Australian Council of Deans of Science

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Submission to the University Research Commercialisation consultation paper

April 9th 2021

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The Australian Council of Deans of Science (ACDS) was constituted in 1995 to represent the executive leadership of Australia's university science faculties and schools. Its membership includes all but one of Australia's publicly funded universities.

The ACDS is pleased to respond to the consultation paper *University Research Commercialisation* issued by the Department of Education, Skills and Employment. It acknowledges and supports the need for considerable improvement in the translation of Australia's university research into commercial and social outcomes. It congratulates the authors of the consultation paper on putting forward some significant and thought provoking ideas.

Mission-driven research

The ACDS agrees that Missions are an appropriate priority setting mechanism, for all the reasons given in the consultation paper. They should also be elaborated into smaller targeted Challenges. The examples given in the consultation paper are good ones, the UK Grand Challenges, Japanese Moonshots and German *Hightech-Strategie*. We make the point strongly, however, that each of these is well resourced and well organised. Otherwise grand missions, while they do not 'fail', won't achieve the desired outcome for Australia. Some consideration as to what proportion of research commercialization funding should be mission driven needs to be made. We would argue that this should be less than 50%.

Criteria to select Missions should involve national priorities and end-user needs. These matters have been well canvassed in a number of reports, most recently those by Innovation and Science Australia (now IISA).

The ACDS is concerned about the concept of Australian research meeting demand. This isn't a simple market situation in which products are well understood by suppliers and sellers. Often end-user organisations themselves aren't clear about their needs or what research might be relevant to their mission. The ACDS advocates well-resourced and valued partnerships as a priority for any national research commercialisation scheme, with the goal of maximising mutual trust and understanding, and generating a shared vision of supply and demand for research.

Stage-gated Scheme design

A stage-gated model works well for some aspects of research commercialisation. It may not be appropriate for early-stage research however, where it often takes time to determine if an idea will really work.

The ACDS is aware of a great many reports on university-industry collaboration and commercialisation commissioned over the last many years by government and its agencies[1]. They contain a great deal of well-considered views on suitable commercialisation processes which should guide the development of this approach.

The stage-gated model seems to focus on research that has progressed to a commercial product via university-industry partnerships. The ACDS believes that such projects form only one aspect of the commercialisation benefit that university research can add to industry and society at large.

[1] Australia 2030 – stakeholder consultation report

A far larger benefit can be derived from supporting university graduates and post-graduates, to turn ideas derived from research into commercial ventures of their own. A scheme with this focus would be more preoccupied with investing in organisations such as campus-based innovation precincts and incubators. It would be concerned with mechanisms to encourage university and industry support for and collaboration with such organisations.

Incentives for participation

We agree with the points made in the consultation paper concerning the strong emphasis in universities on basic research, driven by the impact of ERA, international research rankings, and dependence on international student income. The changes introduced under NISA, especially the recognition of category 2-4 research grants in funding models, has provided a countervailing influence. Universities are doing and need to do more to create a culture of recognition for translational research and commercial outcomes. This is starting to have an impact noting that the impact of such changes takes time.

University academics are driven to achieve academic outcomes, particularly recognition by their peers. In the longer term, academic participation in translational research will need be sustained by establishing, through institutional structures, a culture of peer recognition for high quality work of that kind.

With regard to participation by business and industry we note the many reports detailing the issues for Australia, such as the over-representation of SME's in its industry profile, the dominance of global corporates and their lack of appetite for investment in Australian innovation. There is a wealth of wisdom and insight in these reports, and the ACDS does not presume to add to that, except to assert that cultural change needs to occur in both Australian industry and universities, and that some substantial new scheme and organisational structure is necessary for this to occur. We believe that the Medical Research Future Fund provides an example of what can be done in the niche area that it serves.

Industry-university collaboration

The ACDS regards industry-university interaction as the single most important issue for delivering the benefits of basic research to industry and society at large. There must be significantly more interaction, and it must be such as to drive cultural change on both sides. It is not enough to focus on commercialising IP. Through working on common challenges, such as national missions, industry and universities have to come to an appreciation of each other's perspective, arrive at shared goals and establish clear bilateral value propositions.

ARC Centres of excellence provide a model that can be adapted for mission-driven centres supporting industry-university interaction. In the case of research commercialization hubs however, these might be led by industry groups, located on a host university campus and involve staff from several universities on the basis of their expertise for the enterprise at hand. Careful consideration of associated governance models will be important to ensure this model works.

The ACDS is concerned at the suggestion that academics become entrepreneurs in some broad general sense. Academics are typically not trained or skilled as entrepreneurs, nor would that be conducive to their role in pursuing fundamental and some other critical types research. There are outstanding examples of entrepreneurial academics, but they are not common. Rather, universities need to recruit and value a different kind of academic, one that is more a knowledge broker and translator between researchers and industry.

For a time, Australia envied the Israeli system of innovation incubators. However, the incubator system relied upon a supply of highly trained scientists and engineers immigrating from Russia and Europe, a supply that Australia could not match. Now Australia has a large supply of postgraduate students who will not gain employment in universities, and even more, a large supply of early career researchers whose employment prospects have been curtailed by the economic disruption of COVID-19 amongst other things. With this cohort Australia now has the potential to enact its own version of the Israeli innovation incubator system, which has proved in that country to be a powerful means of delivering the benefits of university research via commercialisation.

Governance arrangements

The stakeholders in any scheme to promote university research commercialisation should be leaders in industry, government, universities and end-users. The peak governing body needs to sit above but be inclusive of individual government departments that have a role.

The single Australian example of a scheme that operates on a scale and in a way that could greatly enhance university-industry interaction, and boost the commercial returns of university research, is the Medical Research Futures Fund (MRFF). Its governance arrangements provide an important model.

Concluding remarks

The consultation paper canvasses issues that have been subject of previous reports, in particular the 2014 consultation paper *Boosting the Commercial Returns from Research* issued jointly by the Department of Education and Department of Industry at the time.

The ACDS would like to emphasise that the university sector has changed considerably since the 2014 consultation paper, particularly in response to the government's National Innovation and Science Agenda and the ARC's *Engagement* and *Impact* Assessment.

Most research intensive universities have now developed strategic plans which identify those strengths that might attract industry interest. They are developing organisational structures that pull those strengths together and make it more attractive for industry to engage. In particular they are developing or closely partnering with innovation and technology precincts. They are considering reward structures that will encourage industry collaboration by their staff. In summary, universities are poised to engage with many of the proposals in the consultation document.

These developments do not involve requiring staff to abandon basic research in favour of becoming more entrepreneurial and commercially focussed. Rather the challenge facing deans of science is to expand the research culture of science faculties beyond that of fundamental discovery-focused research to include more translational opportunities, and to develop those people whose talents lie in that direction.

In achieving the above however, discovery science must not take a lesser role in favour of increased commercialisation. That would be to starve the innovation pipeline of one of its most significant inputs.