.linkedin.com/pulse/most-powerful-point-innovation-statement-richard-dale?trk=hp-feed-article-title-publish>

12



Jon Bradshaw

I am also intrigued by the linkage between government procurement policy and innovation... There has never been any shortage of innovation shown by Australian manufacturers in their attempts to demonstrate value and whole of life real costs over the governments preoccupation to this point with buying on the basis of first and cheapest price..

We could start with Defence purchases where Australian SME s share a mindbogglingly paltry 2% of the mega million defence procurement budget.

13



Angus M  
Robinson

After many years of lobbying by the ICT industry, a move towards opening up Australian SME access to government procurement for ICT services and products is a positive step forward. I recall some years ago when the South Korean Government signalled a strategic intention to service global software markets and decided tactically that this strategy would be enhanced by South Korean software companies being given preferred access to government procurement. Even the US adopts this same approach through the implementation of its Buy American legislation which ensures that only US companies can provide manufacturing equipment to its transportation infrastructure (road, highway and the like) - the Americans can get around the WHO free trade requirements, so why can't we? So when politicians trumpet their support for 'big ideas' to provide growth and jobs for Australians, it is about time that they followed through with tactical measures to match the rhetoric!

14



Jon Bradshaw

... and in fact the UK government have policies and KPIs towards a 20% minimum of all procurement contracts to be supplied by UK SMEs.

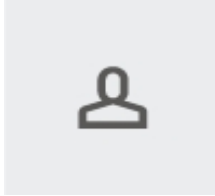
15



Jon Bradshaw

The PM also acknowledges the poor take up of PhDs by industry .. the comparative metrics are that only 3% of Australian PhDs are employed in industry compared to ten times this in the UK. One of the main vehicles we have to improve this are the ARC training grants scheme but on these results it is pretty obvious that the model in its current form is not working for SME. ...it is in fact very hard for SMEs to engage with the model for a number of reasons

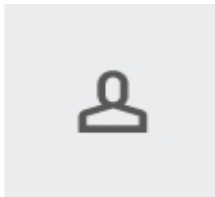
16



Peter Davies

Voting with our feet might best describe our response. Our company is taking a seven week "break" to refocus resources off shore which includes developing manufacturing partnerships already on offer. We will still have a presence here but it will be limited. The problems we have faced go beyond marginal policy settings but to the often unwritten practices denying market access by which we were damaged again last week by a public servant in their (knowingly) incorrect advice to prospective clients without any opportunity for response. The rationale for the advice ultimately revealed as being to protect existing investment decisions from unforeseen competitive risk. I.e. a counter innovative policy being enabled through government support for Competitive Advantage over Comparable Advantage. Thus the innovation developed here is driven offshore, you don't need to be a speed reader to see the same pervasive practice resulting from the current Innovation Initiative rhetoric.

17



Peter Davies

<http://us11.campaign-archive2.com/?u=a8b0363fccd42302832cee15f&id=9b5713bce1&e=1b5e51806c>

an example of a portion of the opportunities being lost through narrow focus.

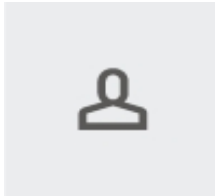
18



Angus M Robinson

Peter, oh so true - add medical bionics to this mix and it represents a huge market opportunity. Looking at this another way, even if Australia targeted only 2% of global markets (2% represents our share of global R&D spend), a presence in the biomaterials sector alone could earn the country some US\$3 billion per annum in export revenue. But, as you know, you can't dare pick winners (or dare I say investment opportunities) in this country for fear of ridicule!

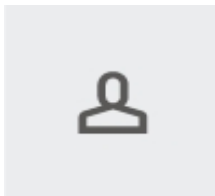
19



Peter Davies

Yes Angus, yet much of the problem appears to be because they have already picked "their" winners... When I was involved in policy development I always insisted on "Flexibility" as part of the strategy, anything which came in which met the intent but had not been predicted got equal review on merit, if there is a "Strategy Door" you might call this an "innovation window". I support direct funding of science research via a mix of both weighted and unweighted components. When it comes to Innovation Initiative's all strategies must be on the table, support for pure research, support for commercialisation of outcomes of such research (under open auction to private sector with pre approved funding support), collaboration pathways and last but by no means least a fee for service research facility access (also with public funding support). If the Government wants to brand something then it should be about branding success, a bet each way is entirely in keeping with Aussie culture.

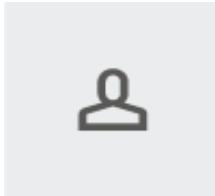
20



Peter Davies

A final comment on access by SME's to research skills/facilities on fee for service or some other basis. Such change actually can drive growth in the university sector, and provide hard data supporting additional funding. I am surprised that they haven't recognised the benefits of this.

21



Peter Davies

Nerve twitch in mouse hand... "provide hard data supporting " should have included "feedback into other research areas" before "...supporting additional funding

22

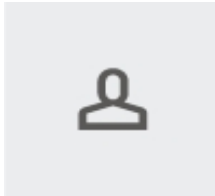


Angus M Robinson

Some useful commentary from the Business Insider worth reviewing

<http://www.businessinsider.com.au/matt-barrie-innovation-nation-response-2015-12>

23



Peter Davies

Yes interesting review. I have no doubt Malcolm Turnbull gets it, even back in 2009 walking with my wife Kerry and myself near our gasifier demonstrator on the lawns of Parliament House he asked "So what is it like to be married to a genius?" To which I immediately responded "There are moments when it is very difficult but overall I cope" He stopped, burst out laughing and told his offsider to make a note something to the effect of "these two need to be watched carefully". The core issue right now for us is that in the real world decisions have to be made now, whereas effective change is more than one electoral cycle away. Opportunities lost.

24



Greg Chalik

I didn't actually finish reading Matt Barrie's article.  
Had Matt Barrie ever invented anything?

Peter, I'm still reading the NISA, but it should be borne in mind that words have meanings, and agenda setting is "the politics of selecting issues for active consideration". The 28 points in the NISA are BEING CONSIDERED, and the \$1.5 billion allocated to NISA is NOT a funded Strategy (or it would have been called that) , but the potential for one.

As David Dery (Policy Studies, vol 21, #1, 2000) points out, agenda setting, is "the result of a society acting through political and social institutions to define the meanings of problems and the range of acceptable solutions."

So, what is the problem that was defined by NISA?

25



Greg Chalik

Innovation (the solution?) "keeps us competitive, at the cutting edge, creates jobs and maintains our high standard of living", and "not just about new ideas, products and business models; innovation is also about creating a culture where we embrace risk, move quickly to back good ideas and learn from mistakes."

If "Problem definition has to do with what we choose to identify as public issues and how we think and talk about these concerns", then NISA problems are the obverse of the above, that Australians are: uncompetitive, lag behind in technology, lose jobs to global competitors, lack new ideas, product and business models, lack the will to make risky decisions, are slow to adopt good ideas, and don't learn from mistakes.

From my perspective of looking at Defence, number three on the four Economy sectors actually listed in the Agenda, the above problem definition very neatly describes the ADF.

26



Greg Chalik

However, these are NOT defining the problem of creating an Australian economic mindset predisposed towards the integration of innovative culture...because we already have one as good as any other leading developed EU or North American country.

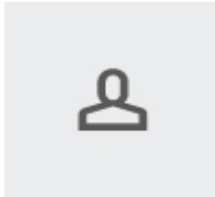
The problem is how to IDENTIFY the individuals that are capable of innovation.

Within this problem is a further problem of how to CONSISTENTLY get identified innovative individuals to DELIVER them to the market with the benefit to Australian Economy.

And, within the previous problem, there is the problem of how to teach innovative individuals to produce innovations more RAPIDLY and EFFICIENTLY, that also have greater market impact for Australian manufacturers.

What I'm trying to understand now is how the NISA 28-point Agenda envisages this happening.

27

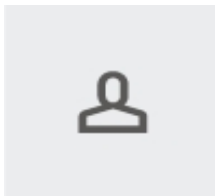


Peter Davies

Yes I agree Greg Chalik, the PM also constantly refers to his government as "agile" which I take to mean capable of rapid change of policy if required, indeed he spelt this out in one of the interviews, something not working? Then they will try something else. All good. However if there are any innovators in the advisory teams being used they are not evident, yet.

If you start with incorrect assumptions don't expect your solutions to create the change you want. To me this is evident in the NISA because it defines a solution first, before understanding the cause or even extent of the problem. There is no shortage of innovation in Australia, some even occurs in Universities. Often it is in the application of a technology as opposed to its invention, wifi being the poster child example. This does require unique individuals, and every one I have met has been cross-discipline, or part of a cross-disciplinary team.

28



Peter Davies

The barriers to innovation commercialization in Australia is reasonable availability of Capital, Market Access and Research Support. You need to understand the true nature of these are barriers before you create policies to address them. I can see many aspects of NISA as currently written reinforcing rather than reducing them.

For ourselves we are now seven years into our development cycle, and to be perfectly honest some of the innovations that make our tech suitable for mass production whilst retaining best of class performance and low cost would not have happened in an environment of copious funds (take note those that think throwing money at innovation as an outcome is the answer). Now though we have a product, lean capital provides no benefits. If we stay in Australia it will take another seven years to transform Comparative advantage to spectacular commercial success through organic growth, assuming we can overcome the market access denial practiced by incumbents.

29



Michael W  
McLean

Worth reading the recent Top Manufacturing Countries listing in this discussion and how government and Industry, Education worked together:

[http://www.industryweek.com/competitiveness/top-10-manufacturing-countries-2020#slide-0-field\\_images-192471?NL=IW-07&sfvc4enews=42&cl=article\\_6\\_b&utm\\_rid=CPG03000001434159&utm\\_campaign=8890&utm\\_medium=email&elq2=5170ba1c58054af0863e3a2a703af522](http://www.industryweek.com/competitiveness/top-10-manufacturing-countries-2020#slide-0-field_images-192471?NL=IW-07&sfvc4enews=42&cl=article_6_b&utm_rid=CPG03000001434159&utm_campaign=8890&utm_medium=email&elq2=5170ba1c58054af0863e3a2a703af522)

30



Greg Chalik

Peter, in terms of 'agility', I had pre-empted the NISA announcement with an email to the PM on 17 September, and got nowhere. The email was not forwarded to his advisors, and I'm still at 'square 1'. The ministerial support teams are not agile. For example I was told by the gatekeeper at Christopher Pyne's office that "we have an office procedure". At Marise Payne's office, although I pointed out that she is charged with executing a department -wide counter-NISA policy, there has been no 'agile' response.

Money is 'bad' for innovation. The first challenge of innovation is to be affordable, which means the innovator/s need to be suitably under pressure to be challenged to produce something more cost-effective. Americans commonly throw money on projects that fail to deliver.

31



Angus M  
Robinson

Peter and Greg, as my mentor Professor Trevor Cole (Warren Centre) used to point out that, there is too much science in Australia and too little focus on technology and engineering!



32



Greg Chalik

Michael, what data was used to produce the Industry Week's "Top 10 Manufacturing Countries" listing?

One of the problems of NISA, and indeed the Minister for Industry, Innovation and Science, is that there currently isn't an objective metric to measure innovation used by the Australian Bureau of Statistics to produce any indication of economic impact on the Economy. What ABS measures here <http://www.abs.gov.au/ausstats/abs@.nsf/mf/8158.0> is not innovation, but mostly iteration. This is because the Oslo Manual (p.46) defines "The minimum requirement for an innovation ... the product, process, marketing method or organisational method [that] must be new (or significantly improved) to the firm. This includes products, processes and methods that firms are the first to develop and those that have been adopted from other firms or organisations."

This excludes non-commercial entities ('tinkerers') and is entirely subjective in reporting.

33

Angus M  
Robinson

Some relevant commentary from Ross Gittins <http://www.smh.com.au/business/the-economy/how-governments-can-encourage-innovation-20151210-gll304.html>

34

Angus M  
Robinson

Just in case the SMH is not on your reading list, this overview article is also worth reading <http://www.smh.com.au/federal-politics/political-news/government-aims-to-kickstart-innovation-20151210-glkgw>

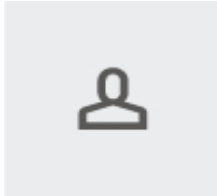
35



Bruce Kendall

"....governments preoccupation to this point with buying on the basis of first and cheapest price.." Well put Jon. In Victoria we have a public transport ticketing system called Myki. It's a lemon and more so when one considers better and proven alternatives were tendered such as Oyster. As a regular user of Singapore's SMRT ticketing system extant on its public transport system from years, I regularly lament how that country got it right and wonder how Victoria could get it so wrong. I was working for the Vic Gov at the time. It was a price driven outcome with all the hallmarks of poor project risk assessment and management. If Australian governments wish to drive innovation and reduce lifecycle costs then public servants ought to be better skilled in tender evaluation. Government expenditure should be used to drive innovation and early adoption of products that otherwise are not cost effective in their early stages

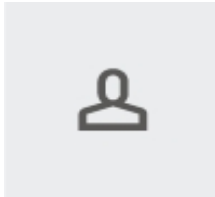
36



Peter Davies

Greg Chalik on Gatekeepers... I wrote to our local member asking how could a small SME access Defense procurement, outlining our technology and providing a list of possible benefits. I got no response. 3 months later a closed tender was issued to one of our corporate competitors to come up with a portable gasification system with a remarkably similar list of benefits and a budget that would have allowed us to install a dozen reference plants, they subsequently failed announcing it was not possible, despite our very public demonstrations. Nearly 18 months later we were onsite running a more advanced version at a forum at Queanbeyan Showground with the unit flaring clean gas less than 10 meters from the open door of the hall where the participants (mostly policy makers) were having their lunch. Our local MP turned up and was amazed, he didn't know we even existed despite the letter above and others inviting him to our facilities which were 25min from his main electorate office.

38



Peter Davies

<http://www.abc.net.au/news/2015-12-12/innovation-hub-launched-to-back-farmer-entrepreneurs/7010490>

Note again examples of Aussies needing to go offshore. A good move by NFF though seemingly limited in scope to "digital". I wrote a TV ad campaign for NFF back in the early 90's, it was never aired, rather it was taken straight into the Federal Agriculture's Ministers office resulting in the sudden release of millions in support programs. The theme was simple enough: "Coming to your area looking for jobs and businesses, self starting, self sacrificing, loyal, hard working and motivated multi skilled workers and managers... Or you can tell your MP to help keep farmers on the land instead..."

39



Angus M  
Robinson

Behind every successful man is a successful woman, and recognising why the German economy is so strong

<https://www.thesaturdaypaper.com.au/news/economy/2015/12/12/lucy-turnbulls-innovation-push/14498388002739>

40



Greg Chalik

I'm fairly certain I can prove that, with all due respect, Dr Clark in the Knott and McColl article is wrong when he says "The fundamental issue is that we are just not patenting. Australians are interested in all forms of property except the intellectual kind."

In actual fact Australians are patenting as much, perhaps more, than the average European or American.

Our problem is that as much as 15-25% of these patents are going overseas, and these are the more risky, and therefore potentially more profitable patents. To put it very simply, the 'cream' of the 'crop' is going North.

Also, why hadn't anyone asked the question why there isn't an "innovation culture" in the Australian academia now? One would think that all the academics who were defunded would network like mad to raise funding for all the brilliant ideas they have been sitting on so they could retire to Gold Coast before their Government pension kicks in.

41



Angus M Robinson

A very interesting analysis on Australia's Innovation problem from Professor Roy Green

<https://theconversation.com/australias-innovation-problem-explained-in-10-charts-51898>

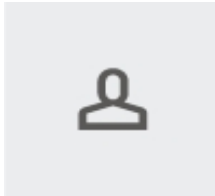
42



Angus M Robinson

Reflecting on the Paris outcomes, and almost one week on from the Government's Innovation and Science Agenda announcement, one can only come to the conclusion that the Turnbull Government, espousing innovation at its core and ostensibly intent on creating new jobs for Australians, will be remembered for delivering an Agenda that overlooked the one big elephant in the room - the new energy revolution! Intensified interest in quantum computing and synchrotrons at the expense of responding quickly (i.e. being 'agile') to market-driven opportunities is symptomatic of a nation still obsessed with a technology push mentality!

43



Peter Davies

Yes Angus, yet demonstrated again with our own story "you can't be a prophet in your own land". It saddens me greatly that history will show the folly of Australian government decision making in this area & the critical years lost through the Abbott Aberration. Now a technology that could have had a huge impact on manufacturing in this country is going offshore because of a lack of access to sensible capital here, a technology that is in the right place at the right time, designed for mass fabrication and rapid deployment. What's worse is it works with coal as well, & with only a little "collaborative" development would allow transition from "burning" into more appropriate conversion & use whilst still meeting climate goals, but more importantly is far more than a "energy" tech, but an enabling one with unique additionalities. I won't harp further beyond saying they know not yet just what they have lost, but the folly of their decisions will become apparent of their own accord.

44



Bruce Grey

Angus, The new initiatives in the Government's National Innovation and Science Agenda are to be welcomed, however I still believe as a country we spend too little on supporting innovation. We are currently about half the level of Germany as a percentage of GDP. Furthermore are we spending it in the right areas? Who knows because we do not measure the effect precisely.

On December 2 the Department of Industry, Innovation and Science released the Australian Industry Report under the headline "Industry report sets out ingredients for growing the economy".

Increased industry-driven R&D was one of those ingredients.

However what the report does show is that manufacturing continues to shrink in terms of investment and employment. However manufacturing's contribution to exports is growing albeit slowly.

A vibrant manufacturing sector is vital for growing productivity. Perhaps this is why Australia's productivity as a percentage of US productivity is in decline?

45



Jon Bradshaw

Hmm Peter.. not sure that Mr Abbott (or Donald Trump for that matter ) can really be written off as 'aberrations'. Just the end products of deliberate political strategy. Unfortunately Australian governments of all flavours have a sorry record of poor strategic process and ideology driven decision making

46



Mark Watson  
MDIA

#Looking for Design in the #Ideas boom I checked the content of the release in Wordle and I cannot see it. Sorry Roy Green but the Scientists see the pie as all theirs. <https://t.co/BguTnbvALW>

47



Angus M  
Robinson

Page 110 of the Industry report states "Chart 2.26 reveals trends in Australia's Manufacturing output, employment and trade flows since the late 1960s. Import growth has been steady and generally faster than export growth during this period. Moreover, exports appear to have stagnated since 2001. As such, the Manufacturing trade deficit (the gap between Manufacturing imports and exports) has been widening. This trend raises concerns that Australian manufacturers have been unable to increase their global presence over the past decade while chronically losing domestic market share to international competitors. These developments go some way to explaining the long-run decline in Manufacturing employment."

If there has been some recent upturn in manufacturing exports, do we know in what sector, particularly in the critical medium and high tech "equipment manufacturing" sector?

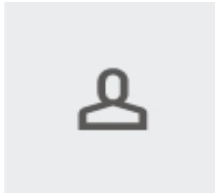
48



Jon Bradshaw

Interestingly 'Stakeholder' briefings are being rolled out around Australia in coming weeks, in relation to the Federal Government's new National Innovation and Science Agenda . These briefings will offer business and other interested parties the chance to hear first-hand what the Agenda is all about, and the opportunities it provides.

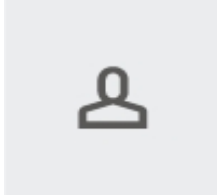
49



Ahmed Abbas

"...innovation has to start with how best Australia can create and manage intellectual property." << Sure, though there are many loopholes in IP protection and that's the elephant in the room.

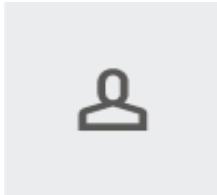
50



Peter Davies

Jon, I have been courted by both major political camps over the years, my wife is of the belief that if we would pick one (doesn't matter which) the barriers would be lower or disappear altogether. I stubbornly retain my position we shouldn't have to, though perversely this seems to lead us away from home to get ahead. The political strategy you point out will either end up a historical footnote or I suspect there ultimately there will be no history to record. Though I agree it shouldn't be written off as it is not done yet and can't be placed at the foot of one individual, for which in naming I was wrong.

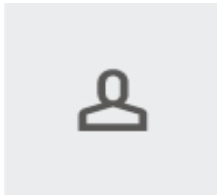
51



Peter Davies

Ahmed Abbas you are spot on, the metric of counting patents does not take into account they do little for SME's unless they can afford to defend, and often are the greatest source of IP leakage.

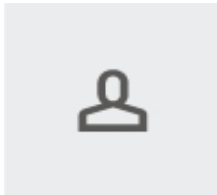
52



Ahmed Abbas

Exactly Peter Davies - Been there. Converting intellectual capital on the assumption that external market forces are not ready to undermine will become a feeding exercise rather than a building exercise.

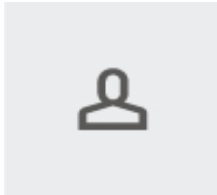
53



Peter Davies

Yes, talking to other innovators and small businesses elicit the same stories, but then the people who actually invent things aren't normally asked what they need by policy makers...

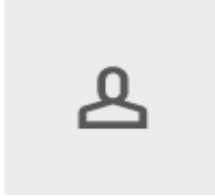
54



Ahmed Abbas

Let's wait and see, I have a feeling this issue is going to be the key issue and would be addressed (not withstanding the recent trans pacific partnership agreement)...

55



Peter Davies

<http://www.abc.net.au/news/2015-12-13/australian-dairy-and-wine-brands-targeted-by-trademark-squatters/7022714> provides another example where Government can assist if FTA's are to have meaning.

56



Tracy Scott-Rimington

Mobilising clusters would provide the front end grunt, meshing and conversion for industrial outcomes. Refer recent TCI COMMUNIQUE: "Innovative Collaborations shouldn't take a fire to get started" <http://www.vision6.com.au/em/mail/view.php?id=1020323&a=55835&k=2ed1196>

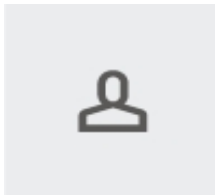
57



Roger La Salle

see my post on Paris - who's paying at <http://www.innovationtraining.com.au/matrix-thinking-blogs.html>

58



Peter Davies

Roger La Salle I found it an interesting perspective though I didn't agree with much of the premise, but I do agree with your conclusion. Most of the industrialized countries are already reducing subsidies for renewables, except for special circumstances. These announcements took place in the weeks leading up to Paris. Yet what I didn't see on any of the politicians present was surprise at the summit outcome. Why? Because if enough countries sign the accord you can replace subsidies with regulation and restore budgets with the same stone. Thus to answer your question User Pays. Pressure from this will drive innovation in direct, indirect but pervasive ways thereby forcing change, regeneration, new investment, profit and jobs.



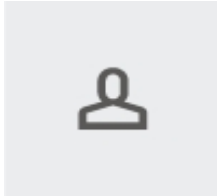
59



Roger La Salle

Hi Peter, maybe the reduction in gov subsidies is because they have realised it's presently not a viable industry. As I was saying, why on the back of Paris are past defunct manufacturers now salivating with joy, the answer, because they will get gov subsidies. If subsidies were not needed, why were many of these industries rather dormant? This is the question I pose? Finally, are regulations simply not mandated subsidies, i.e., you will use renewables at any cost, a cost that is of course passed on to consumers.

60



Peter Davies

Hi Roger, no the reduction is because they are not needed, development levels having lowered production costs close to parity with coal. Our own has been at parity for some time, and indeed can interchange feed stocks with it, such considerations are not the barrier. Also not sure about the defunct label, perhaps we are seeing manufacturing agility? As for salivating (which I have only seen from policy observers, not industry) the coal industry has also breathed a sigh of relief, why? Because the accord allows for them innovating as well.

61



Angus M Robinson

Stakeholder Briefing details can be obtained at <http://www.innovation.gov.au/page/stakeholder-briefings>

62



Roger La Salle

Hi Peter, If it's already self funding why does it need government support? Turnbull is putting more money into renewables and wind. We see the wind farm manufacturers already looking to hire staff. Why didn't they do that before this announcement? The reason, it was not profitable or sustainable without money from the Government - meaning us? Julie Bishop was overjoyed at the new jobs this would create - our taxes at work! Subsidized jobs!

63



Roger La Salle

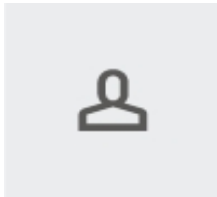
Looking at renewable to fill the void of power, consider the following.

There are 8 billion mobile phones in the world each requiring typically one Watt hour or power each night to charge them. On my calculations 26 of the largest solar power station in the world, the Gemma Solar in Spain at a cost of \$250M and spanning 240 hectares, would be required just to charge phones. With wind, assuming the wind is blowing, this would be about 140 of the largest 2MWatt wind turbines. Just to charge phones.

Have you looked at car brake lights?

In a big city like Istanbul there are approx 300MWatt hours of power used DAILY just on brake lights. Extrapolate that to the world and you will get some idea of the void we are trying to fill with renewables.

64



Peter Davies

Hi again Roger, I am sorry I thought the point of your article was not about renewables (as you stated) but the need for more innovation? You make a layman's point on self funding, & as a layman who has experienced first hand the effect of "competitive advantage" on "free" markets I can inform you that at least part of the reason is the practice of "market denial" by incumbents. This is done in a variety of ways some subtle & some blunt. We have had Gentailers reduce pricing for business users from 28c/kWh to 5c/kWh when faced with the prospect of a renewable alternative, who knew they had that much flexibility in the face of genuine competition? As for the current governments partial reversal of its own earlier bad decision to halt risk sharing that stalled a few billion in investment in train for projects already approved causing the shedding of hundreds of jobs as overseas investors measured the sovereign risk I can only applaud the courage & common sense required for such agility



Peter Davies

I would repeat again that the one of the most interesting and pleasing aspects of the Paris Accord is that it is not technology specific. The target is green house gas reduction. As such the energy mix by 2050 is as likely to include thorium reactors and other innovative nuclear as it is wind, solar, enhanced coal or something not yet considered. Such flexibility is an innovation driver. Subsidies can be useful, but misapplied they stifle innovation. Regulatory measures in isolation likewise can result in reducing global competitiveness. I recall a prime example being our own steel industry, in the early 2000's I participated in trials with charcoal from plantations. These produced under our protocols showed a 40% reduction in steel making costs and a superior product outcome. Senior management subsequently elected to pursue a \$500m public subsidy to protect itself from change instead. Today this company continues to downsize as it lacks comparable advantage over its peers.

65



Peter Davies

Roger, perhaps you should look at [http://www.huskpowersystems.com/innerpagedata.php?pageT=Business%20Model&page\\_id=77&pagesub\\_id=114](http://www.huskpowersystems.com/innerpagedata.php?pageT=Business%20Model&page_id=77&pagesub_id=114) as an example of how innovation (in business model as much as technology) is addressing the "power void" issue for mobile phones. There are others involving wind & solar though these don't have the other positive additionalities of bioenergy. they still address the energy component. Distributed power solutions will play key roles. I understand large Asian investors backed by their governments are also planning a grid interconnect with the Australian mainland to put in solar farms covering thousands of hectares in the desert areas of this fair land. Loved your brake light example good "out of the box" thinking to identify potential markets requiring innovative solutions.

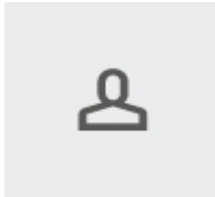
66



Ahmed Abbas

Humbled... (side note) This tails on a side point that we need more STEM's in business leadership roles. Existing technical people into leadership + (for future) the education aspect of the innovation agenda needs to unify STEM degrees with business degrees (or vise a versa depending on how you want to look at it).

67



Peter Davies

Which brings us back to the post topic, is anyone now surprised at the initiative released so close prior to the Paris Summit? Now if only they would get the detail right...

68

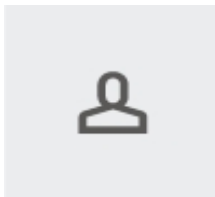


Jon Bradshaw

.. and with virtually no publicity the first Stakeholder' briefings were rolled out this week.. A few tickets left in Canberra for the 21st if you are around as all are leaving. It was reported that about 100 turned up to the Sydney briefing .. mostly recent graduates , researchers and academics, industry consultants.

Not much more passed on than has already been indicated in the press releases and the PMs address.... some perception that more work needed to be done on the details ,, Interestingly it appears that about half of the 28 initiatives covered by the new policy are in fact rebadged versions of currently existing programs.

69



Peter Davies

Good ideas let down in the execution. Since it is moot for our business it is all academic anyway, pun intended.

70



Greg Turnidge

Angus, thanks for the neat summary of the Innovation Statement. Personally I find the Government's approach quite refreshing, even if I don't totally agree in how they have set their plan out. While it contains some new (small) initiatives, a large part of it is a repackaging of existing policy initiatives. Having said that, this should be treated as a fundamental change of direction for the economy, a shift in focus that I personally have long awaited - at least in terms of the words used! It shows some real leadership on the innovation front and sets the tone for some cultural shift in the way Australia thinks about its economic future.

71



Greg Turnidge

It is important that there be some follow up with government on specific matters that flow from this Statement. From my personal perspective the debate on economic reform policy has to be founded on a fundamental economic development framework, such as the Innovation Statement. But this should not be seen in isolation as all it will do is get lost in the fierce debate about labour market and tax reform. I have recently written about this and for anyone who is interested it can be found at <https://www.gotooptimal.com.au/in-the-long-term/>

Any feedback is most welcome

72



Greg Turnidge

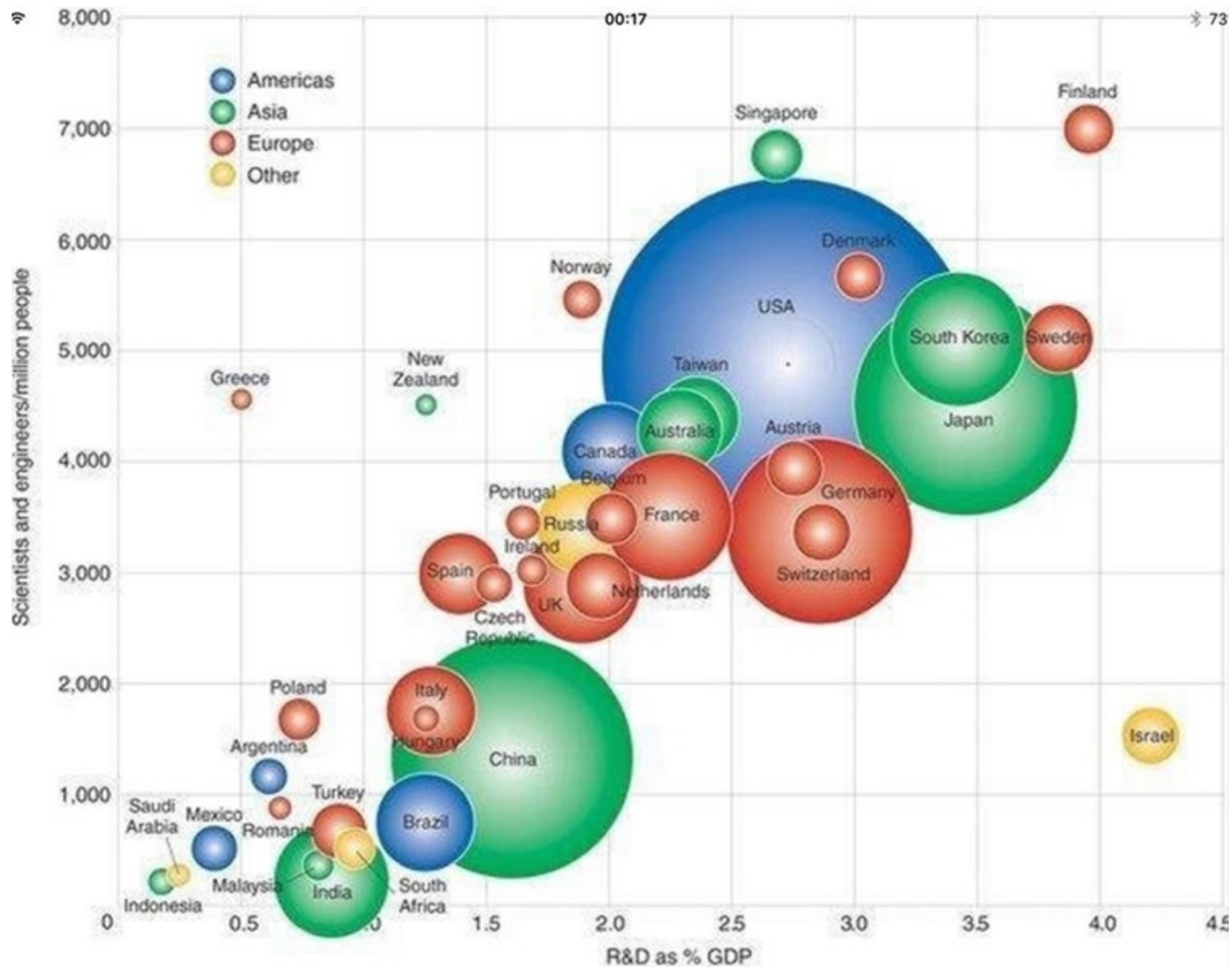
A culture for innovation?

Joe Stiglitz has explained why countries like Australia are poor risk takers. He argues that countries who face market volatility such as those that arise from commodity prices tend to adopt less risky business practices more generally, preferring to invest in lower risk and lower return activities. This is particularly important if that volatility is driven from outside the country, and is more significant in its impact in smaller economies than larger ones. Sound familiar?

[www.ooo.com](http://www.ooo.com)

Links to external sites and additional material

## Innovation and Science: International Benchmarking for Drivers & Resourcing



## About *Manufacturing on the Move*

The new 'Manufacturing on the Move' (**MotM**) professional networking group, launched 2015 as a collegiate-managed forum on a LinkedIn platform, generates networking, discussion and broader engagement amongst those individuals passionately committed to a viable future for Australian High-Value Manufacturing and actions resulting to implement collective views and goals.

It is proposed to develop this group in broader advocacy, collaborative facilitation, policy shaping and outreach activities from an expanding membership base of forum participants.

Using business networking systems and appropriate social media to empower and develop individual thinking, the aims of this new group are to positively influence industry and thought leaders, decision makers – and especially Australian Parliaments – in shaping and implementing policy settings that support delivery of value-add benefits to the broader economy by a highly competitive manufacturing sector.

**Manufacturing on the Move**



♦ Professional ♦ Focussed ♦ Positive

The **MotM** group will be amenable to forming collaborative alliances with like-minded initiatives or associations having converging views about manufacturing's key role in future Australian prosperity.

### Key contacts:

Patron / Founder:	Bruce Grey
Manager / Founders:	Jon Bradshaw
	Richard Jefferies
	Angus M Robinson
	Eduardo Sifontes

### Connect:

<https://www.linkedin.com/groups/6987032>

Also via:

### **Manufacturing Moves**

@Networks\_2015

*"Window on High-Value Manufacturing in and from Australia"*

[https://twitter.com/Networks\\_2015](https://twitter.com/Networks_2015)