Letters to the Editor

Re: Creating engines of growth

The conclusion reached by the authors of 'Creating engines of growth', *NZ Science Review* (Vol 67 (2) 2010) is demonstrably factually inaccurate and the contents typify the 'sexing up' approach of politicised science writing. The authors claim:

The creation of the CRIs 18 years ago was a brave move. The reorganisation now being proposed is equally brave….

I must beg to differ for two reasons: first to protect the accuracy of the historical record, and second, because the governance and management of science is crucial to the future performance of New Zealand Inc. and can only be improved by **evidence-based decisions**, rather than political fawning.

The CRI reforms were predicated by two significant reports. The first, by Beattie *et al.* (1986) noted three essential components which must be improved if New Zealand was to follow the …. 'Well-established trend of many other developed countries towards dependence on knowledge-based rather than labour-based industries ...'

These elements were:

- An appropriate investment in R&D in both the public and private sector. (In fact they recommended doubling of the 1986 public expenditure by 1993–99.)
- An adequately-trained and informed work force.
- A confident awareness on the part of managers and boardrooms of the potential of R&D to facilitate innovation in their particular areas.

The conclusion reached in the Beattie Report remains inescapably true and is probably more pertinent now than when it was written:

We are convinced that New Zealand's overall present performance in all three aspects is less than adequate to achieve a significant rate of real growth. Market forces cannot be expected, unaided, to influence these important factors sufficiently to allow New Zealand to hold its own against competition, let alone do better.

The Beattie Report was ignored by the Government, who responded by establishing another committee to review science and technology. Their report: 'Science and Technology Review: A New Deal' (Arbuckle *et al.* 1988) noted that… 'A reason for the luke-warm reception which the report of the Beattie Committee encountered from some officials was the fact that Beattie relied on simplistic assertions of market failure as a justification for government funding.' The operative phrase here is… '…the luke-warm reception…by some officials.' Here is the nub of governmental thinking operating at the time, which assumed that unless the market was measuring value, there was none, and that commercialisation would ensure outcomes in dollar terms **in order to make it measurable.**

The 'New Deal' was the blueprint for the CRI reforms and introduced to science the management concepts of contestability, funder/provider split, input and outputs, allocative efficiency, market focus, market failure, etc. It also put science into a commercial model, setting up the CRIs as Limited Liability Companies owned by the Crown but required to generate a return (profit, tax, and dividend) to the Crown.

Science now had two goals: to undertake public good research and make a profit.

The difference in purpose and tone between these two reports is stark. The Beattie Report was pro-science, arguing on rational grounds the need for more funding for science. In contrast the Arbuckle Report was effectively anti-science in adopting politically-correct ideology and argued the case for the commercialisation of science through contestability, sponsorship, private funding, anticipating some 'wisdom' of market forces. The Government should not fund Research and Development unless the Market failed to deliver.

Driven by political ideology, not evidence, the 'New Deal' reflected the one-size-fits-all solution of Rogernomics where Science was forced to fit the 'Market Model' and no other options were considered feasible.

In researching a paper on science management in 2004, I was very surprised to learn that, in the time leading up to the formation of the CRIs, it appeared that no-one had bothered to wrestle with the fundamental question: What is science in terms of its principles and values, and, based on this, what governance and management model best preserves, protects and enhances these principles?

In brief - what is the optimal organisational model for science? I searched the world of management departments and the best I got was: 'Good question; we don't know!'

It would have proven beneficial, before the sweeping reforms were introduced in the 1990s, to have conducted a minimal review of the available evidence. Such a basic courtesy to the sector might have avoided so much pain, wasted effort, wasted money and disillusionment among science personnel.

It would have shown that (see Edmeades 2004, 2006, 2009 and note that if there are others who have contributed to these issues who I have omitted please let me know):

- Of all the professions, science is unique.
- Science is a normative activity based on a set of principles and values and which must be upheld with honesty and integrity.
- Science has, for this reason, very specific governance, management and operational requirements.
- Of all the available organisational models across the spectrum from corporate, co-operative, not-for-profit to public, the model with the best fit to the requirements of science is the Not-For-Profit (NFP) model.
- The worst model to choose for science is the commercial model.

Of course we now have evidence to support these truths from damning surveys of scientists' views (Sommer & Sommer 1997, Sommer 2002) together with the never-ending tinkering with the Market Model, since its inception, to somehow make it fit the purpose and needs of science. The latest review by the Crown Research InstituteTaskforce (Jordan *et al.* 2010) is yet another effort to drag science back to its proper normative role. But the CRIs are to remain dual-purpose commercial entities seeking profits while serving the public good. They will remain a 'house-divided' while this dichotomy remains.

The Taskforce did consider the NFP organisational model which was rejected for two reasons as recorded in their report:

1) *The Taskforce did consider moving to a not-for-profit model with charitable status, or changing the tax status of CRIs. On balance we concluded that such a change*

would not be advantageous, not least because it would give CRIs a commercial advantage that would make it harder for private sector research providers to emerge.

What? The logic is confusing. I can only assume that the Taskforce believes that the only benefit of the NFP model is that no taxes are paid, which is, of course not so, and that a non-taxable entity undertaking public good research would limit the emergence of other science-providers, who presumably wish to compete with the Crown to undertake public good research! Yes, we need to develop mechanisms to encourage commercial entities to work alongside CRIs and one sure way to do that is to get the CRIs to do public good research and stop competing with commerce for short term contract research.

2) *Since their establishment CRIs have invested a great deal in making the company model work effectively. The Taskforce believes it would be counterproductive to move from this model. Indeed the company model provides a strong framework for defining the Government's expectations and for monitoring the CRI performance.*

Once again the logic is baffling. It seems to suggest that we must persevere with the commercial model because we have persevered so hard to make it work even though the model will never work – a bit like telling a wrongly-convicted prisoner that he cannot be set free because so much effort has been invested in his confinement! Extending the metaphor it seems to me that one reason why the Taskforce Report was so readily accepted by scientists was because they were at least allowed some time out of the cage.

Similarly the last sentence is an indictment. The central theme of the report is an attempt to refocus science back to public good research and away from profits. This confusion over the role of the CRIs arises directly from placing science in a commercial model which the Taskforce now claims to be ideal!

Yes, the Taskforce recommendations are steps in the right direction, taking science back towards a normative model, but they appear small and timid. They can hardly be called brave. I am counseled by those involved in the politics of science to tread softly on this matter – the only way forward I am told is to take small, mincing, incremental steps. It is indeed ironic that the reforms which gave us the CRIs were a single, large, irrational jump into stupidity. That apparently was okay. Now science must claw its way back, chastened, to normalcy!

The Taskforce also recommended that the CRIs needed to clarify their purpose. In the words of the report each CRI is to '… develop a Statement of Corporate Intent …'. Really! To use one example, is it the case that after 20 years, AgResearch does not know why, how and with whom it is doing public good research? And the performance of any given CRI is to be measured against the Statement of Corporate Intent. But how do you measure principles, values, honesty, and integrity, the key indicators of any normative enterprise?

The decision to commercialise science in New Zealand by establishing the CRI model can only be described as brave in the same sense that it would be brave for a deaf, dumb and blind person to drive a motor vehicle down an Auckland motorway in rush hour. It was a decision based on ideology, not evidence – Marx, Hitler, Stalin, and Mussolini come to my mind as prominent examples of promulgators of blind ideology. The recent reshuffling of the deckchairs, as suggested by the CRI Taskforce, and now accepted by Government, is best described as a 'repair job' – a small step to take science back towards a normative management model. Are we being brave in our retreat?

While the position of those who are beneficiaries of the commercialisation and politicisation of science is perfectly understandable, it does not make their conclusions in any sense 'true' or helpful at this time. Bravery is a quality which does not exist without courage. To confront wrong and rectify mistakes is to show courage, not the limp hand-wringing, cap-fiddling obsequiousness, suggested by the authors. Bravery or slavery?

References

Arbuckle, R.H. 1988. *Science and Technology Review: A New Deal*. Science and Technology Advisory Committee 1988.

Beattie, D. 1986. *Key to Prosperity. Science and Technology.* Report to the Ministerial Working Party November 1986.

Edmeades, D.C. 2004. Is the commercial model appropriate for science? *New Zealand Science Review 61(3–4)*: 85–92.

Edmeades, D.C. 2006. A response to the MoRST sector engagement paper. *New Zealand Science Review 63(1)*: 30–32.

Edmeades, D.C. 2009. Science Under Threat: Why and what can be done? *Agricultural Science 1/09 [electronic]; 21(1)*: 16–20.

Jordon, N. 2010. How to enhance the value of New Zealand's investment in Crown Research Institutes. Report of the Crown Research Taskforce. www/morst.govt.nz/current-work/cri-taskforce/final-report/.

Sommer, J. 2002. *Voices from the grassroots of science: Tales of hope and woe*. Royal Society of New Zealand.

Sommer, J.; Sommer, D. 1997. Profiles: A survey of New Zealand scientists and technologists. *Royal Society of New Zealand Miscellaneous Series 43*.

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Reply

I appreciate the chance to reply to the letter from Dr Doug Edmeades.

'Engines of growth' had but one author – me – therefore all errors are my own. 'Brave' is, however, an adjective, not a noun, and therefore could be described as an error of opinion, rather than 'factually incorrect'. Furthermore, 'brave' isn't associated with outcome – it is like 'courage under fire'… death can follow. In education we try to build improvements by using encouraging words followed by suggestions. This approach allows a message to be heard and adjustments in behaviour to be made. In contrast, negative words lead to justification, and it becomes difficult to make progress – that thing which gives us satisfaction in the workplace and in life in general. It is my hope that others in the scientific community don't see lack of attack as 'political fawning', but as an attempt to build a better environment for science in New Zealand, one where they can make progress in their research.

I do, of course, thank Dr Edmeades for his ongoing efforts to improve my communication skills.

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