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Assessing Research Impact

An international review of the Excellence in
Innovation for Australia Trial

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Executive summary

This report reviews the process of the Excellence in Innovation for Australia (EIA) Impact Assessment Trial ('the EIA Trial'). The EIA Trial had two aims: to assess the non-academic impact of research generated by a subset of Australian universities, and to be a pilot for a potential companion piece to the next Excellence in Research for Australia (ERA), a nationwide performance assessment of Australian universities.

Twelve universities participated in the Trial, including the Australian Technology Network of Universities (ATN), which commissioned this review. The participating universities submitted a total of 162¹ research impact case studies, which were assessed by seven independent panels, made up of 75 experts, of whom 70% were from outside the university sector. The results of the Trial were published in November 2012.

The aim of this review was to provide an overall assessment on the applicability of the EIA process as a companion piece alongside future rounds of ERA. The review had two objectives: to evaluate the process to see how EIA could be improved if repeated in the future, and to evaluate how the EIA could be scaled up to be a companion piece to the ERA.

The review resulted in eight headline observations that are summarised in Box 1 and described in more detail below. The headlines were derived by combining RAND Europe's expertise in research impact assessment, together with the synthesis of four evidence streams collected for this study:

- *A critical review of the assessment guidelines and other relevant documentation.* The guidelines published for the Trial were benchmarked against other international impact assessment exercises including the UK Research Excellence Framework (REF).
- *A critical review of a sample of submitted case studies.* Ten case studies, sampled from ATN universities and deliberately chosen to ensure a spread of subject areas and ratings, were reviewed to assess the quality of case studies, the application of the guidelines and how panels assessed the case studies.

¹ Of the 162 unique case studies that were submitted, one was sent to two socio-economic objective (SEO) sectors for assessment and another to three SEO sectors, resulting in an aggregate of 165 case studies by SEO sector.

- *An assessment of panel scoring.* An institutionally de-identified quantitative assessment of the overall ratings of the four main panels (including sub-panels) to assess scoring behaviour, including inter- and intra-panel reliability.
- *Surveys of ATN universities.* A survey of the five ATN member universities to provide an institutional perspective of the Trial, and a survey of case study authors to get a researcher perspective. All five institutions responded, and 24 of the 64 individual case study authors responded.

The eight headlines are divided into two groups. The first focus on improving the EIA if it was to be repeated; the second focus on issues and ideas that would need to be considered if the EIA was to be scaled up as a companion piece for the ERA. Neither set of headlines are necessarily mutually exclusive, and all eight should provide the basis for continued discussions and consultations about how to develop a solid foundation for impact assessment within the Australian university sector.

Box 1: Summary of headline findings from review of the EIA Trial

Issues and ideas on how the EIA could be improved if repeated

1. The EIA Trial was a successful process, but it could be improved
2. The quality of case studies could be improved
3. Consider including the contribution of research as an assessment criterion (in addition to reach and significance)
4. There is a need, and an opportunity, to create and embed a culture of and expectation for impact within Australian universities and wider society
5. Steps should be taken to understand the benefits and (unintended) consequences of future assessments

Issues and ideas on how the EIA could be scaled up as a companion piece to the ERA

6. The EIA impact assessment process will need to be reconfigured if scaled up
7. Any future EIA impact assessment will need to ensure that the direct and indirect benefit of assessing impact in Australian universities outweighs the transaction costs of the assessment
8. There will be a need to engage early with other institutions that did not participate in the EIA Trial in a scaled up impact assessment

1. The EIA Impact Assessment Trial was a successful process, but it could be improved

The Trial was a success and met its aims and objectives. It is a unique exercise as it is one of the largest attempts worldwide to assess the non-academic impact of research arising from the higher education sectors using a case study methodology. In doing this, it encouraged reflection on the non-academic impact of Australian universities, allowed participant institutions to demonstrate their impact, and demonstrated the feasibility of assessing research impact through a case study approach. The survey responses showed that institutions and case study authors were positive about the Trial, the review of the case studies demonstrated engagement in the process and also that impact could be identified and articulated, and the assessment of the panel scores showed how panels could differentiate between different degrees of impact. The Trial also identified areas for improvement in the process for assessing impact, as detailed below.

2. The quality of case studies could be improved

For the assessment of impact to be fair, assessed differences between case studies must be reflected in the relative reach and significance of the impacts, and any artefacts of the drafting process must be minimised. The scoring analysis showed that the individual intermediate panel scores about the description and nature of the impact were the most significantly correlated with the overall case study score, as compared to scores about the description of how the research underpinned the impact and/or the validation of the impact. With this in mind, there is an opportunity to improve the quality of the case studies by making some changes to the guidance documentation, by reordering the case study template, and by providing material and training on how to write good impact case studies.

The guidance material provided to authors and panels was very concise and clear and was praised by all the institutions in the survey. However all institutions also provided suggestions for how the guidance could be improved (as described in section 2.2.1). Two of five surveyed institutions specifically noted that reordering the impact case study template would significantly improve the overall quality of the case study and another noted the chance of repetition within the existing sections. The provision of best case examples was suggested by the majority of institutions and noted by a number of authors. The benefit of such material was reinforced from the review of the case studies, which highlighted a number of technical ‘errors’ in articulating impact (e.g. focusing on potential not realised impacts) that were overlooked by case study authors and in some cases by the panel. We suggest that it may be beneficial to provide best-practice examples of impact case studies or practical advice to case study authors in future, and consider publishing impact case studies from the trial, and their scores, if possible, although we recognise that doing this will not be straightforward.

3. Consider including the contribution of research as an assessment criterion (in addition to reach and significance)

There are two main criteria in the EIA guidelines for assessing research impact: reach and significance, where reach refers to the spread or breadth of influence or effect on the

relevant constituencies, and significance refers to the intensity of the influence or effect. However, the EIA guidance does not align reach and significance with contribution for either contribution of the research to the impact, or the contribution of various research groups to the overall research project (and hence the impact). This is important as the impacts claimed in a case study could be large, but the contribution of the claiming researcher or research group could be relatively small, and this needs to be taken into account when assessing impact. It was notable that none of the case studies reviewed attempted to articulate how research contributed to the impact and indeed this issue did not arise in either survey. Thus it may be beneficial to amend the guidance for case study authors and panel members in order explicitly to address how contribution of the research to the impact is accounted for and to include this as a criterion alongside research and significance in future rounds of EIA.

4. There is a need, and an opportunity, to create and embed a culture of and expectation for impact within Australian universities and wider society

Australia has been at the forefront of developing national research evaluation and impact assessment systems over the past ten years. The Research Quality Framework, which was subsequently superseded by ERA, originally aimed to assess the quality and impact of research. This suggests that the concept of researcher accountability, and accountabilities that go beyond the academic systems, are relatively well founded within the Australian higher education system. This was confirmed in the institutional survey: three of the five respondents said the Trial demonstrated the need to show impact regularly. It will be important for the sector to continue to create and embed a culture of impact within Australian universities and also to create the demand for and expectation of such an impact by the tax paying public and their representatives. Institutions will need to develop internal impact strategies that focus on not only institutional approaches to the information management of impact, but also how to maximise impact as and when it occurs.

5. Steps should be taken to understand the benefits and (unintended) consequences of future assessments

A number of practical issues come to the fore when future rounds of EIA are considered. For example will a future assessment look at the marginal improvements in impact – the additional impact that has accrued between rounds – or allow the total impact to be (re)assessed? Is there a risk that institutions and individuals will attempt to manage the timing of impact to fit assessment windows? Will wider stakeholder engagement – both panel participation and support for the ‘evidencing’ of impact – hold up? The answers to these types of questions will need to be discussed and debated prior to subsequent iterations of EIA. Regardless it will be important that clear, transparent guidance be issued as soon as feasible if an EIA exercise is to be repeated, as that guidance will help to prevent unwanted or unnecessary behaviours.

6. The EIA impact assessment process will need to be reconfigured if scaled up

If the EIA Trial is to be scaled up as a companion piece to ERA it will need reconfiguration because the primary purpose of assessment will need to be clarified and may change; the unit of analysis may be too broad at a larger scale; and there is a limit to the number of case studies that can feasibly be reviewed by panels.

First, there will be a need to seek agreement on the primary purpose of the assessment as this will influence design. For example, will a scaled up EIA lead to the allocation of funding to Australian universities? The strategic intent of the exercise may influence the number of case studies submitted, the unit of analysis, and the nature of engagement of future design considerations.

Second, there may need to (re)consider the unit of analysis. A unique characteristic of EIA was its focus on socio-economic objective (SEO) codes as the organising principal, as opposed to research discipline (as adopted by the UK REF) or fields of research (as in ERA). Although we understand the rationale for using SEO codes and the merit in doing so as it relates to the underlying purpose of the EIA and the broader context in Australia, conceptually this may have the potential of limiting the variety of impacts that can be assessed, and which might be raised by case study authors. Although this is analogous to debates about how to deal with multi-disciplinary research when the organisational principal is disciplinary focused, it is nevertheless worth considering the implications. Two of the five institutions surveyed thought the SEO codes were an appropriate unit of analysis and another stated that groupings were acceptable, but three institutions noted the main sectoral panels under which the SEO codes were grouped (defence, society, economic and environmental) were too broad and did not allow for the benefits of the disaggregation by SEO code to be reflected as strongly as they could be. We suggest a more disaggregated system would indeed be needed with larger numbers of participating institutions, cases studies and panels. Institutions also noted that more guidance would be needed on how to deal with case studies that cross a number of SEO codes.

Finally, future exercises will need to consider the number of case studies that can feasibly be assessed. This will be a trade-off between generating enough case studies for a representative assessment of an institution's impact, and the workload (and costs) of institutions, panels and administrators. These and other issues are interdependent, and thus likely to be resolved through an iterative process of development.

7. Any future EIA will need to ensure that the direct and indirect benefit of assessing impact in Australian universities outweighs the transaction costs of the assessment

Any scaled up impact assessment system needs to provide value for money. Based on typical transaction costs for research funding, the cost of funding the impact assessment should be no more than a tenth of the benefits to participating institutions. The costs associated with the identification, articulation and evaluation of impact case studies are estimated to be about five to ten days (or AU\$5k-AU\$10k) per case study. This is very similar to time estimates generated for the pilot of the UK's REF. If a scaled up EIA is to aid the allocation of funding alongside the ERA in the future, it is possible to project the most logical level of funding allocation that should result from the impact assessment.

Based on estimated calculations presented in this report, we suggest that for every case study submitted for assessment, about AU\$100,000 would need to be available for allocation to universities to make the exercise worthwhile. Combining this heuristic with a discussion about the design of a scaled up system will help to clarify and test some of the trade-offs described above (headline 6).

8. There will be a need to engage early with other institutions that did not participate in the EIA Trial in a scaled up impact assessment

The EIA Trial involved 12 of Australia's 39 universities and thus it will be essential to involve other institutions in the development of a scaled up version of EIA. This will help to generate sectoral ownership for a national impact assessment system and to ensure that non-participating institutions from the EIA Trial are not at a disadvantage. Related to this, and as already discussed, will be the need to provide material such as examples of case studies and 'how to' guides, as well as brokering and facilitating a sector-wide discussion and debate. At the same time it will be important not to dilute some of the unique strengths of EIA including, for example, its focus on SEO codes, the dominance of non-academic panel members, and the brevity and clarity of guidance.