

Secretariat to the Expert Panel
Review of the National Innovation System
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Submission to the Review of the National Innovation System

Cooperative Research Centres

Introduction

This submission is directed to the review of the Cooperative Research Centres (CRC) Program which has been identified as a specific task within the broader review of the national innovation system. I have had a background in academia, government and industry and was the Chairman of the CRC Committee for 10 years (1996 to 2005).

The CRC program has been very successful since the first selection round in 1990, and since then there have been nine further selection rounds, ten in all. The first three rounds were held on an annual basis and then selection rounds were held every second year. The program has been reviewed on a number of occasions:

- 1995: Myers Review
- 1999: Mercer/Stocker Review
- 2000: Departmental (DIST) Review
- 2003: Howard Evaluation.

Each review has identified that the program has been successful and has recommended that the program continue. The review reports give a number of case studies to illustrate the success of the program. The peak organisation for CRCs, the CRC Association, has also published a number of case studies illustrating the success of the program over the various sectors covered by CRCs. I have presumed that this material is available to the Expert Panel and will not go into detail here. I shall make further general comment on the success of the program later in this submission.

The program has not been static. From time to time changes have been introduced on the recommendation of the CRC Committee in light of experience or in response to the above reviews. The major changes can be summarised as:

- Changes to the structure and membership of the CRC Committee and expert selection advisory panels.
- Changes to the objectives for the program.
- Changes to the selection criteria.
- Existing centres were allowed to apply for renewals; indeed some centres have now had 3 "lives".
- Supplementary grants were introduced to allow existing centres to apply for funding of new projects which could be completed within the life of the centre.
- The reporting requirements for centres have been changed from time to time.
- The role of Visitors has changed.
- A commercial emphasis was introduced following the Howard review.
- Applications were changed from hard copy to electronic format.
- Applications were changed to a 2-stage process; to an initial expression of interest from which the stronger applicants were invited to submit a full business plan.

- The governance of centres was changed from the option of being a joint venture or an incorporated body to having to be incorporated as a company structure.
- The format for Annual Reports has changed to be less costly and less demanding for centres.
- The formal review of individual centres by the Department and the CRC Committee has changed from a 3 and 5 year process to a single 3rd year review.

The CRC Committee is only an advisory committee so all changes had to have departmental and ministerial approval.

I shall now make comment under specific headings.

Why Cooperative Research

The CRC program was introduced in 1990 by the then Hawke government on the recommendation of the Chief Scientist of the time, Professor Ralph Slatyer. Through the concept it was hoped that the following outcomes would result:

- Cooperation and collaboration across common research areas could create critical mass and allow wider access to specialist resources.
- There could be increased outcomes from cooperation, it was hoped that the result of the whole would be greater than the sum of the parts.
- The sharing of resources could enhance outcomes and add to the nation's skilled workforce.
- Cooperation and collaboration would overcome institutional barriers.
- The CRC program could strengthen the involvement of industry in innovation.
- It was hoped that there would be an increase in the uptake of innovation and technology.
- The involvement of research users would be of benefit in developing intellectual property and technology transfer.
- There could be a change in research culture for the national benefit, and hopefully lead to greater investment by industry in research, development and innovation.

Overall this has been the result and has been confirmed through the internal and external review process.

User involvement

There has been a multiplier effect through having research-user involvement in CRCs. The major benefits have been:

- Research-users have been valuable members of the Boards of CRCs.
- Users add a dimension to the strategic planning process, and add valuable experience to business planning.
- Research-users add experience in market issues and in priority setting.
- Users enhance research management and can participate in research supervision, especially with the co-supervision of post-graduate students.
- Research-users can offer employment opportunities, vacation placement and industrial experience for undergraduate and graduate students.
- The users of research can be critical in the areas of intellectual property development, technology transfer and commercialization.
- The research users in CRCs provide both cash and in-kind support for CRCs thus increasing the investment by industry and business in research, development and innovation.

The Success of the Program

As indicated above there are a number of published case-studies which illustrate the benefits flowing from the CRC program. These include new technologies in the manufacturing, mining, information technology, agricultural, environmental and medical sectors. A number of successful spin-off and start-up companies have been formed to commercialise new technologies.

New products and new, or improved, processes have been developed through CRCs and these have resulted in improved productivity, improved practices, and increased sustainability for a wide range of industries. On top of this there have been excellent outcomes in the public interest areas resulting in

environmental outcomes (eg in such areas as Antarctica, rain forests, the Great Barrier Reef, water management, aboriginal health, weed management, marsupial management, etc).

There are examples of increased efficiency and productivity for industry and new employment opportunities. The CRC program has established a base for long-term economic gain and sustainability across a number of sectors.

The other success stories resulting from the program include:

- A new form of governance for research centres which involves research providers, research-users, and independent members of centre boards responsible to see that milestones and outcomes are achieved.
- A new breed of research director, the Centre CEO, who is responsible for ensuring that strategic plans are met and that, through cooperative and collaborative research outcomes are greater than the sum of the parts.
- From the benefits of cooperative research strong partnerships have developed between research providers and research users.
- Outstanding education programs, particularly at the post-graduate level, have been developed through CRCs. Students have benefitted from co-supervision, industry placements, through undertaking special short courses (for example, commercialisation, communication, research management, strategic planning, etc). Students attend regular research meetings to present results and to learn what is happening across the centre as a whole.

Where to From Here

In light of experience, and to add value to the program, a number of changes could be considered for the CRC program. These are:

1. Program Diversity: Coming from a recommendation from the 2003 Howard Review the so-called public-interest CRCs were dropped from the program to give preference to applications centred on direct commercial outcomes. This recommendation was adopted by the Minister of the day for the 2004 and 2006 selection rounds. However it is somewhat difficult to draw a line between public-interest and commercial proposals. Often the so-called public-interest CRCs can propose long term economic gain, particularly in the environmental areas.

Thus it is recommended that CRC applications be open to all comers provided that they can be aligned with National Research Priorities and the National Innovation Priorities which are proposed, I believe, to come as a result from the Innovation Review.

2. Program Length: Presently all CRCs have a set life of 7 years. There is a case that some CRCs could achieve their proposed outcomes in say 5 or 6, or even fewer, years.

It is recommended that there be a variable time for CRC applications for up to 7 years.

3. CRC "Life": As a result of the several CRC reviews centres can re-apply for renewal. A number of centres have had two 'lives' and a further number have had 3 'lives' resulting in almost 20 years of full funding. Some are now coming to the next selection round, if there is one, to apply for a fourth life. This means that if successful they will have been supported with CRC funds for nearly 25 years. It can be argued that centres should be somewhat less dependant on CRC funds as time goes by and more dependant on other funds (industry partners, R & D Corporations, other government funds outside the CRC program, etc). To date the selection criteria have allowed centres to apply for increased funding when applying for renewal.

It is recommended that centres can have up to 2 "lives" through the CRC program and if successful in going to a second life they show less need for CRC funds and greater support from other sources.

4. The Start-up Process: There have been many examples where successful applicants for a CRC are slow to finalise a Commonwealth Agreement and often there are delays in getting into full swing in the first year of operation. This could be avoided if the Core Participants signed a Centre Agreement as part of the application and would only take effect if the application was successful.

It is recommended that the application process include the requirement to include a Centre Agreement which will take effect if the application is successful.

5. Throughout the life of the CRC Program much attention has been directed to the demands in preparing an application. The two-stage selection process was developed to answer some of the issues which had been raised. Nevertheless it must be realized that the process is very competitive and often applicants employ consultants, and this can create the situation which has led to criticism. It must also be realized that significant sums of money are applied for in seeking a centre and this in itself demands a comprehensive application. However attention could be directed to developing guidelines for applications which could simplify the process.

It is recommended that the review look at the question of simplifying the application and selection process to reduce the burden on applicants in preparing a CRC application.

Conclusion

There are good reasons to continue the CRC program. In light of experience a number of changes from the present rules are recommended.

I would be pleased to add further comment on request and/or to meet with members of the Expert Committee to discuss any of the above issues further. This submission has been submitted by post and electronically.

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