

## Review of the National Innovation System

### Submission by

David Ansley

Ansley & Associates Pty Ltd

Management Consulting, particularly focused on commercialising new technologies

14/122 Bower Street

Manly NSW 2095

Ph +61 414 673 181

E dansley@bigpond.net.au

### Declaration of Interest

As a consultant to, and participant in, projects seeking to commercialise new technologies, I have an interest in improving the probability of success of projects and increasing the supply of new projects that I may become involved with.

I am a member of the ANBF (Australian Nano Business Forum), and Materials Australia, both of which have a close alignment with commercialisation of new technology and technology innovation more generally. I have also been involved in leading industry wide innovation projects with The Warren Centre for Advanced Engineering.

### Purpose of this submission

As has been noted on page 4 of A CALL FOR SUBMISSIONS, "If we are going to influence innovation outcomes, therefore, we need an active appreciation of the dynamic processes associated with innovation that lead to change. Thus we can describe innovating and being innovative as the creative problem solving designed to produce practical outcomes. The outcome of this process is the introduction of novel solutions to real problems, needs or opportunities."

I wish to comment on one important process, based on my observation of innovation processes in a wide range of business, research and social environments. To position my perspectives, these observations have been made from the following roles:

- Co-founder and director of a start-up company through IPO and into manufacturing
- Strategy consultant with Accenture (previously Andersen Consulting) in Australia and Asia, serving large companies in process and manufacturing industries
- Independent management consultant focused on commercialising new technology, serving R&D organisations, innovation focused larger companies and start-ups

**Key message - Value identification drives innovation success**

I believe that a deep understanding of the "value identification" process is critical to crafting an effective innovation policy, since it is a critical lever of innovation success rates. My reasons are set out below.

**1. Value identification is an essential step**

Innovation only occurs when the Value Proposition (the result of the *value identification* process) is compelling to the adopter (the one who has to change behaviour to implement the innovation). I believe that this is self evident - if the Value Proposition is not compelling, the innovation won't be adopted.

The Value Proposition must include adequate definition of the anticipated benefits and the anticipated costs of adopting an innovation so that a "buyer" can make the decision whether to adopt the innovation or not. Depending on the particular situation, benefits and costs could include:

- | <b>Benefits</b>  | <b>Costs</b>   |
|--|--|
| <ul style="list-style-type: none"><li>• Cost savings</li><li>• Revenue increases</li><li>• Quality improvements</li><li>• Environmental benefits</li><li>• Personal rewards (power, ego, financial, etc)</li></ul> | <ul style="list-style-type: none"><li>• Price</li><li>• Risk of delivering anticipated outcomes (technical &amp; financial)</li><li>• Costs of making changes to adopt the innovation</li><li>• Personal costs (power, ego, effort to change behaviour, etc)</li></ul> |

The Value Proposition may be conveyed as simply as a verbal pitch or advertisement (eg for consumer goods) or could be as complicated as a detailed business case or business plan.

The need for a compelling Value Proposition makes *value identification* process critical to driving innovation success.

**2. There's abundant untapped value identification opportunity**

There's lots of knowledge already and lots more being generated every day. There are also unlimited numbers of problems to be solved and opportunities to innovate. The challenge is making the connections between those who created (or know well enough) the knowledge and those who have (or know well enough) the problem or opportunity. While sometimes the connections are obvious, my experience consulting to various R&D organisations and businesses suggests that the vast majority are never identified. Unfortunately there's no data to support this view since "connections not made" can't readily be measured.

The linear view of innovation includes 2 paths to *opportunity identification*

- a. A researcher or inventor makes a discovery & seeks out potential ways to exploit it
- b. A person or organisation with an identified problem or opportunity seeks potential ways to overcome the problem or exploit the opportunity

Both of these paths assume a proactive effort by one party to raise the awareness of the opposite party to the point where *value identification* can occur. However, if the proactive party (and their active network) isn't aware of a potential innovation opportunity through lack of familiarity, only serendipity would lead to that innovation being explored. And in many cases there isn't even one proactive party because neither party has recognised that there could be valuable innovation, or neither party is motivated sufficiently to be proactive.

Rather than a linear process, I think of it as a probabilistic process. What is the probability that someone with particular knowledge will connect with someone who has a particular problem or opportunity that can benefit from that particular knowledge? Obviously the more connections that are made, the higher the probability. These connections are the start of the *value identification* process.

Another issue that increases the probabilistic nature of *value identification* is the importance of the "lead application". Often people and money will only be attracted to groups exploiting new knowledge that are seen to create high value early in the commercialisation process. Otherwise, without money and people, the new knowledge usually gets shelved - ie no further proactive effort. Not all potential applications of a particular innovation create equal value - for example factors that may affect the value at stake include:

- a. Geographic situation - eg rainfall, sunlight hours, steepness of terrain
- b. Company situation - eg manufacturing equipment, corporate structure, supply chain costs
- c. Economic situation - eg relative labour costs, tax regulations, disposable incomes

Hence, to attract the money and people to support ongoing commercialisation, the *value identification* connection must be to the right party where the high value lead application can be created, not just any party where innovation can be created.

Increasing the connections that start the *value identification* process, and in particular start the high value "lead application" *value identification* process can significantly improve the probability of innovation success.

### **3. There are significant barriers to successful *value identification***

*Value identification* requires the assessment of benefits and costs of adopting a particular innovation in a particular situation, leading to a Value Proposition. As

mentioned in point 1, if the Value Proposition is compelling the innovation is likely to be adopted, otherwise it won't be. It's easy to reach a non-compelling Value Proposition - much harder to reach a compelling one that stands up to scrutiny by sceptical accountants, investors, expenditure review committees or plant bosses etc. Three key barriers stand out to me:

**a. Lack of skills**

Developing a Value Proposition (or business case for more involved innovations) demands a wide range of skills including, depending on the particular innovation:

- management accounting
- financial modelling
- marketing
- sales
- manufacturing
- technical
- human resources, etc.

Often the people involved don't possess all these skills and can't readily access them.

**b. Insufficient granularity**

As elegantly explained by Bill Buxton in his article titled "A familiar problem"

([http://www.businessweek.com/innovate/content/feb2008/id2008026\\_464035.htm](http://www.businessweek.com/innovate/content/feb2008/id2008026_464035.htm)), to really understand the Value Proposition *value identification* must be conducted at an adequate level of granularity.

Then, to convince other influencers and decision-makers they must become comfortable with the Value Proposition at that level of granularity as well.

A lack of understanding at adequate granularity often foils the *value identification* process.

**c. Desire for confidentiality**

Most organisations have strict intellectual property protection and commercial confidentiality policies that limit what members/ employees are allowed to discuss outside their organisation. By definition, *value identification* requires the in depth consideration of the new knowledge, how it would be applied in a particular situation, and the resultant anticipated costs and benefits. At a minimum this requires one party to allow the other to gain a full understanding of it's confidential information, and usually a full mutual exchange results in a quicker and more robust *value identification* process. Many organisations make it very difficult to even start the *value identification* process.

<p>These barriers to effective <i>value identification</i> stand to derail efforts to increase innovation success rates.</p>
--