

## Measuring Research Value for End Users

Industry driven research has less standing in university culture than research that achieves great recognition amongst other researchers. Altering those priorities, without diminishing the importance of investigator led research, will not be easy.

The incentives for individual researchers are critical to stimulating a change in the balance of researcher focus. A significant factor holding back universities' capacity to extend research activity to improve support for industry driven research is the emphasis on income from national competitive grants, publication output and citations and the way in which they underpin the Excellence in Research for Australia (ERA) assessment and most international ranking systems.

ERA's reinforcement of traditional assessments of standing has been major. To balance its impact a parallel exercise focused on a considered assessment of the real impact of a university's research will help change the importance given by universities to collaboration with industry. We need to not contrast "research excellence" with "industry engagement". We should measure the excellence of industry driven research to go in parallel with the excellence of investigator driven research.

The Government has stated that it

"will work with the research sector and industry to develop a plan to improve the assessment of the research system. This will include improved metrics on engagement and knowledge transfer with industry, research outcomes, and impact" *Boosting the Commercial Returns from Research Strategy, Action 14.*

There has been much attention to the useful work of the Australian Academy of Technological Sciences and Engineering in developing its Research Engagement Australia (REA) proposal. That follows the work of the ATN and Go8 to trial collection of evidence about the trail from research to effective use. The IRU considers some of the metrics proposed for REA could have a useful role in an effective scheme but that it has crucial weaknesses built into its design that limit its value as a comprehensive option.

IRU has made public its concerns and articulated the objective for an assessment that makes use of judgement based on data to assess the likely value of universities' support for research end users. We recognise that we need to spell out the key elements of our approach to advance the debate.

## The IRU proposal

The IRU proposal has three main elements:

- Panel based judgements of the value of university research in support of external users
- Judgements based on data sets agreed to be of relevance
- Use of the resources allocated for ERA following completion of its third assessment early in 2016.

Fundamental to the IRU proposal is judgement by knowledgeable peers. It is necessary for two reasons. First, a judgement by competent people is more likely to reflect real differences in achievement giving the process much greater credibility. Second, the data available for the task needs interpretation and protections against data manipulation. The panel judgement brings to bear minds capable of dismissing manufactured evidence and seeing through to the real value of the activity.

An exercise done well is worth the expense against a cheaper but valueless alternative. The IRU understands the problem of calling for a further assessment exercise if Government does not have the resources to undertake it. The IRU proposal is to redirect current resources used to support ERA once the 2015 ERA evaluation is complete.

## Detailed elements

### 1. Scope of the assessment

The Government's priority is support for industry, which focusses on commercial outcomes. IRU fully supports the need to significantly increase the extent and quality of research meeting industry needs. However, any scheme should be part of a comprehensive process of research assessment to include all research users including non-profit and Government bodies.

Hence IRU proposes that all end user research be included but with distinct assessments for commercial outcomes and for non-commercial outcomes.

### 2. Focus

The previous impact debate sought to identify the use of research showing the link from the original research through to its application. That approach founders due to the complications of tracing the full set of links, the period of time needed to have elapsed, and the sheer unlikelihood of creating any comprehensive set of ratings which could assess on a consistent basis across comparable areas in different universities.

The ATN led study *Excellence in Innovation Research impacting our nation's future – assessing the benefits* (ATN and Go8, 2012) showed the potential and the limitations of using case studies to track the complete process. It showed that it could be done but that it could not be consistently applied across all of a university's research and done comparably across universities.

Engagement alone seems too instrumental. It is similar to counting publications and research income quanta, the process in place before ERA was created to assess directly the quality of the research.

The IRU proposes that analysis of the various data sets indicative of university support for research end users should be the basis to assess the value of the activity.

### 3. Basis for grouping research

ERA and ATSE research engagement measures use disciplines as the basis for ratings and hence comparison. IRU members find that ERA's discipline categories hinders them from presenting their research to best effect but have worked with them nonetheless. In the context of assessing the value to industry and other research users the limitation is greater, since user needs will often require multiple discipline inputs.

Past discussions to develop an assessment of research use considered industry based classifications. IRU proposes that we should return to that discussion so that we use an industry based classification

such as the International Standard Industrial Classification of All Economic Activities (ISIC)<sup>1</sup>. This would require universities to add an additional code to research data, an additional cost the IRU considers acceptable.

Industry based categories would also support analysis against the national science priorities and the related five Industry Growth Centre themes.

#### **4. Data and other inputs for assessment**

The validity of the exercise will depend on the reliability of the assessment based on the contributing measures and other inputs and requires agreement about what constitutes good support for industry and other end user outcomes.

At present we have a focus on searching for some simple data items without the required development of agreement about what is a good outcome. The initial testing of the approach will create greater agreement about what is to be considered, and which of the data sets and other inputs most assist in reaching a reliable rating.

There is a wide array of potential data elements which could provide the foundation for an assessment. Recent sets to be considered include those the ATN Research Industry Advisory Board has analysed<sup>2</sup> and the financial indicators which ATSE proposes.

ATSE has refined the use of financial data about non-competitive grant income from industry and related entities to propose three measures. IRU has some concerns about two of these which can be explored in further discussions.

The first, to measure relevant research income by the number of research staff is plausible, requiring confirmation from analysis of its actual results institution to institution. The second, relevant research income as proportion of all sector income is an indicator of the extent of the activity compared with others but has no demonstrated meaning beyond that. The third measure of relevant research income as proportion of university revenue is more likely to demonstrate the different revenue bases of universities than to indicate anything meaningful about the value of research.<sup>3</sup>

The ATSE approach is designed to minimise manipulation of the indicators or other perverse activity, an important issue. The IRU focus on an assessment by a panel will help moderate for data manipulation and allow in a wider array of useful data. This includes data about support for policy development and community understanding of issues.

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<sup>1</sup> [http://unstats.un.org/unsd/publication/seriesM/seriesm\\_4rev4e.pdf](http://unstats.un.org/unsd/publication/seriesM/seriesm_4rev4e.pdf)

<sup>2</sup> *Innovate and Prosper: Ensuring Australia's Future Competitiveness through University-Industry Collaboration*, ATN 2015  
[https://www.atn.edu.au/Documents/Publications/Reports/2015/ATN%20Innovate%20and%20Prosper\\_web\\_version.pdf](https://www.atn.edu.au/Documents/Publications/Reports/2015/ATN%20Innovate%20and%20Prosper_web_version.pdf)

<sup>3</sup> This measure is strangely reported in the ATSE's REA study. The example at p18 generates a result of 0.006, reflecting that the research income for a particular field divided by all income for the university will generally be small and at the most be 1 in the unlikely case that all university income is relevant. Yet figure 4 and 7 present this measure on a scale of 0 to 300 and 0 to 30, without further explanation.

## 5. Rating scale

The rating scale should reflect the undoubted challenges in making a meaningful judgement. In the initial assessment the focus should be to rate against a minimum number of categories such as a three point scale of “Research shown to have a high level of value/Active research engagement and support for end users/Not rated for lack of sufficient activity or value”.

Subsequent iterations should focus on greater confidence in the ratings given against the three broad ratings, rather than attempting to make finer distinctions.

The assessment approach, consistent with ERA, should be criterion driven such that all or no universities could be at a particular rating. The alternative of forcing bandings so that a set proportion of universities are given a particular rating over emphasises ranking over a determination of the standing of the activity.

## 6. Resourcing and responsibility

Programme 1.3 of the ARC is for ERA. Its planning for 2015-16 states that “The 2015 ERA evaluation is currently underway, with outcomes due to be reported during 2015–16”. The next ERA is not intended to be for some years to allow for a suitable gap in the data assessed to be capable of showing the developing Australian research system. The programme has expenditure across the budget years at similar levels. Once the 2015 ERA is complete these resources should be used to construct an assessment of end user research in the period prior to the next ERA.

### Australian Research Council, Allocations for Programme 1.3 ERA

2014-15	2015-16	2016-17	2017-18	2018-19
\$7.25m	\$7.24m	\$7.42m	\$7.45m	\$7.56m

Source: *Portfolio Budget Statements 2015-16, Education and Training Portfolio*, p164

3 July 2015