

KNOWLEDGE TRANSFER FUNDING POLICY: AN OVERVIEW OF THE KEY ISSUES

Background

At the National Stakeholders Forum for the Research Quality Framework, the Minister for Science, Education, Science and Training indicated that he wished to receive proposals for a funding program in support of ‘third stream’ activities similar to that currently in place in the UK. Following this request, a series of such proposals have been drawn up notably including:

- The Third Mission of Universities- Business and Community Engagement, Outreach and Regional Development: Innovative Research Universities Australia (August 2005)
- Third Stream Funding-Funding Universities for Engagement in the Third Millennium: New Generation Universities (October 2005)
- Engagement with Business and the Community: Enhancing Universities’ Interaction: The AVCC Committee (December 2005)

Following circulation of the AVCC document, it was announced that DEST has commissioned PhillipsKPA to undertake a consultancy to examine university and PFRA engagement and interactions in the context of the possible development of a ‘knowledge transfer funding policy’.

The ATN has been asked for input in relation to:

1. What is the most appropriate definition and scope of knowledge transfer activities in the context of the possible development of a knowledge transfer funding policy?
2. To what extent are knowledge transfer activities already supported through existing funding programmes? Are these areas where there is insufficient or inappropriate support for such activities?
3. Are there examples of knowledge transfer activities, indicative of the definition and scope that might be identified for possible elaboration as case studies?

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Question 1: Definition and scope of knowledge transfer activities in the context of the possible development of a knowledge transfer funding policy

Knowledge transfer activities – definition and measurement

There are a number of definitions in the public domain of what constitutes university ‘third stream’ activity, including definitions of what is meant by knowledge transfer activities, engagement and outreach in this specific context.

Knowledge transfer is not only the linking of research to commercial outcomes (patenting, licensing and spin-off creation and the income streams arising from these activities) but also includes activities such as academic publication, capacity-building, contract research and consultancy, student projects in industry, conferences and seminars and continuing professional education.

It is understood that teaching and research form the 2 core activities of any university, however, universities have always made broad ranging contributions, both directly and indirectly to decision making in the wider society resulting in a significant benefit to society and it is this activity which has been defined as the ‘Third Mission’ of universities.

The most cited and accepted definition of activities encompassed in this ‘third stream’ is those:

‘concerned with the generation, use, application and exploitation of knowledge and other university capabilities outside academic environments’ ((Science and Technology Policy Research Unit Report to the Russell Group of Universities, 2002)

An important feature of this definition is that teaching, research and communication activities can each be considered to be ‘third stream’ **when they engage or target non-academic communities**. The SPRU Report to the Russell Group (2002) drew up a framework which indicated how core university capabilities and activities generate associated third stream activities and developed a list of 12 categories using the SMART approach (i.e. that any metrics developed in this area should be Smart, Measurable, Actionable, Relevant and Timely). The activities included in the list are all forms of knowledge transfer where universities share their knowledge widely to communities and industry to enhance economic, cultural or regional development, industry/business linkages or sustainability.

The 12 categories of third stream activities included:

PROPOSED CATEGORIES OF THIRD STREAM KNOWLEDGE TRANSFER ACTIVITIES
<ul style="list-style-type: none"> • Technology commercialisation • Entrepreneurial activities • Advisory work • Commercialisation and use of university facilities • Contract research with no academic clients • Non academic collaboration in academic research • Flow of academic staff, scientists and technicians • Student placements • Active alignment of teaching to economic and social needs • Learning activities • Social networking and • Non academic dissemination
<i>SPRU Final Report to the Russell Group of Universities, 2002</i>

Measuring Knowledge Transfer Activity Not Impact

The SPRU Report also includes a list of possible indicators that could be used to measure the volume of each of these activities within any institution. Importantly guidelines for the choice of these indicators were drawn up which included:

- The use of existing datasets where possible
- The use of existing university procedures to generate the data
- Limiting the cost of any data collection
- Development of a measurement system for aggregate, not subgroup level of activities
- Limiting intrusion on individuals
- Limiting the number of indicators per activity section
- The development of indicators across all areas

A critical element of the approach outlined within the Report is that it focuses on the importance of the measurement of the extent of third stream *activity*, rather than the *impact* of each category of activity. The authors provided evidence and arguments to support the position that ‘impact data’ in this area are ‘extremely skewed, uncertain and often attributable to serendipity’.

The SPRU 2002 Report is clear that the contribution of universities to society is complex and non-linear, that universities will differ in the focus and balance of their knowledge transfer activities and that this is desirable in a system which supports ‘a variety of excellence’ and that discipline areas differ in their range of knowledge transfer activities. The Report is also clear that whilst some metrics of knowledge transfer activities may be readily available, such as the metrics of commercialisation activity, that it is important to focus on activity measures which may be more difficult to measure quantitatively but

which may provide a better reflection of the overall economic and social benefits of knowledge transfer activities in the social sector.

All ATN universities for example are involved in engagement activity which falls outside the scope of research as it is understood for the purposes of the HERDC. Therefore it does not generate any additional IGS or RTS funding and is often devalued as a result. Furthermore, much of the social and community work that we do which is often undertaken in regional and disadvantaged areas is actually massively underfunded because of the limited resources available from the funding agencies (local government, small business, regional groups, community organisations etc) Thus, in many cases, the sector is both subsidising the activity and also failing to gain any block funding offset. Nevertheless the outcomes are often very impressive and the work requires the credibility, independence, integrity and intellectual capital of university academics and students.

It is also important to note that the existing metrics of the volume or quality of commercialisation activity may not represent the most relevant or accurate basis for determining institutional performance (Emerging Business of Knowledge Transfer Report 2005).

Given the extent of background work which supports the development of the measures of the volume and quality of the knowledge transfer activities, it would be appropriate to use these measures in the context of high level institutional strategic plans which recognise the distinguishing features of each institutions mission, mix of disciplines and degree of regional, national and international engagement.

Measurement of 'Engagement'

Whilst a definition of the type and scope of knowledge transfer activities and of measures of their volume and quality would be important elements in the development of any knowledge transfer funding policy, consideration should also be given to the inclusion of a focus on the characteristics of the extent of 'institutional engagement' between a university or research organisation and its non academic partners. A seven part 'test of engagement' was developed by the Kellogg Commission (1999) and this included whether the institution:

- was responsive
- clearly demonstrated respect for its partners
- displayed academic neutrality
- was accessible to external parties
- had integrated its service mission with its responsibilities
- coordinated its services across the institution, and
- had sufficient resources dedicated to its engagement

The importance of developing a definition of the key characteristics of institutional engagement is that it provides a basis for the collection of evidence that an organisation has the capacity and commitment to engage with its identified constituencies and communities and that it provides a 'quality' context within which institutional outreach activities occurs. Furthermore it is important to develop an understanding of the institutional characteristics which support effective engagement between a range of different academic and non academic institutions in the development of successful

‘Knowledge Transfer Networks’ at a regional, national and international level. The recent report on The Emerging Business of Knowledge Transfer (prepared by Dr John Howard for DEST) argues that *‘Future work in the area of university-business-government relations should give a priority to building practical, efficient and effective institutions of engagement (frameworks of rules, roles and relationships) as a foundation for the networks that are needed to underpin Australia’s national innovation system’*.

Development of a Knowledge Transfer Funding Model

The recent paper submitted by the New Generation Universities to the AVCC argues that the list of ‘knowledge transfer activities’ outlined in the SPRU 2002 report does not ‘readily give due recognition to the depth and breadth of extended engagement activities’ and also that it gives an ‘overgenerous recognition to the underlying characteristics of universities that have longer histories’. This might be a consequence if any funding policy ascribed weightings of ‘importance’ to each potential category of knowledge transfer activity, either through the use of a different weighting factor allocated to an activity category or to specific indicator measures of activities within a category, but it is clear that this approach is not supported by the SPRU Report and has not been supported by the Higher Education Funding Council for England (HEFCE) and the Office of Science and Technology UK (OST) in the development of the most recent round of the Higher Education Innovation Fund (HEIF). In their consultation document on proposals for a third round of funding under the HEIF scheme (July 2005), HEFCE and OST outline that they wish to reduce the burden of bidding activity that is associated with a competitive process and move to use a mix of formula funding and a smaller competitive bidding allocation *‘to provide the means to embed and further develop the knowledge transfer work of institutions to the extent that it becomes integrated into the institutions mission as a sustainable activity as well as generate new, cutting edge knowledge transfer practices and socio-economic benefits’*. Given that Australia has not yet defined a national approach to the definition, measurement and audit of third stream activities within the higher education sector, it would appear appropriate to integrate the experiences of those countries which have used a range of allocation processes to fund knowledge transfer activity into the first round of a national knowledge transfer funding scheme. It is clear that capacity building in this area should be a clear structural priority.

A critical, though sometimes overlooked aspect of knowledge transfer relates to the employment of research graduates in the various sectors of the economy. Several thousand graduates every year take newly developed information, understandings and advanced problem solving skills back into their professions, industry and the community. These are key knowledge workers who at their best become the leaders of innovation in all areas of society. However, a limitation to the impact of this process exists where such graduates possess less than optimal capabilities in translating their knowledge and research skills into productive activities. Such a limitation has been noted by policy makers, industry representatives and universities. The underlying point is that knowledge **transfer** requires particular skills beyond those of learning or research, and these need to be developed in a conscious way, particularly in the case of the vast knowledge resource which HDR graduates represent.

Question 2: To what extent are knowledge transfer activities already supported through existing funding programs? Are there areas where there is insufficient or inappropriate support for such activities?

Generally these activities are not supported by existing funding programs although most, if not all are expected to generate returns to the University or at least be cost neutral.

It is the case that the three streams of University activity are interdependent – the ability to exploit research outputs through knowledge transfer activity is dependent on there being high quality innovative research activity (second stream) and equally good research will inform good teaching (first stream). Thus it is not surprising that various existing current or proposed Federal policies, funding programs and activities which focus on either research quality or impact or on teaching and learning performance have ‘third stream’ elements eg ARC Linkage Grants, Cooperative Research Centres, Collaboration and Structural Reform Fund, Regional Protection Fund, Pre Seed Fund etc.

In general the area of commercialisation of research activity has received the most focus in targeted funding programs and building the national or institutional capacity for knowledge transfer has usually been an unforeseen benefit of funding programs in this area. The proposed Commercialisation Training Scheme (CTS) for 250 Higher Degree by Research students annually is one form of program which will contribute to the more effective transfer of knowledge; however the scope of the CTS is extremely limited by comparison with the size of the knowledge base which research graduates take into industry and the community each year. A more systematic approach is required to develop the knowledge transfer capability of HDR graduates and, through this means, to harness their skills and knowledge for economic and social innovation and gain. Current funding arrangements for HDR students do not allow time for the effective development of these capabilities which are fundamental to maximizing the knowledge transfer potential of HDR graduates. Such a system-wide approach will require funding as one element of a knowledge transfer funding policy.

As outlined above, a national funding allocation process which supports third stream activities would enable institutions to innovate, measure and evaluate their knowledge transfer activities in a systematic manner informed by national and international performance criteria.

Question 3: Are there examples of knowledge transfer activities, indicative of the definition and scope you propose that you wish to identify for possible elaboration as case studies?

The five universities of the ATN commenced work on this issue through their ATN LEAP (Learning Employment Aptitudes Program) as a cost effective and collaborative contribution to the development of HRD capabilities in communication, leadership, teamwork, entrepreneurship, research commercialisation, project management, etc. For

further information see the DEST-commissions report Postgraduate Research Students and Generic Capabilities: Online Directions

www.dest.gov.au/sectors/research_sector/publications_resources/profiles/postgrad_students_workplace

International: US and UK proposal to fund four projects to build science and innovation ‘bridges’ between UK universities and US universities and high tech businesses eg University of Cambridge and MIT will work together to develop innovative and entrepreneurial skills among students for a program of education, engineering and biology and deliver training courses for industry managers (2005).