

# Submission to the Productivity Commission's Commissioned Study into Public Support for Science and Innovation

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## Business and management education for the science and technology research community

### 1 Purpose

1.1 This submission examines an aspect of the innovation system only – the skills gap in business and management in the research community. It also proposes one way it might be better met ie. through tailored, in-house education focussed on the research enterprise.

1.2 The submission is prompted by recent public comments from Commissioner Mike Woods that the Commission would welcome further submissions in relation to human capital formation and knowledge diffusion aspects of Australia's innovation performance, and by lack of coverage of the general issue of business and management skills in the Commission's Draft Research Report..

### 2. Background

2.1 The submission is informed by an investigation of the skills gap and the relatively low take-up of education in business and management education by scientific research professionals over the course of 2006, culminating in a workshop convened with leading research managers from private and public enterprises in September 2006. The main findings of the workshop are included below, and the report of outcomes can be provided.

2.2 This investigation in turn was prompted by:

- 15 years' experience by APESMA Management Education and latterly Chifley Business School in graduate education in management for technology professionals, which demonstrated that while the engineering profession has a high propensity to undertake additional study in business and management, it is not matched by scientific researchers
- experience in innovation policy and programs, most particularly with the Victorian Government's Science Technology and Innovation initiative and the finding of its 2000/2001 audit of research infrastructure which pointed to low levels of knowledge of in business management, especially asset management, among public research institutions.

2.3 The School of Enterprise, University of Melbourne (UofMSofE) has been closely involved in the development of the issues since the workshop and the proposal presented below. As well, the submission has benefited from advice from Commonwealth officials from DEST, the ARC and DITR.

### 3. Workshop on business and management education findings

3.1. Successful business managers of research advised that the destruction of value through poor management of resources, assets and capabilities during the research process has greater detrimental impact than poor commercialisation of intellectual property.

3.2 The causes are matters of skill, and of motivation and perceived relevance to research. In relation to skills, most pressing needs are:

- research project management, including timetabling, resource allocation and risk
- strategic management, particularly prioritisation and choice of research activity
- people skills – leadership communication and persuasion
- ability to prepare a business plan that demonstrates sound decision analysis and evaluation of alternatives

3.3 Researchers are generally motivated by scientific curiosity rather than business outcome; they want to see that acquiring management skills will 'put value back into research'. As well, researchers cannot afford extended periods away from the bench. Learning about management is most effective when it is experienced within the context of real research projects and adapted to the imperatives of the research experience eg. project and strategic management which takes into account that the outcome of research is by definition unknown, and emphasis on management of equipment assets and intellectual property.

3.4 Workshop participants described a continuum of learning need depending on career focus, with all researchers needing some understanding of business and management principles and those who would become research business leaders programs up to MBA level. For researchers in large, private corporations, needs are more clearly defined and met, often within the workplace. There is a much less evident identification of the need in most publicly funded bodies and little by way of concerted effort to meet it; provisions for business and management education are typically scant.

#### **4 Role for government**

4.1 In relation to the addressing this skills gap in publicly funded research, the workshop observed that:

- government should promote and support business management in research alongside commercialisation
- research funding agencies should take into account the availability of formal business management skills as a matter of course when considering funding requests
- where these skills are not available sufficiently, funding agencies could require their acquisition and/or allocate grant funds for these purposes

4.2 With the limited exception of the Commonwealth's new Commercialisation Training Scheme (see 4.1 below) and specific support for commercialisation skills at state level, there appears at present little provision for management education for publicly funded researchers. The Commission may wish to consider whether specific new funding is warranted. The Commission may also wish to examine which agency or agencies might be best placed to set standards for business and management capabilities in research and deliver any financial support for these purposes. Inquiries since the workshop suggest that there may be impediments or gaps in the respective responsibilities of Commonwealth agencies which inhibit a concerted effort, over and above the differences between Commonwealth and State priorities.

#### **4. Education options**

4.1 The Commercialisation Training Scheme constitutes a real opportunity to change behaviour and build appropriate skills in the research community, to the extent that it subsidises higher

education providers to offer business and management courses for the research community and provides stipend support to the individual for these purposes. It is welcome but it goes only part of the way. Its focus on commercialisation would be better broadened to cover the gamut of business management. Further, there are inherent weaknesses in:

- providing funding direct to higher education providers to deliver what they interpret as meeting the need on the basis of what they can offer – not all of what is needed demands a higher education award even though there is great value in any education allowing articulation so as to open options for further learning as careers and responsibilities develop
- delivering business and management education away from the research context, especially for researchers at critical points of their professional careers (over and above the paradox itself of providing a stipend by way of an incentive to learn to act commercially)

4.2 An alternative approach is to provide funding to public research bodies direct specifically to acquire business management education 'in-house' for researchers within their ranks. The purchasing body would be able to specify an education experience such that it can be scaled up from short courses to postgraduate awards, and delivered in forms including intensive face-to-face, distance and blended, to meet work and career development requirements. Most significantly, the approach affords tailoring of course contents to the particular imperatives of the enterprise – eg emphasising commercialisation or asset management depending on strategic need ,and taking cases and assessment tasks from particular projects - encouraging deeper engagement by both researcher and the management of the enterprise, and a more immediate application of the skill. Subject to program design and participant numbers, in-house education can be more cost-effective than publicly available education.

4.3 Chifley and the UofMSofE independently have experience in delivering such programs to the corporate sector, and jointly deliver a highly successful Graduate Certificate in Project Management. Chifley and the UofMSofE are considering a similar model for research bodies, built around, but not limited to, the learning needs identified by successful business managers of research. Whether any research body supported to acquire in-house education would purchase a Chifley/UofMSofE would be a matter to be determined competitively.