

'PROOF OF CONCEPT' CHECKLIST

Developed by the Proof of Concept Advisory Group in collaboration with Science Industry Australia

Most of the approximately \$2.2 billion spent per year in Australian universities on science and innovation is aimed at contributing generally to the advancement of human knowledge through the academic literature. However, there is also some commercial research undertaken within universities, enough to have around 450 staff working on its commercialisation. There is debate about whether the amount of commercial research should be more or perhaps less. This paper is not aimed at THAT debate – what it aims to do is help improve the governance of the existing level of commercial research by universities.

Commercial research needs to be managed differently to academic research. Commercial research typically cannot be submitted to peer review by the editorial boards of journals. This means that for commercial research universities need to establish their own internal quality control processes that mimic those established by the editorial boards of journals. In surveying Australian university commercialisation, the Science Industry found few commercialisation bodies with established processes to guide academics undertaking commercial research. CSIRO and most major overseas research universities have a 'proof of concept' checklist to guide researchers on commercial research.

The SIAA formed a Proof of Concept Advisory Committee to develop a 'proof of concept' checklist for universities. The Committee comprised senior staff from the Australian Research Council, Australian Vice Chancellors Committee; CSIRO, the Australian Proteome Analysis Facility; ATP-Innovations, Australian Institute of Commercialisation, InnovationXchange, Monash Commercial, UniQuest; GBS Ventures and Starfish Ventures as well as representatives from science industry companies. The checklist is based on best practice experience across research agencies, universities, commercialisation intermediaries and venture capital companies.

The 'proof of concept' checklist contains:

- Clear description of the concept to be proven;
- Statement of cost – benefit analysis for the concept which may take the form of a business case, including the novelty of the technology, intellectual property, freedom to operate in the market niche satisfied, and the market prospects;
- A comprehensive review of the current state of the concept and the field of endeavour;
- The likely commercial benefits of the proposal;
- A comprehensive risk assessment; and
- The resourcing and funding requisites.

As well as reducing the number of poor quality commercial prospects put to industry, use of the checklist would facilitate development of some useful commercialisation metrics. For example, commercialisation bodies could publish information on the number of 'proofs of concepts' undertaken in their university and in what field. This would be an important indicator for industry. It could also be used by universities. For example, certified 'proof of concept activity' could be listed on an academic's CV. Proof of concept activities fill a role in commercially oriented research analogous to 'papers' in academic research, with dollars earned, patents, etc being a measure of impact analogous to citations. The proof of concept metric is an intermediate measure of the conversion rate of ideas into marketable products, processes and services.

An assessment body appointed by the university and drawn from its commercial arm would assess applications for proof of concept using criteria based on the dot points above. The assessment system would be self-moderating in the same way that bibliographic metrics became collectively self-moderated by universities a year or so after that system commenced operation.