

Lean, mean Divisions can resuscitate CSIRO brand

For the defenders of CSIRO, a better response to Brendan Nelson's kite flying exercise about a CSIRO - ANU merger might be to contemplate a radical change in the organisational model for the grand old aunt of Australian science. It is time to find a model that better reflects the nature of science and the culture of scientists, while also recognising the legitimate expectation of government to have a say in setting the research agenda.

Rather than disbanding CSIRO, CSIRO's corporate leadership could become an investor in science, focused on deciding which research to back. Autonomous Divisions could be left to come up with research proposals and stand and fall on their ability to compete for long term funding contracts from appropriation, with much greater management and operational freedom. This would combine the best features of the CRC scheme but boost the sophistication and accountability of science funding beyond what the secretariat of that scheme is capable of and resourced for.

The valuable brand of CSIRO could be retained by the Divisions, as long term investment funding under the CSIRO badge would be a statement of quality assurance even more stringent than a guaranteed slice of the corporate pie. Competition would reduce bureaucracy and increase discipline and accountability, which have never been CSIRO's strong suit. Indeed, the investment model could reduce the destructive tension between the managerial/organisational hierarchy of the organisation and the intense, ego driven intellectual hierarchy of individual scientific disciplines that has plagued CSIRO for decades.

A series of piecemeal changes to Australian research funding over two decades has left CSIRO and other research bodies in a debilitated state. Governments have gradually introduced a series of competitive funding schemes and external earning requirements, while reducing or leaving static the direct appropriation to public research agencies and Universities. The competitive funding schemes have given Government a much greater say in the funding priorities of research – a reasonable expectation given that they are the ones providing the money. But they have also left the tail wagging the dog as the research organisations have used increasing amounts of their appropriation funding to lure the grant money or external earnings.

CSIRO has attempted to respond to its changing environment with a series of restructuring and refocusing exercises, fiddling about with corporate management through Institute structures, Deputy Chief Executives Divisional mergers and so on. Efforts to exert corporate leadership have varied between Chief Executives over time but any major change has inevitably been accompanied by massive debate, often descending into intensely personal vitriol.

This debate has generated a great deal of heat and little light. Frustrated Managers have been known to observe that while a management decision in a normal organisation is a directive, in CSIRO it is an invitation to critique. This is not surprising in a scientific culture founded on debate of ideas.

This culture is the essence of science and must be nurtured. But the organisational outcome is a lack of discipline and accountability. Respect and deference goes to those with the highest scientific standing, rather than to the senior Managers, and intellectual egos delight in finding errors in the approach advocated by the corporate leadership.

What is needed is some means of nurturing this essential scientific culture, while tempering its extension into day-to-day management where it can make decision-making at best tedious and at worse dysfunctional. A common complaint from industry is that whenever one calls a CSIRO Research Manager, he or she is off at a retreat debating strategic directions.

The Cooperative Research Centres, by no means perfect, do seem to point to a better model: CRCs receive significant long-term funding, with critical reviews every 3-4 years. This matches the time frame over which research can yield meaningful results. By providing a sufficiently large quantum of money, the Scheme avoids the situation where scientists spend most of their time writing research proposals rather than doing science. The periodic reviews keep focus on and responsiveness to national research priorities but strategic debate is kept within appropriate boundaries.

Individual CRCs have had their difficulties. But Centres that fail to deliver are wound up when they fail to deliver. Some good CRCs may have fallen by the wayside, but this is more an issue of available funding or it could reflect a lack of resources and hence rigour and expertise in the selection process.

CSIRO could learn from the CRCs to develop a model less prone to introspection and dispute. The model would need to recognise the fundamental value that CSIRO offers Australia, including:

- CSIRO's brand value, with national and public recognition built up over 80 years
- Quality assurance
- The growing importance of interdisciplinary research
- The nurturing of young scientists and providing them with a stable career path
- Keeping administration efficient and capturing economies of scale.

The idea of making all of CSIRO's funding contestable among autonomous Divisions is mistakenly construed as necessitating the loss of all these benefits.

The CRC scheme is recognised as an independent brand precisely because brand transcends organisational structure. Indeed, New Zealand could have saved itself some trouble if it had recognised this when it broke up CSIRO's sister organisation to form the Crown Research Institutes. Had the Kiwis simply called these new bodies the DSIR Research Institutes, the DSIR brand would have persisted, rather than being replaced with the new one of Crown Research Institutes.

Assurance of the quality of the research effort requires able scientific review. A central investing body can set more stringent requirement for this via peer review as a precursor to funding. Quality is easier to ensure from an arm's length review than when the people managing and supervising the research are also responsible for

making assessments about its worth. If Divisions faced potential competition from new research entities, then the drivers of research quality would only be strengthened.

Interdisciplinary research could also be fostered by a competitive funding body better than via the lengthy and convoluted decision-making chains of a large organisation. While CSIRO has some interdisciplinary research successes, it has generally struggled to force Divisions to cooperate. Competitive funding would bring some clear focus to genuine value in interdisciplinary research. The central investing agency could still specify major national goals which the Divisions could compete to provide, so Flagship programs and their various predecessors remain an option.

Young scientists can be nurtured as long as the funding operates over timeframes appropriate to the advance of research. The stable funding environment of the CRCs has given starts to many young researchers. It is in stark contrast to approach of the ARC and NH&MRC that have depressed and demoralised a generation of young researchers by putting them on a treadmill of short term, small grants that take up far too much research time in relation to the influence they deliver Government and must be one of the most inefficient means of funding research.

As to economies of scale, modern management systems have negated many of these. In any event, competing Divisions could share systems as and when they add genuine value - even competing Banks can contemplate sharing some back office services.

If an investment model was adopted, the investing agency could also be held accountable with periodic reviews of performance against defined criteria for return on investment – but again only over the time frames of several years by which research progress can be judged. This would be an improvement over the budget and planning cycle of the Federal Government with which CSIRO has to contend. This makes far more frequent but less effective demands on the Organisation, even when the triennial funding is in effect.

The critical improvement, however, would be to focus the central agency on investing in science rather than managing down to the scientific bench. Scientists yearn for a sense of control and freedom that is difficult to achieve when one is placed at the bottom of a large organisational pyramid. That's why most scientists in CSIRO have traditionally preferred to identify with a Division rather than corporate CSIRO.

The debate over CSIRO's internal machinations has gone on far too long. While this article adds to that debate, at least it is proposing a model that might shift the debate from organisational strategy onto which science should be backed. Competition is a great means of focusing minds on the real issues, it is a fountainhead of innovation, and it exposes convoluted management and decision-making at whatever level it might be.