

Australian Academy of Science

Comment on the Commonwealth Commercialisation Institute (CCI)

Australia has a relatively poor record of generating commercial returns from its significant investment in research and development. It is important to identify the main factors that prevent the successful commercialisation of new products, processes and services.

Q. What do you think are the main barriers to commercialising new ideas?

1. Lack of information on the potential market
2. Limited access to networks of experienced personnel (eg mentors)
3. Lack of market development skills (ie skills that are important for commercialising an idea)
4. Cost or availability of finance

Comment

A major problem is determining whether a scientific idea has true commercial potential. Unless researchers have expertise in the market as well as in the lab and the clinic, there is a tendency to over-value ideas and platform technologies and under-value the amount of work it takes to turn an idea into a product. Most academic scientists in Australia have little ability to determine if an idea or discovery has the potential to become a marketable product.

The great majority (of the order of 80 per cent) of new ideas with commercial potential come from academia. However, while the inventor is usually the best champion of the new idea, academia provides few rewards for pursuing commercialisation. In the academic world any attempt to commercialise is regarded as a distraction from the main game of research publication.

Universities and other academic groups, when hoping to commercialise, regularly push the virtues of potential products too far and too quickly once proof-of-

concept has been established. Early spruiking of a product, or an early initial public offering (IPO), without committed ongoing support and a solid understanding of potential markets, is likely to pose a serious risk with harmful consequences for all involved. It is important that support is provided to researchers and their organisations so they can progress further down the technological readiness path, ie towards advanced demonstrator stage or prototype stage, before an IPO or other serious involvement with business investment.

Finally, prevailing cultural attitudes to commercialisation need to be understood and addressed. Australian researchers and their organisations do not, in general, have a positive attitude towards those within academia who attempt to commercialise research. Cultural attitudes are essential to support personal motivation and encourage researchers to participate in the commercialisation of research in Australia.

Q. What is needed to overcome these barriers?

1. Assistance for specialist advice (eg business planning, intellectual property management)
2. Assistance for attracting experienced management
3. Access to finance for proof-of-concept
4. Access to finance to progress innovation to a market entry point

Comment

The solution to problems 1 and 2 lie in providing free, timely, professionally-informed and proactive advice about commercial value from expert potential manufacturers, marketers and users of the product.

The average Australian research scientist is not market-aware, but an awareness of current and potential markets is an absolute requirement to focus early stage research. Such awareness must be informed by external sources such as

industry, industry bodies, consumer groups, venture capital, marketing companies and financial advisers. The development of market awareness among researchers, particularly those interested in commercialisation of their research, potentially via discipline-specific training courses for Australian researchers, would be worthwhile.

The availability of sufficient funding at appropriate stages of research and development is very important. Often initial R&D costs are met by public funding – private funding takes over only when there is an effective product with a defined market, and then R&D money is mostly development orientated, and mostly spent on manufacture development. To capitalise fully on the work of Australian researchers, efforts should be made to guard against researchers having to compromise ownership development paths due to the lack of funding options throughout the R&D process. While this is in part a question of availability of funds, it is perhaps even more an issue associated with the divorce between scientific and business knowledge in Australia.

Q. How should specialist advice be delivered?

1. Individual coaching
2. Formal training sessions
3. Workshops

Comment

As outlined above, the investment of expertise at early stages of commercialisation of a potential invention is critical to determining which ones to pursue, how to do it effectively, who might pay, and which ones to abandon.

Personal attention from well qualified experts is best of all, but a range of advice delivery methods according to level of development is more likely to be realistic, appropriate and cost-effective. Discipline-specific market awareness training could cater for groups, whereas individual case managers might be appropriate to provide personnel advice to researchers who are more advanced along the path to commercialisation.

It should be noted that that a number of state government programs and university technology transfer companies have amassed significant and valuable expertise in this context.

The Institute will build the capacity of our talented researchers, entrepreneurs and innovative firms to rapidly convert ideas into successful commercial realities.

To ensure that the Institute can provide high quality assistance to applicants, it may need to adopt measures for it to be self sustaining. This could be achieved through a mutual obligation approach where the Institute shares the risk and returns on commercial success. This approach could include mechanisms for repayable support.

Q. What are the most appropriate mechanisms to implement principles of mutual obligation and repayable support?

1. Grants that are repayable if the project is successful
2. Co-investment scheme (ie the CCI would invest alongside a third party private investor in a company)
3. Facilitate foreign direct investment
4. Loans

Comments

Most potentially commercialisable ideas fail because they do not reach the threshold of commerciality – anything that financially discourages risk taking, especially in the short to medium term, will discourage attempts to commercialise.

Assessment of mutual obligation or repayable support should account for and proportionally value resultant enterprises in terms of taxes paid, sustainable employment generated, and economic activity created. The Academy believes it would be an error to treat the CCI as an agency that must balance its books in an

internal sense; much of its contributions will be to the benefit of the nation through better health, sustainable employment, taxes paid and new economic activity.

Q. When on the developmental pathway (as outlined in the discussion paper) is it most suitable to introduce repayable support?

Please choose one from the options below.

Ideas

Proof of Concept

Development

✓ **Growth**

Comment

The later the better – and the more likely it will be that a valuable product will succeed.

Q. What needs are specific to research organisations that should be taken into account in the design of the CCI?

For the most part, existing structures, systems and cultures within research organisations are orientated according to research outcomes. The CCI should be designed to respect existing structures, systems and cultures and actively avoid compromising the ability of research organisations to undertake world leading research.

Q. Where are you currently on the developmental pathway and what specific services do you require to progress along the pathway?

Not relevant to the Australian Academy of Science

Additional comment

The relationship between the planned CCI and existing technology transfer and commercialisation programs and entities requires careful consideration. Efforts should be made to integrate and coordinate with existing organisations, many in the public sector, that seek to commercialise research.

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